Early adolescent learners' noticing of language structures through the accumulation of formulaic sequences : Focusing on increasing the procedural knowledge of verb phrases

Kazuko KASHIWAGI

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思春期前期学習者の formulaic sequences の
蓄積をとおした英語の文構造への気づき
－動詞フレーズへの手続き的知識の進捗に焦点をあてて－

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ABSTRACT

This study examines how to effectively introduce verbs and verb phrases and the early adolescent learner's exemplar-based learning, in which the learner is immersed in formulaic chunks and attempts to use them in social interactive contexts. The usage-based model (UBM) (Bybee, 1995; Tomasello,1998) emphasizes that language is learned from the participatory experience of processing an input and then producing language by imitating and repeating the multi-word units provided by the caregivers of the learner (such as parents or teachers). The process is called formulaic sequence (FS) such as form-meaning connections (FMCs) and the proceduralization of these connections. Leaners may have many opportunities to analyze the chunks of language and their linguistic patterns to form the schema formation of verbs while storing exemplars of these schemas during interactions. This categorization and analogy-forming of an input might determine the degree of productivity of language construction and facilitate the learner's second language (English) development, especially in the case of the program called *English Education* in Japan that links elementary school *English Activities* with introductory English lessons in junior high school.

Therefore, the current research embraces a theoretical framework of exemplar-based learning and formulaic sequences, focusing on form (FonF) and noticing linguistic

patterns, along with analyzing the effectiveness of the frequency of input in which learners are immersed. Based on the rationales, the main purpose of the research is to investigate the effectiveness of the UBM focusing on FS that the early adolescent learners accumulated in EFL learning taking their gradual change of way of learning in consideration. The procedures used for finding linguistic patterns might help the learners encounter the new language's properties in a meaningful context, which differs from the rule-based rote learning style commonly used. The current study might indicate that FS enables the learners to acquire the foreign language not only by relying on the rules, but also by discovering categorical patterns.

However, most of UBM research have not focused on the EFL learners (ages 9-14) even though the learning process *instance to rule* might be essential for the age range. Two possible reason could be as follows: 1) the EFL classrooms are considered to be at a place the outcomes of scientific research of UBM being in progress doesn't reach, 2) the period of ages lies in hiding in the introductory learning in both public elementary and junior high schools in which many of teachers are concerned with formalities such as grammar-translation method. Regarding the link between elementary school *English Education* and junior high school, the current research focused on fifth and sixth graders (ages 11–12, where, here, we define them as children) who accumulated exemplars as

formulaic chunks by imitating and repeating them. From this exemplar-based learning that is based on the UBM, the present study analyzes how children and students successfully establish the FMCs in verb phrases. Verbs and verb phrases may play an important role in language communication. In his L1 verb acquisition research for the UBM, Tomasello (2003) stated that children learn verbs item by item in word units. Tomasello's (2003) later research investigated and analyzed how specific examples that children use in an imitative way lead to language construction. Given that children's cognitive skills for acquiring verbs is fertile, the item-by-item schema formation of verbs (e.g., get *X*, throw *X*) and procedularization in this schema formation process produce abstract constructions across new language patterns that can be used in the next processing stage. Continuously, the present research also focused on first and second graders in junior high school (ages 13–14, where, here, we define them as the students), have listened to and used language chunking in communicative language teaching before starting English lessons in junior high school. The research on the subsequent period (ages 13–14) investigated how successfully the students were able to establish FMCs and find language patterns in verb phrases (e.g., I am throwing *X*; *X* is cooked by *Y*) from the sounds they heard. The data obtained at the junior high school level were collected without instructing an explicit grammar explanation beforehand.

In Chapter 1, we discuss the theory of exemplar-based learning and predict how it would relate to the EFL classroom in Japan. In Chapter 2, we introduce the concept of FMCs in exemplar-based learning of verb phrases based on mother language acquisition (Tomasello, 2003) and discuss how we would be able to apply the item-by-item learning process to learning verb–object combinations (V-O combination). We also define the important role that FonF has on early adolescent learners and their ability to notice language patterns. As far as how well the learners accumulated exemplars in an interactive context, the approach of *instant to rule* rather than *rule to instance* might have a great effect on elevating the students' procedural knowledge. This was tested by conducting several experiments for each age group and among the various age groups in this study. In Chapter 3, we refer to the essential roles of verb construction on language learning. Children's verb acquisition in L1 and how the theory could be applied for L2 learning in the classroom are analyzed. The process of acquiring the verb phrases and formulating constructions of these phrases are discussed in the following order: 1) imitating whole constructions, 2) formulating slots in the constructions, and 3) categorization of patterns.

From Chapters 4 to 11, we propose the instructional approach of formulaic sequences, such as "*instance to rule*," by providing exemplars with lexical richness and

meaningful context in an EFL classroom. Several experiments were conducted for each age group and among the various age groups to prove the effectiveness of a FS. As for observing the early adolescent learners' FMCs and proceduralization of it, respectively, the following representative experiments were conducted.

First, some experiments using elementary school English lessons were conducted. In Chapter 4, we investigated the possibility of the children being exposed to the input frequency of verb phrases by using "*English Notebook* 1 and 2" (2008a), which is distributed to all elementary schools by the Ministry of Education and Culture, Sports, Science and Technology Japan (MEXT). To what extent the children might encounter the verbs and verb phrases during fifth and sixth grades, per the descriptions of each lesson unit, including teachers' input and classifying the verbs that are frequently used into "basic verbs 50," is analyzed in this study. The study revealed that some verbs were frequently used and ranked higher (such as like, say, make, play, and want), as well as in language corpora; however, some verbs were indispensable for conveying messages while others were not. The research also revealed the scarcity of verb variations in the teaching materials. This suggests that the teachers' structured input relating to the children's everyday life is far more expected to compensate for it. We also proposed the way of conducting the lessons to have the children find language patterns (such as take

X, get *X*, give *XY*) while they are immersed in the meaningful context. In Chapter 5, because of the insufficiency of verb phrases, we developed *ATM-V* (audio-visual teaching materials of verb phrases) to help children understand the verb phrases, which might also serve as a tool for evaluating the children's FMCs. The screen shots from *ATM-V* were also made for the succeeding listening tests. We conducted the experiment by teaching the EFL children the verb phrases and then giving a pre-test and post-test design to two groups, where one used the *ATM-V* tool and the others did not (age 12, *EX* group, *N*=55; *Non-EX* group, *N*=56). We found that not only did the *EX* group (teachers' input gestures being driven by the use *ATM-V*) but also the *Non-EX* group (teacher's input-driven gesture) showed the successful use of the FMCs of verb phrases (such as smell *X*); however, it was more difficult for the *Non-EX* group to establish the FMCs of an abstract verb phrase (need *X*). This indicates that successfully using the FMCs of abstract verbs might need a certain trigger that considers the input factors (perceptual salience). In Chapter 6, we classified the verb phrases by using the children's word familiarity; here, we selected seven or eight categories of verb phrases as the target (such as "drink juice": the easiest one; "give a flower for": the most difficult one). We also conducted the experiment by teaching verb phrases on the topic of "My busy day" and used a pre-post-test design with one group (age 11, *Elementary School A*, *N*=72,

experienced 25 hours of English lessons). In the experiment, the children had just been exposed to English and thus had a small amount of input. As a result, they were successful in forming the FMCs for the easier verb phrases categories but not for the difficult ones. In addition, the discourse analysis of the imitative output in *Elementary School A* demonstrated that very few single words were detected in the children's responses. In contrast, in chapter 7, we conducted the same lesson in *Elementary School B* (ages from 8 to 12; experienced 10 to 200 hours of *English Activities*) where children had been exposed to English with a considerable amount of input. At the receptive level, it was observed how successfully children noticed FMCs of verb phrases. At the productive level, the output reproduced by children just after listening to the talk of assistant language teacher (ALT), which included verb phrases, were analyzed. The experiment was conducted by using a scale of degrees (Ⅰ-Ⅲ) of verb phrases, which gauged the children's level of word familiarity. The fourth graders, in particular, retained the FMCs of difficult abstract verb phrases in degree Ⅲ, which is the most difficult category (e.g., need an umbrella, give a flower to). In Chapter 8, we discussed the difference between *Elementary School A* and *Elementary School B* for 11-year-old 5th graders and evaluated to what degree the duration of learning (correlating to the amount of input that the children absorbed) could influence FMCs of verb phrases. The

comparison led us to discern how FMCs vary in degree depending on input factors, such as perceptual salience, and how they were affected by the extent to which the children had accumulated the FS in exemplar-based learning. In Chapter 9, we conducted a comparative research to observe the children's establishment of FMCs on verb phrases (e.g., give *X* to *Y* and give *Y X*: give *XY*) by gaining type frequency adding to token frequency. We used structured input as one of form-focused instructions. A comparison between A (FonF-based token and type enhancement: *FBE*) and B (Story-based token and type enhancement: *SBE*) for 11-year-old 5th graders is presented. There were differences in whether the teacher changes a part of a verb phrase or not to have become children aware of language patterns. As the results, *FBE* showed significantly higher scores in establishing the FMCs regarding verb phrases. It is proved that children form the slots (*X* to *Y* and *YX*) in or after by watching a phenomenon (someone hands *X* to *Y*) through the story and grasp the meaning of the verb phrases (give *XY*) which represents to achieve the movement of possessor (Goldberg, 1992). It can be explained that they came to have the prototype (e.g., I like *X*) in view of its portability and creativity (Eskildesen, 2008). The prototype may play the role of a marker, but the schema formations "--- the ball " or "throw ---" may take the role of a slot creator, which predict what type of word will be placed in the blank. Here, then, there is the possibility of

shifting to abstract constructions across language patterns in the EFL classroom. We believe that it could be a firm foundation for shifting to an abstract schema at the next stage. However, it needs to be discussed how the positive outcome could be passed onto the subsequent learning stage (ages 13-14).

Second, in Chapter 10, we observed the exemplar-based learning and how the students (age 13) were continuously able to establish the FMCs from the sounds they hear and schematize the language patterns. We also analyzed whether the accumulation of FS influenced on the students' grammatical sensitivity regarding the English word order. Even young EFL learners who have not yet learned L2 grammar will notice language patterns if, when retrieving exemplars (item-based patterns), they succeed in establishing FMCs. Item-based patterns serve as the basis for creative constructions. Although learners are implicitly sensitive to the frequency of the occurrence of constructions, item-based patterns are largely overlooked and are not retained. Because of the gap between elementary and secondary schools, students believe there is a difference between item-based patterns and the process of learning grammar. This phenomenon extends to EFL classroom. This study investigated the extent to which Japanese students who had completed 150 hours of English lessons (age 13, N=95) in *Junior High School K* (one group, with a pre-test and post-test design) noticed linguistic

patterns using a sound grammaticality judgement test (S-GJTs). The students had been instructed using implicit FonF using the teachers' input and sound-dictogloss (S-dictogloss) in groups. Targeting the present progressive form *-ing* as the FS, the teacher used three treatments: (a) recall of chunking, (b) structured input and S-dictogloss, and (c) a 10-minute inductive explication of grammar in L1. The results revealed significant differences between pre- and post-tests for the awkwardness of word order (31% < 59%) and omission of the morphemes *-ing* (61% < 74%). Overall, the students who had received the instructional medium exhibited grammatical sensitivity to the FS. Furthermore, in Chapter 11, we discussed another experiment with the junior school that was conducted in a comparative way using FonF instruction at the second grade (age 14) in *Junior High School S.* The *FS* group, in which the students had been instructed using implicit FonF using teachers' input and S-dictogloss in groups, and the *Non-FS* group, in which the students had been instructed using explicit grammar instructions, both practiced the passive form such as "*X* is cooked by *Y*" focusing on the morphological structures *-ed* as FS. The major difference between the groups is that the former's instruction was *instance to rule* using FS while the latter's instruction was *rule to instance* using the presentation, practice, and production (PPP) method. *FS* group demonstrated a higher grammatical sensitivity and better development of writing compared with the *Non-FS*

group. The study proved that the role of FS and *instance to rule* appears to have raised the students' procedural knowledge.

Summarizing the experiments in both elementary schools and junior high schools, we can conclude that the early adolescent learners' exemplar-based learning facilitates finding the linguistic patterns of verb phrases and increases their procedural knowledge, which is considered to be a fundamental skill needed to learn a new language in a meaningful way. As we expected, the FS helps the learners acquire the language not only by relying on the grammatical rules, but also by relying on categorical patterns. Token frequency combined with type frequency through a structured input triggered the learners' noticing. It is premised that they might be able to schematize a structure that would remain grammatically advanced until the grammar catches up (Myles, 2004; Myles & Cordier, 2017) and to be oriented toward acquiring grammatical sensitivity.

Based on the evidence of the research, it can be concluded that language learning is *instance to rule* rather than *rule to instance* among early adolescent learners. Although the importance of the cognitive process of acquiring procedural knowledge while the learners are listening to and using the formulaic chunks has been dismissed by language teachers, the UBM may produce a great impact on EFL learning, helping leaners learn items and accumulate the ready-made exemplars accompanying the

process of abstraction and generalization.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

Introduction

1.1 Focus of Inquiry

In 2008, English education for Japanese children witnessed the introduction of a program called, *Elementary School Foreign Language Activities* in *the Former Course of Study* (we define it as *2008 Course of Study*). This program is referred to as *English Activities* in this study, which aimed to improve the quality of foreign language (primarily English) learning education for children 11 to 12 years of age. According to the Japanese Ministry of Education and Culture, Sports, Science, and Technology (MEXT), the program considered the fostering of a positive attitude in these children toward communication and a deep understanding of language and culture. These aims were achieved by introducing interactive language experience (MEXT, 2008, p. 9). By being exposed to spoken English words and expressions through such interactive language experience, the children were exposed to actual language forms in their classes.

