

Does Oral Sentence Building Improve Grammatical Accuracy in Speaking?

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Abstract:

Oral sentence building (OSB) is a chunk-based speaking exercise developed to improve grammatical skills while speaking. The present study investigates whether OSB improves grammatical accuracy in speaking, focusing on the use of certain grammatical elements and the influence of similar sounds. Thirty high-intermediate level participants attending a national university took a pretest and posttest which included 10 OSB questions. They were instructed to practice OSB exercises 30 times (three times a week for a total of 10 weeks) between the tests. Their scores on the pretest and the posttest were analysed with a correlation analysis and t-test. The results of the analyses revealed that the number of OSB practice sessions and accuracy in the use of plural forms were significantly correlated, suggesting that learners could pay more attention to plural forms while answering OSB questions. This finding indicates the possibility that doing OSB exercises can positively affect learners' speaking proficiency.

Key Words: oral sentence building, grammatical accuracy, working memory

Introduction

Numerous studies have claimed that, for a long time, the English speaking ability of Japanese learners needs improving. In fact, Japanese tend not to be adept at speaking, as indicated by the data of TOEFL iBT Tests; the Japanese average score of the speaking section is 17 points, which shows that their speaking ability is limited (Educational Testing Service, 2016). Several studies on the development of speaking skills have been carried out, with suggestions for some preferred methods, exercises or tasks; for example, the use of chunks has been noted to have a positive influence on improvements in English skills. It is important to give proper consideration to chunks because some combinations of words, including chunks, make up 58.6 percent of discourse in spoken language (Erman & Warren 2000). In addition, Yamaoka (2015) has proven that chunk-based learning improves fluency and accuracy in an experiment in which half of the participants used a random-sentence list and the others a patterned-sentence (more chunk-oriented) list for oral reading practice, the effects of which were confirmed with picture description tasks. Fluency and accuracy should be trained in a well-balanced manner, but as Iida (2014) maintains, it is essential to develop fluency on the premise of accuracy.

Nevertheless, there are not many speaking exercises where chunks are mainly employed, particularly to improve grammatical accuracy in speaking. Therefore, it is necessary to develop an exercise that demands attention to word order more than such oral practice as slash reading and shadowing or repeating exercises in chunk units. One possibility is to explore oral sentence building (OSB). This is a chunk-based exercise in which a learner orally produces a meaningful sentence by rearranging three chunks heard in a random order. As Adachi (2009) notes, teachers at schools in Japan tend to divide a sentence into bundles by sense group or thought group, and such word groups are called learning chunks. In accordance with this, chunks used in an OSB question are basically learning chunks. Table 1 shows the procedure of an example OSB question.

Table: 1
The Procedure of an Oral Sentence Building Question

Question	is going to / the girl / meet her friends
Phase 1	You hear, "is going to".
Phase 2	One second later, you hear "the girl".
Phase 3	Another second later, you hear "meet her friends".
Phase 4	Within five seconds, you change the order of these chunks so that they make a meaningful sentence, that is, you say "The girl is going to meet her friends".

In this way, OSB is directly relevant to syntax. As it is not simply repeating what is heard, it is an exercise with a high cognitive load. It is beneficial for non-native speakers to consider how such a cognitive load can be lessened. Automatization is one of the keys to this. Furthermore, OSB entails both listening and speaking activities. Like shadowing or repeating, a certain level of listening ability is integral to answering OSB questions successfully. In these exercises, retaining input is crucial before or while verbalizing. In other words, OSB also requires manipulation of information in memory storage. Shinozaki (2013) surveys OSB relating to such points of view and finds out that learners who practice OSB exercises on a regular basis will become able to focus on functional words such as prepositions and articles while answering OSB questions. However, the study did not analyse in what grammatical elements the participants came to make fewer mistakes.