MEXT explained the reason for the introduction as follows: "The introduction of *English Activities* to elementary school [curriculum was] intended as a measure to take to overcome the limitations of the current English education in Japan. [Before 2008, the] standard English education curriculum in Japanese schools […] started in the first year of junior high school when the students [were] approximately 13 years of age […]. The system attempted to teach the four major language skills of listening, speaking, reading, and writing in English simultaneously, and its effectiveness has recently been brought up for discussion." (MEXT, 2008a, p.7). Under these circumstances, it was considered that the students who had been exposed to English learning were overwhelmed when forced to develop too many skills at once. This finding drew critical debates over how new English-learning activities should be implemented to develop the students' practical communicative abilities in understanding and expressing themselves in English (MEXT, 2002). The critical debates had been kept and emphasized in the instruction of *English Activities.* MEXT claimed that it was important for children to have a basic English foundation prior to their junior and high school years (MEXT, 2008a, pp.7-8). Once the foundation of English learning was emphasized at the elementary level, it was time to make improvements in the quality of English education at the later stages of the junior and senior high school levels. As such, "a smooth transition from English-learning

activities in elementary school to advanced (and improved) ones in junior and senior high school" (MEXT, 2008a, pp. 7-8) was emphasized.

The primary focus of education reform regarding *English Activities* indicated the following points: 1) to expose elementary school children to spoken English words and expressions so that they could familiarize themselves with the new language and 2) to engage the children in activities where they can be absorbed in basic English language learning prior to taking English-language classes in junior and senior high schools. By advocating these changes to the current public education system on a national level, we needed to discuss how children's language experience was linked with English-language classes at later stages.

After the year 2008, the reform of English education in both elementary and junior high schools had been discussed and the next teaching materials, *Hi, Friends! 1 and 2* were distributed to all elementary schools in Japan (MEXT, 2012). These were made under the supervision of 2008 Course of Study, however, the additional focus was to enhancing noticing the language structures in the story. Subsequently, in the year 2017, *New Course of Study* (MEXT, 2017a, 2017b) was proposed. We define it as *2017 New Course of Study.* In 2020, the projected number of mandatory English lessons at the elementary school will have more than quadrupled compared to the number of lessons

required by law in 2017 (e.g., grades 5 and 6: English lessons will increase from 35 to 75; grades 3 and 4: English lessons will increase from 0 to 35). On the other hand, the number of mandatory English lessons at junior high schools will keep the same number of hours.

The reform aimed at fostering a positive attitude toward communication and English language competences integrating five skills (the speaking skill was divided into interaction and presentation) from the elementary to the junior high school levels. English literacy, such as reading and writing at the beginning level, was also introduced to 3rd through 6th-grade level children gradually. The major change in the purpose of the lessons in both elementary and junior high schools can be summarized as follows (The author, trans., 2018), where (E) is for elementary school, (J) is for junior high school, and (E & J) is for both.

- The five skills in English are necessarily categorized (listening, reading, speaking in presentation, speaking in interaction, writing) (E & J).
- Listening needs to be instructed by using meaningful expressions with a sought-after amount, such as a story or a teacher talk (E & J).
- Noticing language structure needs to be elicited by providing auditory input at levels

corresponding to the degree of student proficiency (E & J).

・Speaking in interaction needs to be instructed as an improvised approach (speaking that does not rely on written text exclusively) (J).

・Speaking in presentation focuses on conveying the children's feelings or things in everyday life (E), and the students' thoughts or opinions on the issues of society (J).

・Writing using alphabet letters and copying the short sentences referring to the model sentences demonstrated (E).

・Writing about the students themselves regarding their hobbies and favorite things (J).

・Integrating five skills: listening to the topics and information of the society, reading the essays and articles, writing their thoughts and reasons, and presenting them to each other (J), and speaking in interaction (J).

・Writing emails and exchanging them using PC (J).

・Words and vocabulary need to be instructed in collocation (E & J).

・Teaching verbs/ verb phrases in the context of reading, writing, and listening (E & J).

・With the increase of target words, the difference between receptive words and productive words needs consideration but not by memorizing every word (J), and teachers should take over the chunked language students learned in elementary school.

In addition, the explicit grammar teaching apart from the context is not able to be applied for the actual language use (E & J).

The underlined parts shown above seem closely bound with the forte of the Usage-based Model (UBM) which is described later on. Noticing language structure from the auditory input, using collocation and improvised output might be derived from the concept of UBM in which the learners use chunked language imitatively and interactively while processing the language patterns. The process enables them to improvise the output performance reasonably.

In this study, we consider what language experience children are able to have based on the focus of *English Activities* (referred to as *English lessons* subsequently as a compulsory subject to 2020) mentioned above to realize a smooth transition. First, it can be predicted that children who learn English through verbal input in *English Activities* are exposed to many exemplars and are given the opportunity to imitate and repeat what they hear and connect the meaning with the sounds they hear in English (e.g., draw a square on it). This process is termed exemplar-based learning (Skehan, 1998, p.54). Second, in this process, children may have opportunities to connect the meaning with the English sounds (form: minimal word units, e.g., draw a square), which is defined

as form-meaning connections (FMCs). In this cognitive process, it is not predicted that children only repeat and imitate the exemplars without guessing the meaning (researched in Chapter 2). Therefore, we will examine in the next chapter how exemplar-based learning is proceeding, how it works, and how the procedure benefits English as a Foreign Language (EFL) learning in Japan as a potential foundation for communication ability.

To take a closer look at children's exemplar-based learning and how much of and to what extent FMCs can be established concerning the word-units, we focused on verb phrases as the target for research; in particular, verb phrases which have verb-object combinations (e.g., *Draw a square,* I *eat lunch.* Or in a story; The mouse *pulls the cat.*). As VanPatten (2007) argued, language acquisition is a result of internal processes acting on meaning-bearing input where input processing is the first stage in the acquisition process. Therefore, to observe children's internal processes when they take in the teacher's input, we will focus on how children connect the meaning with forms (verb phrases) and their processes of noticing and establishing FMCs.

The research consists of data obtained on FMCs to verbs during *English Activities* with variable factors present (input frequency, perceptual salience, age difference, output performance depending on the length of learning, and others). The data was collected

and analyzed from a perspective of the cognitive learning process, and we have presented three reasons why we chose to focus on verb phrases in this study.

(1) The abstractness of verbs can actually make it possible to give children significant opportunities for cognitive learning, such as guessing the meaning and categorizing the sounds in which they may find language patterns by accumulating exemplar knowledge. Some verbs have definite meanings and are readily instructed through Total Physical Response: TPR (Asher, 1965) or gestures and others have abstract meanings and are difficult to express through TPR or gestures.

(2) Verbs form the core of grammatical sentences, and many possess polysemous definitions. For example, from the cognitive linguistic perspective, Yoshimura mentions that the word *run* indicates the prototype meaning "to move at a speed faster than walking," but the meaning extends when it is used in a different context, such as in "the river *runs* clearly" (Yoshimura, 2004, pp.96-99).

(3) Verbs are used across the patterns so that children will have opportunities to find patterns both in similar word-units and various ones. Imai mentions that verbs extend to categories of relations; for instance, an action can be done with many different objects, such as *throw* a ball, a Frisbee, a stone, a disk, or almost anything

we can lift up with our hands（Imai, 2008, p.981）. According to Tomasello's research on mother language verb acquisition, "children 9 to 12 months of age demonstrate the ability of pattern-finding and pre-linguistic categorization, and the ability to learn the intentional actions of others imitatively and follow the attention and gesturing of other persons [・・・]. Children do two things: First, they extract from utterances and expressions such small things as words, morphemes, and phrases […]. Second, they view patterns across utterances or parts of utterances with similar structures and functions simultaneously" (Tomasello, 2003, p.41). This cognitive process during first language (L1) acquisition is described by Tomasello as item-based construction.

In summary, aiming at observing children's FMCs on verb phrases in *English Activities* will bring us an appreciation of their exemplar-based learning and how they connect meaning with English sounds regarding the process of finding language patterns.

The research also consists of data on students noticing the language patterns regarding morphological patterns in junior high school such as the progressive (*-ing*), and passive (*-ed*) forms, in which the student' learning might occur based on *instance to rule*.

The data were collected and analyzed from a perspective of formulaic sequences (FS). As observation procedures, the sound-grammaticality judgment tests (S-GJTs) and the qualitative data on pre-post writing were used. We also observed how the students borrowed the chunks of language and verb phrases, or FS that they were exposed to, while writing their own feelings and thoughts.

1.2 Outline of the Dissertation

This thesis consists of twelve chapters. In Chapter 2, we will look more closely at the current standard of *English Activities* (called *English lessons* later on) in Japanese schools and examine the difference between a focus on meaning and one on form as well as the possibility of integrating a focus on form (FonF) with current *English Activities*. The role of FMCs to verb phrases and the importance of exemplar-based knowledge for second language (L2) acquisition is also discussed, and the influence of age difference on L2 is debated in discussing the recent second language acquisition (SLA) theory. Additionally, the features of cognitive learning in early adolescent learners, or 5th and 6th graders in elementary schools, could be a major concern in *English Activities,* since the lessons were introduced in 5th and 6th grade and not in early childhood (e.g., in 4th

grade or earlier). Bialystok (2002) and Brown (2007) point out that this age demonstrates a gradual change regarding the way of learning. Therefore, we explore the way we might apply the study of L1 language acquisition, which embraces exemplar-based learning, to the new *English activities* by considering learners' ages.

In Chapter 3, we summarized L1 verb acquisition as a rationale for this study and examined children's verb acquisition in L1 and how the theory could be applied to L2 learning in the classroom. The process of acquiring verb phrases and its formulating constructions were discussed in the following order: 1) imitating whole constructions, 2) formulating slots in constructions, and 3) categorizing patterns.

Based on the UBM approach theory, the study aimed at investigating the possibility of exemplar-based learning in EFL classrooms in Japan and clarified the effectiveness of accumulating FS in which L1 learners are able to schematize the chunks and find the linguistic patterns. The recent UBM researchers initiated the application of FS to EFL classroom instruction; however, very few research studies were conducted for the early adolescent learners. Therefore, throughout the series of the current study, we expected the early adolescent learners might be able to learn the new language both in exemplar-based and also in rule-based one in a dual mode. We also thought it might

help the learners prompt the initiative production while gaining procedural knowledge by retrieving FS in an authentic language use.

In chapter 4, we investigated the possibilities of the input frequency of verb phrases that the children might be exposed to using *English Notebooks* 1 and 2 (2008a, 2008b) distributed to all elementary schools by MEXT. We also studied to what extent the children might encounter the FS with verb phrases during 5th and 6th grade according to the descriptions of each lesson unit, including teachers' input, and classified the verbs frequently used into 50 basic verbs. The survey was also conducted based on input frequency, or token frequency and type frequency, and observing the oral instructions of the teachers and the responses imitatively from the children.

In chapter 5, we explained the development using *ATM-V* (audio-visual teaching materials of verb phrases) and looked at how *the ATM-V* affects the establishment of FMCs. We conducted the experiment of teaching verb phrases with pre- and post-test designs in two contrastive groups using the ICT tool in the EFL classroom (aged 12) and found that not only the *EX* group (teachers' input-gesture driven using *ATM-V*) but *Non-EX* group (teacher's input-gesture driven) revealed the successful FMCs for verb phrases (such as smell *X*). However, it was difficult for the *Non-EX* group to establish FMCs of an abstract verb phrase (need *X*). It indicated that successful FMCs of abstract verbs

might need a certain trigger considering the affection of input factors (perceptual salience) in the classroom.

In Chapter 6, we classified the verb phrases using the word familiarity for children and selected seven or eight categories of verb phrases as the target (such as drink juice: the easiest one; or give a flower for: the most difficult one). We conducted the experiment of teaching verb phrases on the topic of "My busy day" with a pre- and post-test design in one group in *Elementary School A* (age 11; experienced 25 hours of *English Activities*) where children have just been exposed to English and thus have a small amount of input. As a result, they were successful in FMCs regarding the easier verb phrase categories but not the difficult ones, and very few single words were detected in children's responses.

In contrast, in chapter 7, we conducted the same lesson in *Elementary School B* (ages from 8 to 12; experienced 10 to 200 hours of *English Activities*) where children had been exposed to English with a considerable amount of input. At the receptive level, it was observed how successfully children noticed FMCs for verb phrases. At the productive level, the output reproduced by children just after listening to the talk of assistant language teacher (ALT), which included verb phrases, were analyzed. The experiment was conducted by using a scale of degrees (Ⅰ～Ⅲ) of verb phrases, which gauged the children's level of word familiarity. The fourth graders, in particular, retained the FMCs

of difficult abstract verb phrases in degree Ⅲ, which is the most difficult category (e.g., need an umbrella, give a flower to).

In Chapter 8, we discussed the difference between *Elementary School A* and *Elementary School B* for 11-year-old 5th graders. We also evaluated to what degree the duration of learning (correlating to the amount of input that the children absorbed) could influence FMCs for verb phrases. The comparison led us to discern how FMCs vary in degree depending on input factors, such as perceptual salience, and how they were affected by the extent to which the children had accumulated the FS in exemplar-based learning.

In Chapter 9, we conducted a comparative research to observe the children's establishment of FMCs on verb phrases (e.g., give *X* to *Y* and give *Y X*: give *OO*) by gaining type frequency adding to token frequency. We used structured input as one of form-focused instructions. A comparison between A (FonF-based token and type enhancement: *FBE*) and B (story-based token and type enhancement: *SBE*) for 11-year-old 5th graders is presented. Both groups are instructed by using an original digital story, but there are differences in whether the teacher changes a part of a verb phrase or not to have become children aware of language patterns. It aims at identifying the extent which children's schema formation of verbs (e.g., give OO: double object construction)

might be prompted by the input salience and input frequency such as give OO, which is called argument structure and embraces the dative alternation. We hypothesize that the children may form the slots (*X* to *Y* and *YX*) in or after by watching a phenomenon (someone hands *X* to *Y*) through the story and grasp the meaning of the verb (give) which represents to achieve the movement of possessor (Goldberg, 1992). As the results of the experiment, the fact that *FBE* group showed higher scores of establishing FMCs for verb phrases revealed the possibility of schema formation of verbs in the EFL classroom.