Literature review

Automatization and level of processing

Native speakers of any language usually focus on messages, what they want to say, rather than the language they are speaking. In contrast, ordinary language learners, particularly those who are not proficient enough, are less capable of allocating attention to messages than native speakers. This is because non-native speakers need to think of what words or structures to use if they want to speak accurately.

This relates to automatization, which is the ability to process information without conscious effort. According to the Attention-Processing Model, lower-level processing regarding vocabulary and grammar can be automatized with certain amounts of repetitive practice, thus enabling learners to pay more attention to upper-level processing (McLaughlin, 1987). The speed of processing varies depending upon the degree of automatization. Beginners are hardly able to spare the cognitive resources for upper-level processing since language components such as vocabulary and sentence structures are not internalized in their minds sufficiently. Therefore, it is a key for learners to promote automatization.

Currently, there is a variety of exercises that contribute to automatization. The concept of levels of processing explains that there are three types of processing: phonemic processing, structural processing, and semantic processing. The third is thought to most successfully facilitate elaboration of coding (Craik & Lockhart, 1972). Kadota (2015) argues that there is a strong connection between semantic coding and known information in long-term memory, which makes it possible to make better use of the semantic network. What is important is that semantically coded information can be retained more easily in memory.

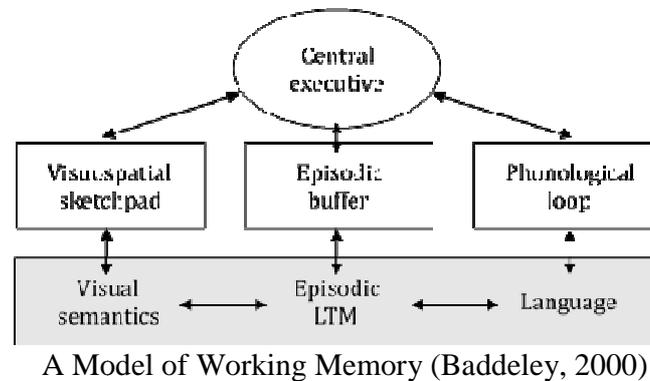
Taking the mechanism of OSB into consideration, OSB exercises may benefit the automatization of syntactic processing due to the fact that rearranging chunks is directly related to syntax, and answering OSB questions successfully requires semantic analyses of each chunk.

Working memory

The three kinds of storage including sensory memory, short-term memory, and long-term memory are explained with the memory model proposed by Atkinson and Shiffrin (1971). Although each form of memory interacts with the others, it seems that short-term memory is the most relevant to OSB in that it requires temporal memorization of chunks. However, in addition to that, OSB entails processing of input simultaneously.

Working memory focuses not only on temporal storage but also on manipulation of stored information. It has four slave systems, one of which is called the phonological loop, and which is the most closely related to language as shown in Figure 1. The phonological loop is comprised of two components, the phonological store and the subvocal (or articulatory) rehearsal system (Baddeley, 2000). A notable point of the phonological store is that “traces within the store were assumed to decay over a period of about two seconds unless refreshed by rehearsal” (Baddeley, 2002, p.86). Furthermore, according to the word-length effect, discovered by Baddeley, Thomson, and Buchanan (1975), it is harder to reproduce long words than short ones because it takes more time to pronounce longer words; additionally, the number of words people can pronounce in approximately two seconds affects words they can memorize, thought to be a reasonably predictable memory span. Those who can pronounce faster can remember more words if other conditions are identical. Trying to pronounce faster will lead to the effective use of working memory. Moreover, repetitive practice of some speaking exercise leads to an increase in the speed of processing information, which means that a greater amount of information can be organized into fewer units (Verhaeghen, Cerella & Basak, 2004). Thus, the automatization of subvocal rehearsal is quite significant.

Figure: 1



Purpose

The present study aims to investigate and discuss the possibility of how a continual OSB practice contributes to improving learners' speaking ability, taking a closer look at the development in the usage of grammatical elements and some other phonetic influence.

Based on this, the following research questions were set.