In Chapter 10, we defined the FS approach for EFL classrooms, which includes grammar explanations in an inductive way, and conducted an experiment using FS and Focus on Form instruction in the *first grade (age 13) in Junior High School A* (one group; pre- and post-test design). The study investigated the extent to which Japanese students noticed linguistic patterns when using a grammatical judgment test. Targeting the present progressive form *-ing* as FS, the teacher used three treatments of *instance to rule*: (a) recall of chunking, (b) structured input and dictogloss, and (c) a ten-minute inductive explication of grammar in L1. The treatments identified the possibilities of students' finding language patterns of verbs and the extent which they easily grasp the morphological structure *-ing* from the exemplars they hear in the classroom with the view of their grammatical sensitivities to the awkwardness of word orders improve.

In Chapter 11, we used the FS approach and conducted an experiment in a comparative way using Focus on Form instruction in the second grade (age 14) in *Junior High School S* (between groups, pre- and post-test design). The major difference between the groups (*FS* group and *Non-FS* group) is the former's instruction is *instance to rule* using FS, and the latter's instruction is *rule to instance* using Presentation-Practice-Production (PPP). The result suggested that the *FS* group demonstrated a higher grammatical sensitivity not only to the language slots (*X* is --- *ed* by *Y*) but to the morphological structures *-ed*. Furthermore, a better development of writing as production was found in FS group. The study revealed that the role of FS and *instance to rule* appeared to raise students' procedural knowledge. It is estimated that the sum of procedures of FS may shepherd an individual's declarative knowledge later in L2 acquisition.

In chapter 12, we concluded that the early adolescent learners' exemplar-based learning, the process called formulaic sequence (FS), facilitates finding linguistic patterns of verb phrases and gaining their procedural knowledge, which is considered to be a fundamental ability of learning a new language in a meaningful context and not relying exclusively on grammar rules. The procedural knowledge was also acquired in this way, and we found that language learning is *instance to rule* rather than rule to

instance in the early adolescent learners based on clear evidence in the research. Furthermore, UBM might firmly have a great impact on EFL learning and be rather powerful where students initially learn items and accumulate the ready-made exemplars accompanying the process of abstraction and generalization. We also discussed the linkage between elementary school ages to junior high school ages in English learning by shifting from exemplar-based learning to category learning based on the evidence obtained in actual EFL classrooms studied for the dissertation.

Chapter 2

Children's English Learning Through Exemplar-Based Learning

2.1 Introduction

As mentioned in chapter 1, the primary purpose of *English Activities* is not to force language rules on children but instead having children exposed to active and meaningful language learning. MEXT (2008) enacted that *English Activities* would be made part of the standard education curriculum in grades 5 and 6 (age 11 and 12), encompassing 35 lessons per year. Some designated pilot schools have already introduced *English Activities* as a six-year program which children have undergone from age 7 to 12, in which 70 lessons per year have been given.

However, since *English Activities* have been introduced in Japan, we need to observe how children successfully listen to and understand English sound form depending on some variables such as, the way of teaching, the learners' ages, and the degree of children's understanding. Therefore, in this Chapter, we will respectively

consider three perspectives: 1) ascertaining suitable instructions for the EFL classroom, 2) considering children's age factor and their developmental learning stage, and (3) identifying the process of understanding of English sound form.

Two reasons are demonstrated why English sound form is emphasized according to *the 2008 Course of Study*. First, listening abilities should be encouraged prior to instructing four skills in Junior High School. Second, children's age and developmental stage should be taken in considerations. For instance, the *2008 Course of Study* mentions the following statement: "Considering children's flexible adaptability, we foster their listening ability by having them become familiarized with English auditory input and its basic expressions (MEXT, 2008a)." MEXT (2008a) also states the following: "The objectives of *English Activities* do not focus on understanding abstract concepts on sentence structures, pattern practice or recitation of dialogue to improve English skills but rather through interactive and more realistic environments (MEXT, 2008a)." However, it is not clearly mentioned in the *2008 Course of Study* on how children's learning process during the 5th and 6th grade can bring a fruitful result relating to the later stage. Furthermore, we should not prompt children to be interested in sentence structures, however, they may often operate their cognitive procedures to English sounds by finding patterns through a meaningful context or recitation of dialogue by nature as

human beings. Therefore, we should ascertain why the lessons are instructed mostly in English sound and how children grasp the meaning and the form from the verbal input (e.g., imitating the formulaic chunks, recitation in English, remembering the words, and so on) and what triggers them. By considering them we will have a certain orientation towards gaining children's basic communicative abilities relating to the later learning stage.

2.2 Effective Instructions in the EFL Classroom

2.2.1 Focus on Meaning and Focus on Form

Prior to considering an effective teaching way in the EFL classroom, we summarize the recent studies on focus on meaning and focus on form. In foreign language learning, the differences among three approaches (focus on form*s,* focus on meaning and focus on form (FonF)), are defined as follows:

In focus on form*s*, "the syllabus consists of inductively or deductively presented information about the L2" and "lexical, structural, notional-functional, and in practice to date, tropical and situational, and the synthetic methods" (Long & Robinson, 1998, p.16).

In other words, the grammatical objects are taught separately from meaningful context. The instruction may "largely ignore language learning process" (Long & Robinson, 1998, p.16). In focus on meaning, Long & Robinson argues that "learning an L2 incidentally (i.e., without intention or unconsciously) or implicitly (i.e. without awareness) in immersion programs, students' productive skills remain far from native-like, particularly with respect to grammatical competence." "Learning L2 implicitly" is equivalent to implicit learning stated by N. C. Ellis (1994, pp.2-3) as a contrastive term, explicit learning. (1) Implicit learning: a nonconscious and automatic abstraction of the structural nature of the material arrived at from experience of instances. (2)Explicit learning: conscious searching, building then testing of hypotheses; assimilating a rule following explicit instruction.

Compared to previous language-learning systems, Long and Robinson state that "FonF refers to how focal attentionness from exposure to comprehensible target language samples is sufficient for successful second or foreign language acquisition" (Long & Robinson, 1998, p.18). It can be said that the FonF is an instructional method that addresses connections among form, meaning and function.

Natural Approach（Krashen & Terril, 1983), is an example of content-based EFL instruction and immersion education that utilize focus on meaning. In *English Activities*,

focus on meaning holds an important position because it helps create implicit learning[1] from children. For their later learning period, this concept would be followed by the phenomenon of "language experience of instances" (N. C. Ellis, 1994, pp.2-3). However, it has been argued that focus on meaning has a possible drawback to promoting grammatical accuracy. Swain (1991) points out that focus on meaning "[often] consists of an occasional shift of attention to linguistic code features by the teachers and/or one or more learners triggered by perceived problems with comprehension or productions." In such cases where focus on meaning proves to be insufficient to trigger FMCs, FonF can prove to be a more feasible option utilizing meaningful input with linguistic features in a cognitive approach to learners' learning.

In contrast to focus on meaning, Schmidt claims that "communicative, meaning-focused instruction is essential, but not all language features can be acquired when learner's attention is focused exclusively on meaning."(Schmidt, 1995, p.3). Thus, FonF is identified by the concept of "noticing" (Schmidt, 1995) linguistic features through "modified input, identified as input flood, input enhancement, negotiation, recast,

[1] R.Ellis (2001) summarizes that explicit knowledge is equated with learners' oral written explanations of grammatical rules, while implicit knowledge is determined by examining the learner's use of the same grammatical features in some kind of performance.

dictogloss, consciousness raising (CR[2]) tasks, input processing, garden path and a variety of others" (Doughty & Williams, 1998, p.258).

2.2.2 Focus on Meaning and Focus on Form in *English Activities*

In *English Activities* many concrete scenarios are designed to interest children in the context of English more than on form. This type of instruction that does not focus on explicit grammar teaching. It can be viewed as meaning-focused. Children are exposed to the target language and they learn it through active imitation. According to the perspectives of UBM, it can be viewed as exemplar-based learning[3] (Skehan, 1998, Tomasello, 2003),

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[2] CR is considered as a potential facilitator for the acquisition of linguistic competence for the achievement of specific communicative objectives, or with the achievement of fluency (Rutherford & Smith,1985). CR is to develop explicit knowledge of grammar, further, it focuses on concept-forming in orientation.

[3] Skehan(1998, p.53) defines that "exemplars, learning is interpreted as the accumulations of large numbers of formulaic of chunks (also usually, in artificial languages, specific repeated sequence of letters－Schmidt, 1995). These corresponds to the formulaic units." This is rather than relying on analysis and rule. He contrasts formulaic exemplar-based with rule-based analytic. Schmidt (1995, p.32) mentions that "the exemplar-based learning contains implicit learning incidentally and involves

We will now take a closer look into whether the focus on meaning can integrate with the theory of FonF in *English Activities*. Particularly, based on the supportive texts, *English Notebook 1 and 2 and English Notebook Guide 1 and 2* distributed by MEXT to all elementary schools in Japan. Because the topic and target sentences instructed in the EFL classroom are standardized by these supporting texts.

Therefore, based on these tests, we examine how children's learning English will precede.

First, we examine Lesson 3 of *English Notebook 2* (given as below E2-L7). The lesson, (titled "What time do you get up?"), aims to have children attempt to express their own day in English, such as eating lunch, playing sports or studying at school. It includes following stages: 1) understanding different cultures by talking about subjects from other countries, 2) familiarization with words and expressions, 3) immersion in common expressions that the teacher will repeat in various situations, 4) providing opportunities to practice newly-learned expressions through imitation or through pair work and activities, and 5) expressing themselves using simple combinations of learned

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unconscious induction resulting in the establishment of abstract rules and representations. Learners do become sensitive to regularities in the input. Suggesting that the underlying grammar is internalized in some sense."

expressions. Through these activities, children will be focusing on the meanings while at the same time unconsciously learning English forms through verbal exercises (e.g., I eat lunch, I eat dinner. I play soccer. Do you play baseball?). Through such activities, when "I eat *lunch*" is changed with "I eat *dinner*" by the teacher both naturally and intentionally, children can encounter an opportunity to find the linguistic patterns such as "I eat *X*". This is a concept that may be possible to be relate well with FonF instruction.

Second, another example is shown in E2-L8, (titled "Big Turnip"), where children repeat the rhythmical lines by replacing certain words (e.g., Grandpa pulls the turnip. Grandma pulls grandpa.). This formulaic speech, as stated by Fillmore (1979), does not focus on words but rather "forms," including their structures. Personal pronouns and objectives are combined with verbs (e.g., pull and others) before and after them. Some argue that children may remember these as formulaic speech, in which SVOs are framed in unanalyzed formulaic sequence. However, when "*Grandpa* pulls the *turnip*." in changed with "*Grandma* pulls *grandpa*." , children can again encounter an opportunity to notice linguistic features in the frame such as "*X* pulls (the) *Y*". Interchanging words within the frame may make it possible for children to find language patterns.

Third, we consistently focus on verb phrases as the exemplars as we indicate in Chapter 1. When children hear and use the whole sentences, they utilize simple verb-

object combinations (V-O combinations) similar to the way they learned their native language in their early years through oral communication with their parents (Explained in Chapter 3). Examples such as "I eat lunch" and "Grandpa pulls the turnip" as formulaic sequences but yet children may not find any patterns such as "I eat *X*" and "*X* pulls *Y*" at the beginning stage. However, there may be many chances to act of repeating and imitating formulaic chunks in the context. If children once understand the words such as "Grandpa" and "Grandma", "lunch" and "dinner", then they will pay attention to the reverse slots such as " ---pulls---." or "I eat---." and it makes it easier for children to develop FMCs of verbs. The role of repeating and imitating the target language for learners is suggested by Yamaoka(2006) as following.

> Imitation is not a parrot-like response to a model but an active attempt on the part of learners to experience the process of linguistic realization of specific meanings once more. Furthermore, repetition is abstracting particular form-meaning connections. Both linguistic acts are viewed in that the former corresponds to the role of type frequency in UBM while the latter corresponds to the role of token frequency in UBM (Yamaoka, 2006, p.5).

As explained above, it can be said that the act of imitating and repeating does not mean skill-based learning nor pattern practice but cognitive learning where children can develop FMCs through the act of imitating and repeating, in particular, negotiation of meaning occurs. Yamaoka points out that "pattern practice itself is cognitive rather than mechanical so that it can be called 'cognitive pattern practice' with the new perspectives of identification of specific form-meaning connections, entrenchment of these connections, and their generalization" (Yamaoka, 2006, p.8).

2.2.3 Structured Input

We consider the role of structured input [4] (VanPatten, 1996; VanPatten & Cadierno) from the teacher for having learners gain awareness of linguistic forms, which is one of the FonF instruction. As we see above, *English Activities* provide the exemplars

[4] Structured input (VanPatten & Cadierno, 1993) is where the students are immersed in abundant input provided by the teacher and where the students then attempt to establish FMCs. The input needs to involve target structures corresponding to the context. If the students develop input processing and intake, the target structures or linguistic patterns may be noticed by the learners while they hearing these patterns and structures.

repeatedly and interchanging words within the frames so that the process makes it possible for children to find language patterns.

For instance, the teachers intentionally use the target sentences with increased times more than usual when they want to have children hear the teacher talk. This is termed "input flooding" (Wong, 2005), a mode of structured input from the teacher in which the learners are immersed in abundant input and they attempt to develop FMCs. Gass (1997) also points out that "the frequency of a particular target structure can have an impact on 'noticing' [forms]." Wong (2005) points out that the target objectives are grasped nearly twice as often when teachers intentionally set forth the objectives (e.g., via "input flooding"). In one example instruction there were 65 objectives, whereas old instruction methods attempted only 33. Ellis also mentions that the instruction with structured input draws the learners' attention to FMCs and it is far more effective than traditional speaking practice for language acquisition (R. Ellis, 2008). Structured input can be used without preventing "focus on meaning". Lightbown (1998) mentions as follows.

> FonF is not an alternative instruction to "focus on meaning". When the form in focus (e.g., the subject and the object or missing pronouns) is an

important carrier of the meaning in focus (who did what to whom), learners do benefit from the dual focus on forms and meaning (Lightbown, 1998, p.192).

In other words, the successful focus on meaning may be a sufficient condition for FonF. In *English Activities*, replacing the words in rhythmical repeating (e.g. I eat *X*, *X* pulls *Y*) are utilized by the teacher and children in activities. When the teacher demonstrates paper crafting or drawing pictures in the classroom, they make use of V-O combinations (e.g. "*Fold the paper* up to this line", "*Draw a square* on it", etc.). Children also engage in "small talk" on natural topics with gestures including target objectives (e.g., "I *see a beautiful flower* in the pot", I *see some bugs on* it"). These cases represent examples of structured input without preventing focus on meaning. Structured input, in this sense, can be realized by the teachers' talk throughout teaching plans that occurred in the mind of teachers with this view.

2.2.4 The curriculum in *English Activities* and Focus on Form

As we summarized above, FonF instruction can be naturally integrated to focus on meaning and structured input used in a storytelling or the teachers input intentionally. More precisely, we can conclude that FonF draws the learners' attention to FMCs and it is far more effective than traditional speaking practice for language acquisition. However, in *English Activities* where children exclusively pay attentions to the context, structured input belongs to instantaneous context, therefore, FonF also needs to be made part of a new standard curriculum. Doughty (1998) indicates "some interconnected sequence of tasks and techniques that are implemented throughout the curriculum" (p.261). The sequence should be considered depending on children's age, language proficiency, frequency in the input, relation to L1 form, and other factors. According to Harley(1998), whose studies focus on elementary school children, "material designed to be interesting and visually attractive, contain a certain amount of procedural familiarization, and offer sheer variety of tasks can trigger children to pay more attention to linguistic features with meaning" (p.170). As Gass stated above, "the frequency of a particular target structure can have an impact on 'noticing' [forms]." Thus, we need to plan not only short-term lesson procedures but also successive long-term curriculum to gain the frequency of input through the FonF approach by considering children's age, their proficiency and frequency of input and relation to L1 form and so on.

2.2.5 Noticing of Language Patterns by Children

Schmidt(1990) suggests that target language forms will not be acquired unless they are noticed, and it is a prime requirement for language learning to occur at any age and children may learn grammar unconsciously as a by-product of trying to communicate and notice such information even when the task does not require such "noticing" (pp. 144-145). Harley(1998) analyzes language activities with FonF for 7 and 8 year-olds and concludes that children at that age are not yet prepared for analytical learning but that it is an optimal time for FonF learning when they hear the linguistic features frequently. This suggests that the frequency of input with FonF allows children to discover linguistic patterns more effectively. Thus, we defined that noticing is to find language patterns unconsciously as a by-product of focus on meaning.

Given that there are presently few studies of children's noticing of language patterns among them aged 11 and 12 using *English Activities*, it will be necessary for more research to be conducted on how effectively children notice linguistic features and can be successful in developing FMCs at various ages.

2.2.6 Conclusion

We conclude that integrating FonF with focus on meaning in *English Activities* is necessary in order to have children notice linguistic features and find language patterns. The linguistic features do not constitute language rules but rather language patterns found by children when they are exposed to structured input. According to the previous rationale, a successful focus on meaning entails FonF. Thus the language-learning classroom needs to provide children with the environment where children can be exposed to the meaningful contexts and try to communicate with others and establish FMCs by imitating and repeating formulaic sequences. This procedure itself represents exemplar-based learning.

In the preceding research, we define the time when children's finding patterns can be promoted. The definition is:

(1) We can predict that children establish FMCs to verb phrases within the frame one-to-one (e.g., "Grandpa *pulls the turnip*." and "Grandma *pulls grandpa*." , "I *eat lunch*" and "I *eat dinner*")

(2) We can predict that children encounter an opportunity to notice linguistic features within the frame such as "I eat *X*" and "*X* pulls (the) *Y*".

(3) We can predict that once children and understand the words such as "Granpa" and "Granma", "lunch" and "dinner", then they will pay attention to the reverse slots such as " ---pulls---." "I eat---.", which is leading to the schematization such as "*X* pulls (the) *Y*." and "I eat *X*."

Thus, if children can establish FMCs successfully on both frames "I eat *dinner*.", "I eat *X*." and "*Granpa* pulls *the turnip*" , "*X* pulls *Y*" (*X* and *Y* can be replaced with alternative words), it will be identified that children's finding patterns is obviously proved. As pointed out by Schmidt above, noticing the patterns which induces "implicit knowledge" through learner's use of the same grammatical features in some kinds of performance (stated as exemplar-based learning). The procedures itself enables children to experience unconscious induction that may be essential jump start of L2 learning. From the theoretical framework, the prediction from (1) to (3) needs to be observed by collecting the evidence in the practical research of *English Activities.*

2.3 Age Factor and Individual Differences

2.3.1 Pre-pubescent Ages

In the previous section, we took a look at research conducted on the possibility of integrating focus on meaning with FonF. The research that we need to investigate focuses children aged between 9 and 14 years old. Before proceeding further, on the basis of the research on age factor, we should demonstrate whether children within this age range give an influence on children's pattern finding and noticing the linguistic features. Therefore, first, we will summarize it with two perspectives: 1) a general point of view on age factor, and 2)the possibility of applying FonF to this age range.

First, we will summarize a general point of view on age factor in terms of the age groups mentioned in a SLA research (Brown, 2007). Brown presents children's age groups as follows: early childhood (ages 2-7), middle childhood (ages 7-11), pre-pubescent (ages 11-12), and early adolescence (age 13 and older). Later, we will proceed to examine a study on EFL learning for children in the pre-pubescent ages of 11-12 (Patkowski,1982; Berk,2003; Singleton & Ryan, 2004).

Lenneberg (1967) states that after, puberty, the ability for self-organization and adjustment to the physiological demands of verbal behavior quickly declines. This is

called the Critical Period Hypothesis (CPH). Newport (1990) investigates the relationship between age of arrival of the United States and total score correctness on the test of English after puberty (around age 12). According to a *Figure.2* shown in Newport's research (p.19), we are able to observe a strong relationship between age of arrival and performance a grammatical judgement test elaborated by the author. The performance was linearly related to age of arrival. However, in recent years, there are several studies that criticize the validity to the CPH due to ambiguous reasoning and insufficient evidence (Birdsong, 2006; Singleton, 2000; Scovel, 2000; Bialystok and Hakuta, 1999). That is, it is possible to learn a second language and to achieve native or near-native levels even in adulthood. Scovel (1988), for example, argues that the critical period holds true in the case of children being able to acquire the same spoken accent as native speakers when learning a foreign language, but not for attaining vocabulary or sentence coherence.

Overall, the available evidence speaks against CPH. There is no clear point beyond which L2 learners will fail to achieve native speaker proficiency. Rather there is "a gradual decline in the ability to learn L2 with age starting from early childhood" (R. Ellis, 2008, p.26). In summary, "It has not been shown either that there is a fundamental

difference between child and adult language learning mechanisms" (Singleton & Ryan, 2004, pp. 115-116).

On the other hand, the age of pre-pubescent (roughly age 11) has been researched not only from the viewpoint of L2 learning mechanisms but from the concept of influence of L2 cognitive learning such as individual difference related to cognitive abilities, motivations and anxiety towards learning and various other angles as well. Regarding cognitive abilities, such as intelligence, working memory, language aptitude (R. Ellis, 2008), we need to consider children's individual difference towards language learning rather than the age factor. Cummins (1983) attributes the differences regarding age factors to BICS （Basic Interpersonal Communicative Skills） and CALP （Cognitive/Academic Language Proficiency). The former refers to basic language skills children use to communicate with others. The latter refers to skills children need to become cognitively proficient in a language. On the other hand, Dekeyser (2000) claims that age factors give rise to some differences in the degree of language skills acquisition when they study socially (1), among L2 peers (2), and cognitively (3) . Bialystok (2002) also claims that learning mechanism associated with certain ages cause only somewhat gradual changes. Although CPH has little evidence that age plays a major role in EFL learning, with the view of learner's cognitive learning we need to have a careful look on

pre-pubescent age. The Table 1 below demonstrates these gradual cognitive changes that take place in L2 learning as children grow older. In Table 2-1, we sketched the overall concept of "cognitive development by age" based on Brown's research (Brown, 2007, pp.4-83)

Table 2-1

Cognitive Development by Age

Middle childhood7–10years old	Pre-pubescent11–12years old	Early adolescence13 and older
Able to pick up comprehensible input	Understand that they do not understand	
Good at mimicking	Not good at mimicking unless they understand the meanings	
Tolerant of failures	Analytical, and intolerant of contradictions and errors	
Study in general and spontaneously	Study systematically and thoughtfully	
Influence from a peer group is great	Influence from a peer group is much greater	

In the above studies we should view them progressing through stages, we recognize a transition period concerning the cognitive development around pre-pubescent 11–12 years old. We can surmise that there is no fundamental difference concerning learning mechanism, but the way of learning of each child due to his/her

cognitive ability varies depending on individuality and ages (See Table 2-1). For instance, the influence from a peer, tolerance of failure, picking up comprehensible input and good mimicking seem to be featured in before the age 11. Brown (2007) points out that there are many studies that detail differences between learning a foreign language as a child versus learning as an adult, but that there is a noticeable lack of studies that detail differences in learning a foreign language between age ranges *within* childhood (for example, between ages 6-8 and 9-11). That is, regarding our research targeted on ages 9-14 (from third graders of elementary school to second graders of junior high school), their cognitive development by age may give a considerable influence and it is considered to be a gradual change approximately age 11.

2.3.2 Individual Differences

Whereas Dörnyeis (2005) and A. Yamamoto (2005) argue that it is also important to take into consideration individual learning styles. Many researchers argue that the importance of a wide range of individual differences (IDs), such as intelligence, aptitude, strategies, motivation, anxiety, risk taking, introversion / extroversion /cognitive style, and ego permeability (Sawyer and Ranta, 2001). In particular, on this study through

FonF learners language analytic ability (e.g., grammatical sensitivity and induction language learning ability and phonological sensitivity that is chunking and segmentation) are key components of language learning aptitude. Ranta (1998) also studies grade 6 learners participating in an English as a second language (ESL) program, and suggest that learners with higher levels of grammatical sensitivity would be at an advantage in some aspects of L2 learning. However, it is said that IDs, overall, need more abundant evidence. Sawyer and Ranta (2001) and Schmidt (2001) also suggest that the ability to notice what is input and language analytic ability, and the ability to retrieve chunks, are factors of foreign language aptitude. Therefore, some difference in the degree of language skill acquisition is seen among learners from the very beginning is predictable.

2.3.3. Applying Focus on Form to the Age Range in *English Activities*

Applying FonF to this age range, we take a look at research on FonF. Wright (1996) states that the effect of input enhancement, one of the approaches of FonF, might be dependent on the particular age of the learners. Harley (1998) studies learners' noticing the articles of feminine and masculine nouns in French and the finding corroborates

Wright's viewpoint. Harley adds that targeted results will be more distinct from children aged 9 and 10. However, quoting a few findings on FonF, we can also find that there is also noticeable lack of studies on FonF among children in the prepubescent ages in spite of their reaching a transitional period with cognitive maturity.

2.3.4 Summary of Age Factor and *English Activities*

English Activities, based on the 2008 *Course of Study* (MEXT, 2008), will begin being widely introduced to children when they reach the 5th grade in *Elementary School at* which point most children will be at the age of 11 (pre-pubescent age). Therefore, we examine the age factor which may give an influence on children's noticing patterns.

As a result, first, it has not been shown either that there is a fundamental difference between child and adult language learning mechanisms (Singleton &Ryan, 2004, pp. 115-116). Second, we recognize a transition period concerning the cognitive development around pre-pubescent 11–12 years old. We can surmise that there is no fundamental difference concerning a learning mechanism, but the way of learning of each child due to his/her cognitive ability varies depending on individuality and ages. In addition, there is a noticeable lack of studies that detail differences in learning a foreign

language between age ranges within childhood. Therefore, we can predict that some differences in the degree of language skill acquisition are seen among learners from the very beginning. In other words, what we will seek children's finding language patterns through experimental lessons enables us to find whether the ages and the developmental learning stages may influence on noticing the form as a by-product benefit.

2.4 Children's Procedural Knowledge

2.4.1 Exemplar-based Learning

Children who learn English through verbal input in *English Activities* are exposed to many exemplars and are given the opportunity to imitate and repeat what they hear and to connect the meaning with the English sound (e.g., *draw a square on it*). This procedure, termed exemplar-based learning, to connect the meaning with the English sound (form: minimal grammatical sentences, e.g., *draw a square*), is defined as form-meaning connections (FMCs). In this cognitive procedure, we do not assume that children of 5th and 6th grade may only repeat and imitate the exemplars without identifying the meaning if we consider their language analytic abilities at that stage.

Therefore, we consider the cognitive procedures from two concepts: (1) the role of imitation and repeating, and (2) the role of exemplar-based learning.

Regarding (1), Yamaoka (2006) states that the role of imitation and repetition, reassessed recently from a cognitive perspective, is related to input processing (VanPatten & Cadierno, 1993, p.46), not to skill-based learning or pattern practice. Kidd, Leiven & Tomasello (2010) prove that the 6 years old children's repetition of the target sentence in L2 learning is derived from the higher frequency input used by the teacher. Thus, children's repeating and imitating of exemplars in which children can retrieve the form with its meaning, arises naturally in the course of efforts to communicate, reflecting what is being learned (Skehan, 1998).