1. What grammatical elements are improved by the repetitive OSB practice?
2. How does the repetitive OSB practice affect the use of collocations?
3. Can the repetitive OSB practice reduce phonetic influence that may induce some mistakes?

Method

Participants

The participants were 30 students at a national university in Japan. Out of these participants, seventeen were undergraduate students who majored in English education (twelve freshmen, one sophomore, two juniors, and two seniors); eleven were graduate students (ten majored in English education and the other one majored in another field); one was a Chinese research student, and the other one was a credited auditor. All these participants had studied English on a long-term basis (for at least 6 years), so their English proficiency level was around high-intermediate.

Instrument

Ten OSB questions including various grammatical elements were created for both the pretest and the posttest (see Appendix I). The same questions were employed for those tests, but the order of the questions differed in each test.

The participants were individually asked to answer OSB questions at a maximum of 30 times between the tests. One set contained 10 OSB questions with diverse grammatical elements.

Procedures

In the pretest, the participants answered 10 OSB questions. For the following 10 weeks, each participant was encouraged to answer OSB questions once a day, three times a week; in other words, there were 30 sets of OSB questions prepared for the practice. The audio of the OSB

questions had been uploaded to a video sharing site in advance, the URLs of which were sent to the participants automatically by e-mail. After each practice, they were asked to send an e-mail back to the author to show they were conducting the practice. Consequently, it was regarded that no practice was conducted if there were not any replies to the author. When the 10 weeks had passed, the participants took the posttest.

Analysis

The test questions included several different grammatical elements such as plural-s (PL), articles (ART), and third-person singular present forms (TPS). As Izumi and Isahara (2004) noted about accuracy order of grammatical morphemes, these grammatical morphemes often become objects of study, although there are subtle differences in the results of studies in this field. Also, an error analysis was conducted and it was found that some of the participants had made similar mistakes concerning the use of collocations (COL). In addition, some mistakes were induced by similar sounds (SS) such as “books and box”. Therefore, in this study, PL, ART, TPS, COL and SS were chosen as the objects of analysis (see Appendix II).

A correlation analysis was carried out on (a) the number of OSB practice sessions and (b) development in the use of PL, ART, TPS, COL, and influence of SS respectively. Also, a *t*-test was conducted on the numbers of correct answers for each variable in the pretest and posttest.

Results

The descriptive statistics for each variable are shown in Table 2. Since the participants were not forced to work on the practice, the number of OSB practice sessions ranges widely.

Table: 2
Descriptive Statistics for Each Variable

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
Practice	30	0	30	11.47	9.709
PL	3	-1	2	.63	1.033
ART	5	-2	3	.70	1.179
TPS	1	-1	1	-.13	.629
COL	5	-2	3	.57	1.104
SS	3	-1	3	.50	.938

Note: Practice = the number of OSB practice

Table 3 displays the Pearson’s correlation coefficients between the number of OSB practices and each variable. As a result, the number of practices with the development in the use of PL correlated significantly and moderately ($r = .420, p < .05$). On the other hand, no other results

demonstrated a correlation between the number of practices and each variable.

Table: 3
Correlation Coefficients between the Number of Practice and Each Variable

		Practice	PL	ART	TPS	COL	SS
Practice	Pearson Correlation	—	.420*	.034	.022	-.222	.288
	Sig. (2-tailed)		.021	.859	.909	.239	.123

Note: $N = 30$, Practice = the number of OSB practice, * $p < .05$

Table 4 shows the results of t -test for the differences of the number of correct answers in the pretest and the posttest. All variables other than TPS significantly differed, where PL was slightly but the most significantly different ($t = -3.357$, $df = 29$, $p = .002$). Summarizing the results of the correlation analysis and t -test, the repetitive OSB practice seems to have directly contributed to development in the use of PL.