Whereas, concerning (2), we will consider how exemplar-based learning is proceeding, how it works, and how the procedure benefits EFL learning in Japan as a foundation of communication abilities. Skehan (1998) contrasts that rule-based with exemplar-based and defines that two systems coexist, the rule-based analytic, on the one hand, and the formulaic exemplar-based, on the other (p.54). In the former case, compact storage and powerful generative rules operate together to "compute" well-formed sentences, In the latter, the central role is occupied by a very large, redundantly structured memory system and (presumably) less powerful rules which operate on

chunks much of the time, rather than individual terms . Learners should accumulate a repertoire of formulaic chunks of verbs to be able to become cognitively proficient in a new language with such a dual system. In short, exemplar-based leaning is on a parallel with rule based analytic in Skehan's claim.

2.4.2 ACT-R and Procedural Knowledge

Anderson (1993) states that, in his model ACT-R (Adaptive Control of Thought-Rational), the concept of declarative knowledge [5] and procedural knowledge [6] is explained as follows:

> "Production rules are created" initially by finding and experiencing the connection between antecedents and consequences in individual exemplars

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[5] Declarative knowledge is concerned with the structure of stored knowledge. Language user's underlying knowledge about linguistic structure.

[6] Procedural knowledge is about how to do things. The sum of procedures operating on an individual's declarative knowledge.

as instance of these connections, and then by generalizing them through repeated experiences with more exemplars (p. 294).

It can be defined that "declarative knowledge origins of procedural knowledge" (Anderson and Fincham, 1994, p.1). Anderson, Fincham, and Douglass (1997) conduct an experiment by giving 8 examples and the participants practiced application of the rules to examples over a period of 4 or 5 days. They find that the participants start with pure example-based processing in which they acquire procedural skills from retrieval of examples. According to his view, exemplar-based learning at the initial stage is fundamental language experience that gives procedural skills and help learners create rules in the later stage. In this sense, ACT-R is similar to Skehan's co-existing two system but differs from it because he focuses on the role of procedural knowledge through exemplar based learning preceding rule based analytic (such as focusing on declarative knowledge). Logan (1988) also suggests that fluent speech is not based on the rapid computation of rules but on the retrieval of ready-made exemplars that require minimal processing capacity because they are accessed as wholes. Logan's study proposes *rule to instance* contrasted with ACT-R that is *instance to rule*. However, he has emphasized a process of learning by which subjects go from rules to specific examples (Logan, 1988).

Yamaoka defines that “procedural knowledge of the target language is best learned through the learning of exemplars of the language usage [UBM by Tomasello (2003)] as instance demonstrating form-meaning connections of the language” (Yamakoka. 2006, p.1).

UBM emphasizes that language is learned from participatory experience of processing input and producing language during interaction in social contexts (N. C. Ellis, 2008). Children in first language acquisition develops their grammar in social contexts as (1) whole constructions, (2) slots in constructions, (3) patterns (between items in constructions and between constructions which are more island-like. (Lieven & Tomasello, 2008).

Tomasello proves in his L1 acquisition research that children’s cognitive learning of English starting initially with item-by-item learning and their accumulation and later accompanying the process of abstraction and generalization, the establishment of FMCs within the language is essential. Applying exemplar-based learning (called similarly item-based learning stated by Tomasello) to the current L2 teaching has been just initiated. For instance, Eskildesen (2008) argues that “multi word expressions (MWEs) may be generally transitory and locally contextualized whereas more schematic

language knowledge may be less susceptible to environment changes and thus more sturdy in its portability."(p.353).

There have seen a subtle nuance in meaning on whether *rule* precedes *instance* (advocated by Logan quoted above) or *instance* precedes *rule (advocated by* Anderson & Fincham*,* Eskildesen, Tomasello and Yamaoka quoted above), the present study would adopt the latter point due to not only considering the age rage but appreciating cognitive development of human beings. Overall, the role of imitating and repeating in which children can retrieve the form with its meaning is fundamental. Many of researchers support that language learning is *instance to rule* rather than *rule to instance*. L2 learners initially learn items and accumulate the ready-made exemplars accompanying the process of abstraction and generalization. It is considered that exemplar-based learning may also actively occur in the early learning stage in *English Activities* as far as children are exposed to the teachers input and interaction with L2 peers by realizing the establishment of FMCs. However, due to the very little research on L2 learners in Japan, the effectiveness of application will be expected.

2.4.3 Form-Meaning Connections in Exemplar-based Learning of Verb Phrases

The establishment of FMCs and exemplar-based leaning seem to be the reverse of each other as the learning procedures. VanPatten, Williams and Rott (1994) state that children's imitation and repetition to learn the meaning of foreign words are part of the process of learning new languages. Lantolf (2006) emphasizes that imitation is a creative and transformative activity Learners come to self-regulate through imitation. Skehan (1998) also suggests that from a cognitive perspective, repetition arises naturally in the course of efforts to communicate, reflecting the need for 'context-appropriate practice' that can serve to consolidate what is being learned. The role of imitation and repetition, reassessed recently from a cognitive perspective, is related to input processing. VanPatten and Cadierno(1993) argue that "to make communication successful, connecting form with meaning is vital, for it leads to input processing that forms the essential process of language learning."(p.46). The progression of input processing is shown in Figure 1. FMCs are naturally included in the processing mechanisms and have an effect on the phase between "input" and "intake."

In this study, forms can be viewed as formulaic chunks (e.g. *draw a square on it*). These word chunks are not yet schematized as phrases like "I eat *X*" or "*X* pulls *Y*." in children's exemplar-based learning. Thus, FMCs occurring in *English Activities*,

whether it is successful or not, may influence on the phase between input and intake."which is essential in the learning process.

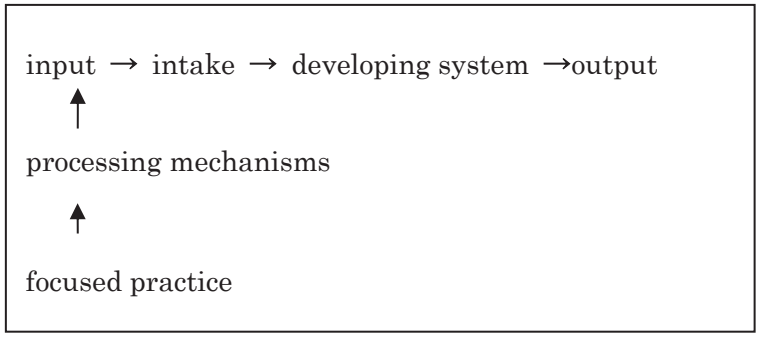


Figure 1. Input Process Progression in Foreign Language Learning (Adapted From VanPatten and Cadierno, 1993, p.46)

2.4.4 Token Frequency and Type Frequency

To observe children's FMCs on English sound, we need to predict whether foreign language learners can successfully notice forms as well as connecting meanings to formulaic chunks.Van Patten et al. (2004) point out that there are variable cases seen among learners and explain why some FMCs are made but not others. They present the following three factors for successfully developing FMCs:

(1)Learner factors

- L1 influence
- L2 proficiency level

(2)Input features

- Input frequency
- Perceptual salience

(3)Language aptitude

- Phonemic code ability
- Analytical and grammatical sensitivity
- Inductive language-learning ability
- Working memory

Learner factors, as shown above, consist of L1 influence and L2 proficiency level. When learning a new language, many learners often attempt to apply concepts from their native language. Cadierno and Lund (2004) suggest that "advanced learners are usually influenced by the L1 thinking for speaking patterns."(p.147). VanPatten et al. (2004) add that "an L2 word is initially mapped to an L1 concept, which may not have the same conceptual features. Words that relate to concepts that are firmly grounded in

physical reality are more likely to share the same boundaries and may vary in attributes across languages (e.g., words such as *democracy, guilt, or penance*)." (p.11). That is, grammatical forms often fail to connect with the meaning or message. Another factor is the L2 proficiency level of learners. VanPatten et al. (2004) mentioned that "advanced learners are better able to make use of linguistic contexts to discover FMCs by using the current knowledge of other L2 forms in the surrounding contexts." (p.14).

Input features, as shown above, input frequency may give an influence on FMCs. N. C. Ellis (2002, 2004) mentions that input frequency affects language processing at all level. It can be considered that frequency effects on learning depending on accumulation of exemplar word categories. The higher frequency of input is absorbed, the greater negotiation of meanings may occur. Bybee (2008) also indicates that "their (children's) developing language abilities will interact with frequency and there are many different kinds of frequency that can have different effects."(p.173). According to Bybee (1995), the first is token frequency, which is the frequency of particular items and entrenches the comprehension and use of concrete pieces of language-item and phrases (collocation). The second is type frequency, which is the frequency that different actual forms occur in the same language slot. The role of input frequency in language learning can be summarized below based on Bybee's study (2008, pp.218-221):

The Role of Token Frequency,

(1)Conserving effect：

Token frequency strengthens memory representations for linguistic forms and makes it more accessible. This is what is referred to as a “conserving effect”

・e.g., The more exposure a learner has to irregular forms (such as “kept”), the greater chance that he/she will express them correctly.

(2)Learner autonomy:

Learners can figure out certain vague input after understanding the rules of a language.

・e.g., Learners hear the input, “*gimme”* at first, and they figure out it is a hybrid of “*give+me”* in a later stage.

(3)Reducing effect:

Frequently used input tends to reduce phonetically.

・e.g., “*I am going to* ［aimənə］” can be affected by assimilation and reduction. The repetition of repeated words leads to the greater overlap and reduction of the component gestures.

The Role of Type Frequency,

Type frequency leads to categorization and analogy-forming of input and is a major factor for determining the degree of productivity of constructions (Bybee, 1985). In other words, type frequency may trigger learners' noticing of forms and induce the application of language patterns.

Another feature of verbal input is input salience (perceptual salience, similarly defined by VanPatten, et al., 2004). For instance, *will* is salient compared to *be going to.* Synthetically complicated word chunks or perceptually difficult phonetics may not be accessible for learners in early stages. The differences between the foreign language being learned and the native language of learners may affect many aspects of salience. Taking perceptual salience in consideration, in case of Japanese L2 learners, certain categories of words, such as loan words, may affect their input salience (Yokokawa, 2009).

Language aptitude has been discussed in the previous section and it indicates IDs depending the following language abilities. Carroll (1965) summarizes that there are four major language abilities:

(1) phonemic coding ability: the ability to codify foreign sounds in a way that they can be remembered later.

(2) grammatical sensibility-: the ability to recognize the grammatical functions of words in sentences.

(3) inductive language-learning ability: the ability to identify patterns of correspondence and relationships involving form and meaning.

(4) rote-learning ability: the ability to form and remember associations among stimuli.

N.C.Ellis (2001) adds to the ability to repeat phonological sequence on (1) Individual learner differences are also discussed by Skehan (2002). He mentions that there are two types of learners. There are the *analytic* learners who are grammatically sensitive and demonstrate finely tuned, inductive language-learning abilities. The other types are the *memory-oriented* learners who have strong memorization capabilities and are adept at learning through word chunks. Skehan (1998) also adds to (4) the factor of working memory, which is memory of very limited capacity that holds information for a short time. Learners with larger working memory capacity are better equipped to attend

to and process input in a short period of time. Given this rationale, we can deduce that there likely exist many differences among children's FMCs in English learning.

2.4.5 Summary of Children's Cognitive Procedures

We examined the role or imitation and repeating through exemplar-based learning with the view of Anderson's ACT-R and UBM through Tomasello's first language research. By retrieving ready-made exemplars, the children may gain procedural knowledge which associates with declarative knowledge in the later learning stage. The cognitive procedures, fundamentally occurs when FMCs are established, which is essential for shifting from input to intake. The procedural knowledge is subconscious and implicit in the early learning stages so that it has been disregarded in teaching but plays a significant role in L2 learners' later learning (Anderson, 1983).

We also considered how children's FMCs would be established successfully concerning verb phrases. Children may be successful in FMCs by considering the three factors: 1) learner factors, 2) input factors, and 3) language aptitude. Since we aim at having children pay attention to linguistic patterns through FonF approach, what input frequency positively contributes to children's finding language patterns is letting us

consider the needs of accumulations of exemplars beforehand. Further, gaining type frequency after accumulating an amount of token frequency may trigger children's attention to what is in the input. According to Bybee's suggestion, type frequency is essential in the language classroom but should be instructed through negotiation of meaning. Yamaoka (2008) suggests that teachers should encourage learners not only to repeat simple everyday phrases but also to learn and be able to utilize more practical expressions that represent the realization of teachers themselves, so learners can transition from thinking concretely to being able to think abstractly. In these respective contexts, children may operate their cognitive ability as much as possible, then, feel the cognitive procedures as being much more attractive, more interesting.

2.5 Overview of Teaching Grammar for the Early Adolescent Learners

2.5.1 Overview of Teaching Grammar

Based on this understanding of FS and ACT-R, we reviewed current grammar teaching for the early adolescent learners in Japan and considered the applicability of *instance to rule* Regarding junior high school English education, MEXT (2008) stated

that one overall objective is to develop basic communication abilities. MEXT (2017) announced towards *2020 New Course of Study* that teaching grammar must be fully integrated with meaningful language activities rather than depending on grammar translation and that linguistic rules should be taught to support communication. As a traditional approach to teaching language based on explicit instruction, the use of grammar translation in both EFL and ESL classrooms had been criticized on the grounds that grammatical objects are taught without reference to any meaningful context. The instructional approach may "largely ignore language learning process" (Long & Robinson, 1998, p. 16). It also produces more false beginners than finishers because it ignores beginners' own possibilities (human capacity for language acquisition to be highly resilient) (Long, 1997). Referring to several empirical research on second language acquisition (SLA), four applicable approaches to teaching grammar in support of communication are summarized as follows.

(1)Focus on Form (FonF) is an instructional process that prompts children to identify linguistic features by providing meaningful input (Doughty & Williams, 1998; Gass, 1997; Izumi, 2009; Long & Robinson, 1998; Muranoi, 2006; Shintani, 2012, 2013).

Schmidt (1995) claimed that language acquisition does not occur without noticing linguistic features, and FonF allows learners to find language patterns by repeatedly providing exemplars and interchanging words within slots. Specifically, this process can be realized by using token frequency combined with type frequency (e.g., *draw a circle on it* can be exchanged with *draw X on Y*). To direct learners' attention to the form, teachers may use structured input, input enhancement, recast, dictogloss, consciousness-raising tasks, input processing, garden path, and others (Doughty & Williams, 1998, p. 258).

(2)The PPP model, grammar instruction consists of a structured three-stage sequences: presentation–practice–production (PPP) which has been employed in both ESL and EFL classrooms. This approach is more deductive than FonF, emphasizing earlier discussion of grammar rules using an oral introduction; it does not wait for learners to notice linguistic patterns. PPP aims to develop declarative knowledge (Skehan, 1998) and focuses on accuracy in production. R. Ellis (2003) argued the PPP models are questionable because they are based on the belief that practice makes perfect. Skehan (1996) pointed out that it is easy to use, to organize, and to evaluate, and also the teacher is full control of the structures intended to be covered and the approach does not consistent with the current evidence of SLA researches. He criticized that

levels of attainment in conventional language learning are poor and the learners leave school with very little in the way of usable language. On the contrary, Sato (201) suggested that Japanese learners with little exposure to English would notice fewer linguistic patterns than with FonF and that some version of PPP is more suitable for teaching Japanese learners.

(3)As a better alternative, depending on the difficulty of targeted grammar, some SLA researchers (Dulay & Burt, 1974; Izumi & Isahara, 2004; Shirahata, 1988; Shirahata, Suda, & Wakabayashi, 2006) have suggested using *natural acquisition order*; which is influenced by the learner's mother language. For instance, the morphosyntactic structure *-ing* (similar to *-teiru* morphemes in Japanese) ranks second while the article "the" (which does not exist in Japanese) ranks last because of the learner's L1 influence. In this case, it is considered that the former grammar can be taught with FonF in which procedural knowledge could be developed and the learners may notice language patterns while the latter one could be taught with PPP in which declarative knowledge will support an understanding of the rules.

(4)Finally, the present study proposes FS. In one of the very few empirical studies of FS in Japan, Nakamori (2009) claimed that this approach (called Lexical Approach in his

study) is suitable for junior high school students because "It does not explain grammar rules in an abstract manner and children can understand what is going on. Children can recognize how lexis and chunks work in a natural setting." Additionally, Nakamori (2009) stated, "Human cognitive development requires that explicit grammar instruction should be given if and only if the learner has matured enough to process the abstract rules" (p. 161).

Thus, the present study will employ the option (4) summarized above for instructing *English Activities* focusing primarily the inductive approach and the use of FS and FonF and select the target grammatical forms considering the concept (3) . It is natural to assume that the easier grammatical morphemes *-ing* would be acquired in option (4) and the more difficult grammatical ones *-ed* would be less acquired. However, since the absence of the empirical research in EFL classroom with adolescent learners could be seen, I venue to throughout the suggestions that both easier ones and more difficult ones may improve the learners' procedural knowledge by abstracting the rules in formulaic chunks. The process itself leads the learners to equip the readiness to abstracting the rules.

2.5.2 Instance to Rule

The present study promotes the option (4) for young adolescent learners (ages 12 and 13) taking the FS that the students come to possess into consideration. The instructional medium of FonF is also integrated. Using an explicit grammar explanation is not avoided strongly, preferably, heightened by eliciting the students' noticing the patterns after they accumulated certain amount of FS. Accordingly, for the most part, we take into account the *instance to rule* as following order which may improve the learners' procedural knowledge. The instructive ways are (a) to provide exemplars as linguistic property (FS-exemplars) using teacher talk; (b) to elicit FS accumulated by students prior to the lesson, providing an opportunity to access the rule on the basis of their own FS-accumulation; (c) to provide an explicit grammar explanation using the chart after students have formed a schema of the structure (FS-schema formation); and (d) to encourage students to imitate and repeat, borrowing the exemplars for production (FS-borrowing). With the exception of (c), all these procedures should be taught in English. The teacher should encourage students to replace the FS part by borrowing the given

exemplars rather than creating new sentences. FS exemplars written on teachers' handouts can also be borrowed. For instance, between (b) and (c), the teacher should encourage students to find linguistic patterns using dictogloss[7] (Wajnryb, 1990) with sound and structured input (FS-FonF). The grammar image acquired by the student is drawn on the chart (fewer grammar terms means less tedious explanations). In (d), the teacher must ensure that students do not rely on the rule but that they instead use imitating, repeating, borrowing, and replacing parts of chunks (increasing both token and type frequency) to form language slots that students can access rapidly). In (d), the grammar rule learned in (c) can be expressed by students.

[7].Dictogloss is an approach of grammar dictation (Wajnryb, 1990). The teacher reads a story, and the students work in pairs and try to reconstruct what they just heard. The focus is on both meaning and form to reconstruct the story with four skills in collaborative work

Chapter 3

Verb Acquisition

3.1 Introduction

In this chapter, we consider the following topics: 1) how children's verb acquisition occurs in L1, and 2) how learning verbs progresses in EFL classrooms. Furthermore, we will consider whether the process of L1 children's verb acquisition is similar and can be applied to the way of learning in the EFL classroom.

As we mentioned in Chapter 2, the "language learned from participatory experience of processing input and producing language during interaction in social contexts where the individually desired non-linguistic outcomes (a bank transfer; another cup of milk) are goals to be achieved (or not) by communicating intentions, concepts, and meaning with others" (Robinson & N.C. Ellis 2008, p.490). In other words, both L1 and L2 learners, at any age, learn a new language through the view of exemplar-based language learning that holds developmental phases: 1) whole constructions, 2)

slots in constructions, and 3) finding patterns (Lieven and Tomasello, 2008). This learning occurs during interactions among children by conveying meaningful messages that communicate intentions.

3.2 Verb Acquisition in Exemplar-based Learning

In recent years, UBM has been advanced by cognitive linguists (Bybee, 2002; Goldberg,1995; Langacker, 2000; Tomasello, 1998;). UBM holds that abstract grammar emerges from language use (Langacker, 2000). Tomasello (1992, 2003) collected the data in a diary he kept of his daughter and Travis's (T's) language utterances. According to his handwritten diary entries about T's language development (approximately during 2 and 3 years old, for 16 to 26 month), Tomasello (2003) states that in UBM, "competence of a natural language consists of the mastery of all its items and structures, which constitute a much more complex and diverse set of linguistic representations than the core grammar of a formal approach" (pp.5-6). He defines "the mastery of all its items and structures" as item-based learning that is largely seen in children's early language learning.

In Tomasello's view from a number of experimental studies, children's use of English transitive constructions with different words indicates the mechanism for how human beings categorize the new input they hear. It is summarized as follows from his research (Tomasello, 2003, pp. 92-93):

For instance, suppose an adult asks the child something like *Do you want to glorp the modi?*

(1)To comprehend the new words (*glorp*, added by the author), the child must understand something of the overall communicative intention.

(2)What parts of this are already taken by the known words and constructions (and information).

(3)Children begin to use their knowledge of other words that might contrast pragmatically in the adult utterance with one they do not know: why did she say I could not *throw* it but I could *glorp* it?

(4)These two additional sources of linguistic information include one in the immediate linguistic context and one in the child' stored linguistic experience.

The examples shown above explain the procedures of FMCs and the findings of language patterns by the child. The learner may find the patterns by 1) reading communicative intentions of others, 2) operating their stored linguistic experience, and 3) finding the part taken by the unknown word from linguistic information. To say more precisely, the child, first, must have known "throw it", and second, heard "glorp it" in the context. It brings the pattern of "---it" that we suppose it as a reverse slot. At that time, the child begins to pay attention to "---", that is the part of verbs. It gives an opportunity for the child to find the slots, such as "throw ---" or "glorp ---" (Tomasello calls it as item-based schema formation as we see in Table 2-1. At this moment, the slots are considered to be individual and not across the patterns. We summarize this cognitive process with a quote from Tomasello (2003)as follows:

> Children could in principle memorize utterances in the contexts in which adults use them and then reproduce those utterances in those contexts as needed without internal analysis. They do this in some cases (Hello; Thank you; See-ya-later). However, most often, they attempt to analyze the utterances they hear and partition them into constituents both structurally and statistical, learning on the utterances they experience to begin moving

> down the road of grammatical development. In this process children do two things simultaneously: first, they extract from utterances and expressions small things, such as words, morphemes, and phrases by identifying he communicative job these elements are doing in the utterance or expression as a whole. Second, they see patterns across utterances, or parts of utterances, with similar structure and function, which enables them to create more or less abstract categories and constructions. (p. 41).

Tomasello also shows the cognitive process of a child's verb acquisitions in Table 3-1, where he reveals the necessity of reproducing sequences, that is, fundamental exemplars, such as "I wanna see it," at the beginning stage of the cognitive process. These exemplars can then lead children to the phase of schema formation and its slot-filter category. Thus, we can consider that exemplar-based learning is fundamental as linguistic information, which brings patterns and has children pay attention to the part of slots.

Table 3-1

Some of the Requisite Cognitive Processes and Experienced Language Necessary for Constructing the Main Types of Child Constructions

Structure	Cognitive Process	Input
Expression	・Segmenting communicative intentions (perhaps) ・Reproducing sequences	I wanna see it I wanna see it I wanna see it
Pivot Schema	・Schema formation ・Slot-filter category	Throw ball Throw can Throw pillow
Item-based construction	・Second-order symbols	John hugs Mary Mary hugs John
Abstract construction (and syntactic roles)	・Analogy	X hugs Y A kisses B M kicks N
Paradigmatic Category	・Categorization (via distributional analysis)	a X, the Xs, Eat a X a Y, the Ys, Eat a Y a Z, the Zs, Eat a Z

The table reprinted from Tomasello (2003, p.174)

3.3 Verb-Island Constructions

As we studied in the previous section, item-based schema formation of "throw ---" or "glorp ---" is considered to be individual and not across the pattern. In this section, we predict the next stage of item-based constructions, in which children can analyze the slot within an item. Concerning schema formation by children, Tomasello (1992)found that

almost all of his daughter's early multi-word utterances during her second year of life revolved around the specific verbs or predicative terms involved. He defines them as verb-island constructions, where a child's utterances are shifting to more structural output explosively after 16 months. First, children imitate item by item as a multi-word unit without analyzing its structure. Second, children accumulate each item, but the item is independent (e.g., *get sauce*, *get me up there*, quoted from Appendix, Tomasello, 1992, p. 306). This assumption is defined as the Verb Island Hypothesis, and the concepts are defined by Tomasello as follows:

> T's three-or-more-word sentences (during the 18th to 24th month) are grammatical in a way that her two-word combinations are not. Many of the verbs are used with more than one argument (up to three), and argument roles in many sentences are clearly marked with either word order or the appropriate preposition. My hypothesis is that this grammaticalization derives, for the most part, from T's learning about the combinatorial possibilities, and the marking of these, for each verb individually (Tomasello, 1992, p. 238).

Compared to the early age above, T's language later showed a different grammaticalization (during the 19th to 20th month) as follows (such as *draw this door*, *draw star on me*, quoted from Tomasello, 1992, pp. 230-232).

> The grammaticalization apparent from T's 19th or 20th month may derive from her ability to generalize or analogize patterns from one verb to another, from whole classes of verbs to others, or across the whole of verbs (Tomasello, 1992, p.238).

As "get --- up" exemplified above, Tomasello (2003, p.117) points out that some verbs are used in more complex frames of several different types (Draw---, Draw----on---, and Draw---for---)". The part of "---" can be replaced with different nouns in its own island, and this cognitive operation may play a significant role in language learning. As seen in Figure 3-1, children accumulate specific word items by replacing the part of "---" with different words that involve agents (e.g., I, You), patients (e.g., him, her), recipients (the ball), locations (up, there), and so forth. Tomasello explains the schematization of verbs (See figure 3-1).

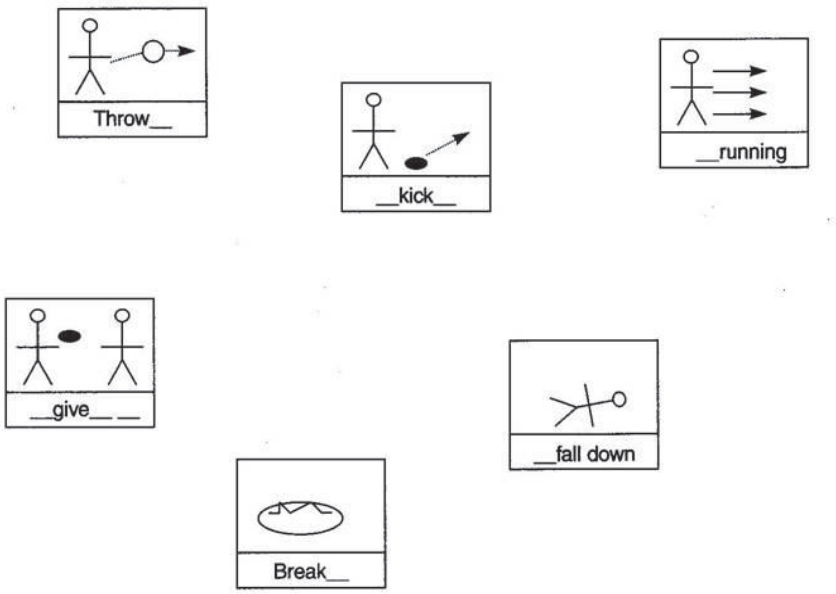


Figure 3-1. Some Hypothetical Item-based Schemas of a 24-Month -old Child (Reprinted from Tomasello, 2003, p.120)

Tomasello explains the concept of the figure, explaining that it contains some hypothetical item-based schemas of a 24-month-old child, each with a form (English words and slots) and a function (iconic depiction). In the Verb Island Hypothesis, the schemas are not structurally related, so no connections among them are depicted".