Table: 4
Results of t -test for Pretest and Posttest

	Paired Samples Test							
	Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
PL (pre) - PL (post)	-.633	1.033	.189	-1.019	-.247	-3.357	29	.002*
ART (pre) - ART (post)	-.700	1.179	.215	-1.140	-.260	-3.252	29	.003*
TPS (pre) - TPS (post)	.133	.629	.115	-.101	.368	1.161	29	.255
COL (pre) - COL (post)	-.567	1.104	.202	-.979	-.154	-2.811	29	.009*
SS (pre) - SS (post)	-.500	.938	.171	-.850	-.150	-2.921	29	.007*

Note: $N = 30$, * $p < .01$

Discussion

Of the five variables, it was the development in the use of PL that the repetitive OSB practice directly influenced in this study. It can be said that the participants became able to pay more attention to plural forms by using their working memory more effectively.

To the contrary, no other variables were correlated with the number of practice sessions even though the results of *t*-test showed significant differences in many of them. In fact, the study's procedure was that the participants worked on the practice three times a week voluntarily. It is difficult to judge from the results of the correlation analysis that some direct influence by OSB necessarily appeared on the other variables. In general, it is said that ART takes Japanese learners of English a lot of time to master and even acquire as knowledge.

Taking the results of each analysis into consideration, few developments of variables which OSB affected were acknowledged. As one of the causes, there might have been some problem in the intention, purposes, and structures of the practice provided. It cannot be said that the questions employed for the practice in this study sufficiently specialized in improving certain grammatical elements or reducing some influence that made it complicated to frame a sentence or pronounce correctly as seen in the result of SS above. This means that mixing a number of target grammatical elements in one set of questions for practice may make the purpose of practice unclear; therefore, different results might have occurred if the questions included in one set had been limited and the participants had been explained what they were practicing for every time.

Additionally, the grammatical elements used in this study were not selected based on the participants' proficiency level. For future studies, it is necessary to extract from a preliminary test which grammatical elements participants find difficult. Moreover, the number of analysis subjects was low in this study, so more targets should be prepared for each variable.

Finally, as a limitation, the outcome and the results of the analysis discussed were produced only by the OSB tests, which does not always guarantee the effects of OSB on learners' actual speaking skills.

Conclusion

Owing to increased globalization, it is necessary for the Japanese to improve their speaking skills. One possible contribution is chunk-based learning. As in the previous study, OSB, a chunk-based speaking exercise, showed positive effects on the improvement of speaking skills; however, it did not reveal specifically which grammatical elements or other factors were affected and developed by OSB. Therefore, this is what the present study tried to focus on. As a result of the participants practicing OSB exercises for a certain period, the most remarkable development was found in the use of PL. By contrast, as to improvements in the use of collocations and the reduction in the influence of similar sounds, no direct effects by OSB were shown. There is a limitation that this study only considered the results of OSB tests. Thus, future studies will require some research on how OSB contributes to the development of actual speaking ability by such methods as giving open questions.

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Appendix**Appendix 1****Pretest and posttest**

- to carry / those heavy books / I expected him
(Answer: I expected him to carry those heavy books.)
- he was / the cat / surprised at
(Answer: He was surprised at the cat.)
- to help me / it is / kind of you
(Answer: It is kind of you to help me.)
- is often / very difficult / studying hard
(Answer: Studying hard is often very difficult.)
- that man / the secret / should have kept
(Answer: That man should have kept the secret.)
- that he wrote / the novels / these are
(Answer: These are the novels that he wrote.)
- are you / bring your friends / going to
(Answer: Are you going to bring your friends?)
- the company / this is/ where my brother works
(Answer: This is the company where my brother works.)
- there was / near my house / a big supermarket
(Answer: There was a big supermarket near my house.)
- meeting you / looking forward to / I am
(Answer: I am looking forward to meeting you.)

Appendix 2**Analysis subjects**

Category	Items
Plural	books, friends, novels
Article	a, the
Third-person singular present	works
Collocation	surprised at, it is kind of you, are you going to, there was, looking forward to
Similar sound	those, books, that