Thus, schema formation of verbs induces item-based constructions, in which children can analyze the slot within an item. Furthermore, in paying attention to a slot, such as "get---" or "draw ---", children can find the part of "---" replaced with different words. This mechanism itself is children finding language patterns, which induces their grammatical categorization. Gathercole (2007) and Wilson (2003) suggest even adult L2

learners have difficulty in dealing with word order when there are time restrictions unless they use a specific word order. The correct word order is due to item-based rather than rule-based grammar because rule based knowledge can be stored in short-term memory, whilst, item-based grammar, which embraces abstract procedulization and has a greater influence on language acquisition not only in L1 but also in L2. Eskildesen (2008) observed the can-patterns of adult L2 learners and mentioned that an "I can" verb schema begins from token examples, and later it leads to type examples. Eskildesen also points out that token frequency presents the accumulation of exemplars, whereas type frequency presents abstract constructions and, in the latter stage, schematic constructions. According to Eskildesen's definition, token frequency is "storage as concrete whole," and type frequency is "storage as abstract, schematic construction" (Eskildesen, 2008, p. 350). Eskildesen (2008) suggests in his argument that "MWEs may be generally transitory and locally contextualized, whereas more schematic language knowledge may be less susceptible to environment changes and thus more sturdy in its portability" (p. 353). Mellow (2006) demonstrates that L2 learners (age 12) whose native language is Spanish also use specific patterns at the earliest stage. After a while, these learners produce an applied output. According to Eskildesen (2008, 2012), item-based grammar is effective in the first stage of learning; however, it is not necessary to wait

until item-based grammar is transferred to the abstract schema. It can be kept as an exemplar and is effective at any learning stage. In this study, the concept of item-based grammar will be emphasized as an alternative way to teach grammar, which needs to be integrated with the rich content in teaching junior high school students who are at the successive period following exemplar-based learning in elementary school *English Activities*.

3.4 Path Breaking Verbs

Item-based constructions may trigger finding patterns across items. In contrast, focusing on a specific item also expands in children's language use when the frequency of an item is provided. A study of verb acquisition by Ninio (1999) argues that the formation of language slots involving verbs could be developed and expanded relatively quickly, and he called these as initial path-breaking verbs. For instance, the verb "give" may be used initially as a word-unit (e.g., give me cookies). After a relatively short time, the learner will begin to form language patterns (e.g., give OO) by mapping the act with the form. Ninio found that many of the children's earliest words, up to 60 percent, were

words that their parents had used relatively often as single-word utterances, such as people's names, interjections, performatives, and some object and action words (1993).

Ninio (1999) also claims that there are patterns of effective verb acquisition orders and the type of verbs preferentially uttered by children during L1 learning. First, utterances that are not yet combined with objects begins around 17 months of age and Verb-Object (VO) combinations are observed prior to Subject-Verb-Object (S-V-O) combinations. On the basis of Ninio's study, V-O combinations begin to be uttered by children at around 20 months of age. Action verbs (e.g., put, take, want), sense verbs (e.g., see, hear, smell), and creation verbs (e.g., make, draw, write) are commonly uttered. Later, motion verbs (e.g., walk, run, jump) and agent-controlled verbs (e.g., break, cut) follow. In other words, low transitivity and abstract verbs (e.g., put, take, want, hear, make) are usually uttered prior to higher transitivity, and more concrete verbs (e.g., break, cut, walk, run, jump) were uttered in the early stages of children's language acquisition.

Thus, imitating and repeating a slot with frequency can be expanded in children's utterances. The utterances of children in the early stage seem to be fragments or single-word utterances, such as nouns, but combinations or word-units, such as V-O

combinations, appear in later stages. However, each construction is mutually independent at that stage.

3.5, The Role of Teaching Verbs

We have also considered the importance meaning of teaching verbs to learners. Verbs need to be understood as a means of sequential processing to determine others' intentions for children to learn words in communicative situations. They imitate and repeat verbs by understanding others' actions and looking at the change of state (break---, cut---), positioning, (put up---, pull---) and so on. Children, first, use the verb or verb phrases as item-by-item, then they use verb-island constructions that are mostly two- or three-word combinations. This cognitive process relates to the grammatical categorization in the later stage.

Tomasello (1992) argues that learning the meaning of verbs is harder than learning nouns. Unlike verbs, nouns tend to label referents that are more imaginable and more perceptually accessible. On the contrary, while learning verbs children must attend to motion or events and dynamic relations to solve the verb learning problem.

Verb learning is category of meaning and it is to be acquired by appropriate mapping to the syntax.

Kerasten and Smith (2002) report that children will learn a verb more rapidly in the context of a familiar object than in the context of a novel object. If the verbs are employed with familiar objects, the children are able to map the meaning easier (e.g., *move* the car). In this case, "the car" (a noun) can immediately guide the meaning of "move" by connecting the verb with an object.

Therefore, teaching verbs to students needs to be administered within not taken from meaningful context-dependent structures and collocations. In considering the role of learning the verbs for the learners, Nakamori (2009) suggests that "they are expected to eventually extend the use of verbs to their activities" (p.215). To elicit children's the slot-filter category, gaining input frequency (both token and type) is important as well, and these devices are considered to be dependent on teachers' input in any of the various approaches.

From a UBM perspective, Nakamori (2009) conducted the longitude research on using the Lexical approach (defined as FS in this study) to teach verbs to students at a junior high school. He suggested that "every new verb [should be] introduced with many examples that show how the verb is used in context. Visual aids [are] frequently used"

(p.229). Correspondingly, in this study, the visual materials, gestures, scenes, and teachers' performance in a meaningful context have been presented ahead. The representation is mapped on the concept in the learners' mind without the aid of L1; simultaneously, the concept is linked with the English sound. This procedure is remarkably different from adult L2 learning. Here are essential implications of the important role of learning verbs based on UBM:

(1) Learners use the mapping between syntax and semantics not to infer the meanings from their syntax but to infer their syntactic category from their meanings (Pinker, 1994, p. 377)

(2) Learners might gain the pattern detection ability while learning and using verb phrases by other speakers across speech events (Pinker, 1989)

(3) Increase in the accumulation of verb phrases may boost the learners' productive patterns and the schematicity of the emerging patterns may extend across the language. Speakers learn constructions from the statistical features of their input (Taylor, 2012).

3.6 Teaching Verbs in Japanese EFL Classrooms

Despite the importance of verb acquisition in language learning from the very early stage, many of EFL classrooms for children are not devoting their effort to teaching verbs. Furthermore, verbs are often taught apart from the word units or V-O combinations. Therefore, we seek some possible approaches and research conducted in the recent EFL classroom in Japan regarding teaching verbs because it provides more opportunities of find language patterns and forming schema.

For instance, regarding *English Activities*, one pilot school, Narita Elementary and Junior High School in Narita, Chiba Prefecture, introduces 835 English words during six years of EFL learning. The words are divided as such: verbs, 9.2% (77 words); adverbs, 1.1% (10 words); prepositions, 0.7 % (6 words). The other 89% of the words constitute nouns and adjectives combined with nouns (Narita elementary and junior high school, 2005). The data above show a major imbalance in the learning of verb/noun and others relationships. There would be relatively few chances to hear the verb constructions with those intentions.

However, in each actual class, we presume that the teacher may use MWEs including V-O combination in a meaningful context, such as telling a story or implementing games and songs. For this reason, Kashiwagi (2010) categorizes verbs

based on specified levels of input frequencies in the EFL classroom by analyzing the supporting materials, *English Notebooks* 1 and 2. According to the results, low-transitivity and abstract verbs are used during teachers' verbal interactions with children. Meanwhile, higher-transitivity and more concrete verbs, including action verbs, are taught in a more structured, targeted approach. *English Activities* offers teachers and children opportunities to use verbs from this category because they are necessary for children to interact with each other and their teacher. Accordingly, verb combinations, such as "like *X*," "have *X*," or "want *X*," which are classified as high-frequency verb phrases, may constitute a significant item-based learning experience. The details of the accompanying research will be discussed in the following section.

In a theoretical approach to introducing verbs, Asher (1977) proposes a total physical response (TPR) approach. In TPR, children express their understanding of what they have absorbed by using gestures or physical responses minimizing the need for oral responses. TPR is introduced by showing gestures and children can guess the meaning with the form so that it may provide opportunities for them to become familiarized with verbs and V-O combinations and find language patterns (e.g., stand up, go to the door, pick up the book, and so on). This approach, currently used in most junior high schools, is also a component of *English lessons* (e.g., Touch your head; Can you swim?).

The effectiveness of using TPR in 6th grade (age 12) was investigated by R. Yamamoto (2010) and compared with control groups that did not utilize it. The results showed higher frequencies of using gestures and body movement among the TPR class students during communication exercises. This research suggests that children not only absorb targeted instruction more effectively through TPR, they are also able to express what they have learned. Earlier in 2008, Watanabe and Kawabuchi (2008) conducted a similar investigation of the use of TPR in junior high school EFL classrooms. The results were also similar when compared with control groups that focused more on structured pattern learning. Kawabuchi's study revealed that students in the TPR classrooms demonstrated better short-term and long-term memorization of what they learned.

The effect of TPR on learners' understanding and intake of targeted forms are a strong indication of the development of FMCs by students who undergo this type of instruction. Many intransitive verbs and V-O combinations that can be acted out, and therefore easier to remember, can be taught. It should be noted that this method would not be very effective for introducing more abstract verbs (e.g., get, make, want, need, think, etc.) that require more complex expression. Nevertheless, TPR learning can be very effective in the early stages of verb acquisition. From the view point of exemplar-based learning, this can be applied and incorporated into *English lessons*.

Another approach is proposed by Ogden (1994), titled *Basic English*. It focuses on teaching basic verbs for beginning students using image sketches while not focusing on any specific context. The drawings are similar to picture cards of nouns and give clear images for learners to understand. The drawback of this approach is that it fails to teach polysemous meanings of verbs because it reflects only certain meanings of verbs in the picture cards. However, implementing verbs by showing the picture may play a role of retention of the act and its image, which the teacher demonstrates but does not help children with inducing the schema formation of verbs. However, since the verbs are context dependent, if the teacher applies these image sketches of verbs to *English Activities* by using structured input with a meaningful content, it may help children to infer the meanings.

Other approaches to EFL learning involve storytelling, in particular, using picture books that contain both token and type frequency with visual sketches. Children are exposed to the context in which they are able to infer meanings and repeat and imitate verbs and verb phrases. Immersion classes also provides abundant input where children hear and use verbs in a natural setting, which is also very effective in learning other subjects, such as math, science, arts, P.E., and so on (M. Yamamoto,1999).

3.7 Conclusion

We conclude the cognitive process of children as follows. When children hear a new language (e.g., *Do you want to glorp the modi?*), they first read the communicative intentions of others, second, operate their stored linguistic experience through reproducing sequences, and third, begin to pay attention to a repeating part of a specific item. This cognitive procedure gives an opportunity to find the language slots "--- it" as a reverse slot, and then "throw ---" or "glorp ---". This can be called item-based schema formation. Following that, schema formation of verbs induces item-based constructions in which children can analyze the slot within an item. Paying attentions to a slot, such as "get---" or "draw ---," The children can find the part of "---" replaced with different words. This mechanism itself is children finding language patterns.

In reviewing the research and approach of teaching children verbs in EFL classrooms, we recognize the lack of focus on verb acquisition. When the teacher teaches students verbs through TPR or using pictures of verbs, it seems to keep the verbs and the words around the verbs apart. According to the research of verb acquisition in L1 (Tomasello, 2003, 1992), it is important for children to have opportunities to find language patterns through exemplar-based learning in which the cognitive procedures

occur. It is also fundamental that language learning move toward abstract constructions because teachers need to have children pay attention to language patterns by providing abundant input with both token and type frequency.

3.8 Aims of the Study

The first purpose of this study is to analyze how successfully older pre-pubescent children (around 5th grade) establish the FMCs for verb phrases (V-O combinations) during *English Activities* in which they learn English by hearing the sound input. We will obtain the basic data on children's exemplar-based learning in 5th grade. For this purpose, the visual teaching materials on verb phrases is developed as a by-product of this research and also used for testing how much of and to what extent children's FMCs are establishing successfully.

The second purpose of this study is to analyze whether FMCs during EFL learning vary in degree depending on certain variables. The variables include the amount of input (the hours of lessons), perceptual salience of sound forms (such as word familiarity of each verb phrase), length of learning experience, individual difference, and age factors (within the age range of 1st to 6th graders). The results obtained may give evidence of the

process of FMCs and clarify to what degree children's exemplar-based learning effects FMCs.

The third purpose of this study is to clarify whether the accumulation of exemplar-based learning positively affects the establishment of FMCs by analyzing the same age of 5th graders: those who have had longer and those who have had shorter hours of English lessons.

The fourth purpose of this study is to verify the effectiveness of FonF to induce children's finding patterns. For this purpose, classroom lessons of 5th graders are supported by using the FonF approach that provides teacher's structured input by using a storytelling lesson. The study also focuses on the effect of accumulation of FS by gaining not only token frequency but type frequency.

The fifth purpose of this study is to verify the effectiveness of the FS *instance to rule* in learning the English progressive form (*-ing)* and English passive form (*-ed)* addressing the students' grammatical sensitivity toward the awkwardness of ungrammatical sentences. FS is supposed to be the best for noticing language patterns (morphemes *-ed; -ing*) if both the accumulation of token and rise of type frequency occur. For this purpose, classroom lessons of first graders and second graders (Ages 13-14) in junior high school are instructed by using structured input and the dictogloss approach.

The final purpose of this study is to discuss the effectiveness and forte of the UBM approach for EFL learning and to consider its contribution to language learning. This study assumes that early adolescent learners do not merely imitate or memorize lumps of words; they are able to find patterns in verb phrases Therefore, we will analyze the data collected to identify whether schema formations of verbs (e.g., kick---, throw---, want---, give *XY*, *X* is cook*ing Y*, *X* is cook*ed Y*, etc.) occur through FS.

Chapter 4

Analyses for Input Frequency of Verb Phrases in *English Notebook*

4.1 Introduction

In Chapters 2 and 3, we examined the effectiveness of using FonF (which uses a structured input) in children's English learning; when using FonF, we expect that children may find language patterns by accumulating exemplars. With this in mind, in this chapter, we analyze both the token and type frequencies of English verbs as a sound input that elementary school children are exposed to as they are using *English Notebook 1 and 2.* In *English Activities,* the frequency of a formulaic sequence, including verbs, may give children opportunities to schematize the form of the verbs they use (e.g., kick *X*, throw *Y*).

Bybee (1985) pointed out that it is important for the proper amount of frequency to be used because it impacts students' categorization of input, pattern finding, and

productivity for new sentences. As we summarized in Chapter 3, based on Bybee (2008), the role of token frequency and one of type frequency can be stated as the following:

(1)The first steps to language learning is token frequency, which is the frequency of particular items and entrenches the comprehension and use of concrete pieces of language-item and phrases (collocation). The second steps to one is type frequency, which is the frequency that different actual forms occur in the same language slot.

(2)Token frequency strengthens memory representations for linguistic forms and makes these forms more accessible while type frequency leads to categorization and the analogy forming of an input, which is a major factor for determining the degree of productivity of language constructions.

Children hear the input of verb phrases based on the content of *English Notebook 1 and 2*, but also hear the teacher's verbal input, which be partially from *Guidance for English Notebook 1 and 2* (2008b, 2008c, and 2008d), from which teaching plans, the targeted sentences, and teacher talk are modeled. However, language use is vital and situation dependent, so the analysis may not describe the whole situation, but we will have a

general view of what range of verb phrases is used over the children's 2 years (70 hours) of lessons. The analysis is also compared with the language corpora that represents the general use of verb phrases and furnishes data on to what extent we can expect children's exemplar-based learning to occur.

4.2 Purpose of Analyses

Two topics will be addressed in this chapter, as follows:

(1) We analyze the frequency of English verbs as a sound input that elementary school children are exposed to by using *English Notebook 1 and 2.* Most of these phrases are included in the book's targeted expressions and teacher's verbal instructions. We analyze these phrases with the view of token and type frequencies, and then, they are ranked according to the degree of frequency (Analysis 1)

(2) We analyze the verb phrases that are in the higher frequency categories and predict their usage in the language context of *English Notebook 1 and 2*, We then discuss to what extent children's cognitive process of learning verb phrases can take place (Analysis 2).

The results of (1) can be applied to the 50 basic verbs listed in Appendix 4-A and compared with language corpora such as the British National Corpus (BNC)[8] and KUBEE (Ishikawa, 2006) in Table 4-3. The discussion of (2) can be applied to practical lessons using *English Notebook 1*. Based on this, the experimental lessons are actualized in the English classrooms, as shown in Chapters 6, 7, and 8.

4.3 Procedures

The teaching materials we will focus on are the teaching plans and model sentences found in the first chapter of *Guidance for English Notebook 1 and 2*, which is written partly in English, and the script of additional digital teaching materials.[9] The verb phrases are extracted from the model sentences, and then, these phrases are categorized by the token and type frequencies. Given that the children's memory of

[8] The British National Corpus (BNC) is a 100 million word collection of samples of written and spoken language from a wide range of sources, designed to represent a wide cross-section of current British English, both spoken and written.

[9] Digital teaching materials are distributed by Ministry of Education and Culture, Sports, Science and Technology Japan in 2008. It is installed into the PC and presented on electric white board. It can present English native sound recorded by ALT with showing pictures. Teachers can also reproduce the sound by using them. The contents are written in "*Eigo Noto Shidosyo* Ⅰ, Ⅱ"(2008c) [Guidance for *English notebook* 1 and 2]

verbal inputs tends to be short term, the analysis is conducted lesson by lesson throughout one academic year. There are nine lessons conducted in the fifth grade and nine in the sixth grade. According to *Guidance for English Notebook 1 and 2* (2008c), the procedures of the lesson flow are summarized as follows:

(1) Have the children listen to the teachers' verbal instructions or English sounds that are provided by the digital teaching materials. Have the children become interested in topics of everyday life and of different cultures by utilizing simple methods such as small talk with the teacher.

(2) Have the children familiarize themselves with the new words and expressions.

(3) Have the children interact with others using short sentences in situational settings (such as pair work or collecting information).

(4) Have the children express themselves through an imitative output of what they just learned (using show and tell or interviews).

The procedure of the analysis is as follows: First, we took the verb phrases out of the script of *Guidance for English Notebook 1 and 2*. We simply counted how many verb phrases were used. In the case where the same phrases were used repeatedly, we

also counted them because this is considered a token frequency. Second, if we found a slot, "make---," in which "---" is replaced with a different word, we counted it as a type frequency. For example, if the teacher were to ask, "Will you *make* groups?" or were to say, "We are going to *make* an original story," the statements would form independent examples for the children to hear. The main verb across the sentence can be a slot such as "make---," but it can appear in one type of example, so we counted it as twice (*make* groups and *make* an original story); this is regarded as type frequency. Moreover, if the teacher were to say the phrase "Make cards" three times repeatedly, We would count this three times as a token frequency but one time as a type frequency. To put it in extreme terms, if the teacher were to say the same phrases all the time and The children were to repeat them mechanically, the type frequency would not increase by more than one. The following demonstrates how 14 example phrases are categorized as token and type frequencies:

make a line/ make a straight line/ make a group/ make groups/ make an original story/ let's make them together/ make pairs/ make a list/ make cards/ make pairs(shown a second time)/ I can make sushi / let's make rice

balls/ make an omelet / let's make sushi（shown a second time）/ (Token, 14; Type 12).

In the above, the number of token frequencies is 14 while the number of type frequencies is 12 because the phrases "*make* pairs" and "*make* sushi" both appear twice. The other phrases only appear once. However, there seem to be some drawbacks to this procedure; for example, in this case, the verb "make" is a perceptually less salient word for children. They may hear "make a group" as /meikəgru:p/. There are some limitations to note on this analysis, as follows:

(1) The tense aspect (such as "say, says, said") is supposed to be different for children; however, they are treated as the same word in this analysis.

(2) The auxiliary verb "do" that is included in interrogative questions such as "Do you *X*?" is not counted when determining verb frequencies. "Do you *X*?" is considered a language slot that is utilized when teachers and children want to form questions.

(3) Not only verb phrases (e.g., *get* a card), but also a verb with a slot (e.g., *get* into pairs) are counted when a verb is used in a phrase.

(4) Copulas such as "is" or "are" are not targeted in this analysis.

(5) Verb phrases are categorized by token and type frequency and compared with the token frequency of verbs in the BNC and KUBEE 1850 (Ishikawa, 2006).

Despite those limitations, children can keep phrases mostly in their short-term memory as the whole chunks so that the input frequency of verbs within each lesson is also counted to see the usage of verbs in a communicative context.

Ninio (1999) suggests noticeable perspectives of verb acquisition in L1. In Table 4-1, the utterances of children who are 2 years old in the beginning of L1 verb acquisition are classified into four categories, as proposed referring to Ninio's (1999) study.

Table 4-1

Categories of Verbs Uttered Based on L1 Verb Acquisition

Categories of verbs	Examples of verbs
Agent-controlled verbs	break, cut, clean
Creation verbs	make, draw, write
Obtaining verbs	put , take, get , want, give, bring, find,
Perception verbs	hear, see, smell, touch

According to Ninio's (1999) study, obtaining verbs such as "get" or perception verbs such as "see" generally takes place in the early stages of language learning. However, agent-controlled verbs such as "break" usually appear in later periods. In the former, it is

necessary to read the intentions of other people and what words are also frequently uttered by parents. Those obtaining verbs (such as put, take, get, want, and give) are essential verbs for communication, especially in the early learning stages. On the other hand, the latter type of verbs tend to be used for requesting others to do certain concrete actions. Ninio (1999) found that obtaining verbs (e.g., get, give) appear earlier than agent-controlled verbs (e.g., cut, break). Accordingly, the first children's utterance path breaks with the former one; this presumes that L2 learners also hear and imitate the former type of verbs that will be ranked higher in the frequency analysis. Also, it is possible that these verbs may be primitive in the realizing of communicative intention between the teacher and learners.

4.4 Analyses and Results

4.4.1 Analysis 1

The input frequency of verb phrases is shown in Table 4-2. The number of verbs introduced throughout the 2 years of lessons totals 130. The token and type frequencies found in *English Notebook 1* (used primarily in fifth grade EFL classes) and *English*

Notebook 2 (used primarily in sixth grade EFL classes) are also shown. Some verbs appear only once. In Table 4-3, the input frequency of verbs is sorted and ranked according to the degree of frequency. Table 4-3(1) shows the result of the input frequencies of *English Notebook 1,* Table 4-3(2) shows the results of the input frequencies of *English Notebook 2,* and Table 4-3(3) shows the frequency of verbs in terms of the data of the language corpora. Here, the higher ranked verbs and verb phrases extracted from the analysis are compared with the language corpora.

In the top 10 token frequencies of *English Notebook 1* (see Table 4-3(1)), the verbs, like (160), study (69), have (54), say (32), draw (31), put (26), and go (25) are shown. Other verbs in the top 20, including take, play, want (including "want to"), do, see, and ask, are shown.

In the top 10 token frequencies of *English Notebook 2* (see Table 4-3(2)), the verbs, play (119), go (84), want (mainly "want to", 74), say (52), pull (45), like (38), make (31), and do (28) appear. Other verbs in the top 20 include write, have, draw, eat, take, get, put, and ask.

Comparing the token frequency of verbs in both versions of *English Notebook 1 and 2* to the language corpora BNC and KUBEE, which is shown in Table 4-3(3), several verbs seem to display similar degrees of frequency, as follows:

・do, get, go, have, know, like, make, play, say, see, take, want

Note. The tense or conjugation of verbs is included and represented forms. These words are displayed in alphabetical order, not by frequency rank.

Table 4-2

Input Frequencies of Verb Phrases in English Notebook 1 and 2

	English Notebook 1	*English Notebook 2*	Total Number of different Verb
The Total Number of Token Frequency of Each Verb	1049	995	130
The Total Number of Type Frequency of Each Verb	499	451	

Table 4-3

Input Frequencies of Verbs in English Notebook 1 and 2 and Language Corpora

Rank	Table 4-3(1) Rank of Token and Type Frequency *English Notebook 1*	Token	Type	Table 4-3(2) Rank of Token and Type Frequency *English Notebook 2*	Token	Type	Table 4-3(3) Rank of Token and Type Frequency in Language Corpora BNC	KUBEE
1	like	160	38	play	119	29	is	is
2	say, says, said	42	31	say, said	52	27	was	do
3	have, has, had	54	26	like	38	24	be	go
4	make	38	23	make	31	22	are	have
5	draw	31	15	have	19	16	have	say
6	want, wants, want to	19	15	do, did , doing	28	16	had	get
7	listen	35	11	want, want to	74	16	said	like
8	go	25	11	write	21	15	like	know
9	put	26	12	see	23	14	see	see
10	do, did	19	11	draw	18	11	know	come
11	study	69	10	help, helped	23	10	get	laugh
12	write	22	10	pull	45	8	made	think
13	find	15	10	swim	19	8	did	look
14	look	32	9	put	14	8	work	make
15	take, takes	20	9	ask	13	8	think	take
16	guess	13	9	sing	13	7	being	want
17	ask	12	9	eat	16	5	go	tell
18	get	10	7	get	15	4	got	play
19	change	9	7	take	15	4	make	use
20	know	8	7	turn	14	4	take	give

Note. The rank is sorted based on type frequency.

In the top 10 type frequencies of *English Notebook 1* (see Table 4-3(1)), the verbs, like (38), say (31), have (26), make (23), draw (15), want (15), put (12) , listen (11), go (11), and do (11) appear. Other verbs in the top 20 include write, take, ask, change, know, and eat.

In the top 10 type frequencies of *English Notebook 2* (see Table 4-3(2)), the verbs, play (29) , say (27) , like (24) , open (24) , make (22) , want (16) , do (16) , have

（16）, go（15）, and write（15） appear. Other verbs in the top 20 include write, have, draw, eat, take, get, put, ask, and write.

The type frequency of verbs in *English Notebook 1 and 2* to the language corpus BNC and KUBEE, which is shown in Table 4-3, several verbs seem to display similar degrees of frequency, as follows:

・ do, go, have, know, like, make, play, say, see, think, want

Note. The tense or conjugation of verbs is included and represented in forms. These words are displayed in alphabetical order, not by frequency rank.

Table 4-3 shows the degree of token and type frequencies; there are some verbs with a higher rank that are similar to language corpora ranking (e.g., do, go, have, know, like, make, etc.) These verbs form the core of sentence structures and language slots in the early stages of EFL and are the type of verbs that children can output imitatively. However, there are some verbs with a lower rank of frequency in *English Notebook 1 and 2* (such as take, get, go, know, think, use, and give) that have a higher rank in the language corpora. Comparing the input frequency of the verbs in *English Notebooks*

with the utterance of children aged 2 in L1 verb acquisition, which may reflect the input given by their parents, obtaining verbs (such as put, take, get, want, give, and bring) and perceptional verbs (such as hear, see, smell, and touch) are insufficient in *English Activities*. The results shown in Table 4-3 indicate that those common verbs, found in both *English Activities* and the language corpora, are crucial for proper EFL learning. The following list of verbs is so essential that these verbs need to be incorporated in the language classroom by gaining type frequency:

・do, draw, get, go, have, know, like, make, play, say, see, take, think, want, write, and so on.

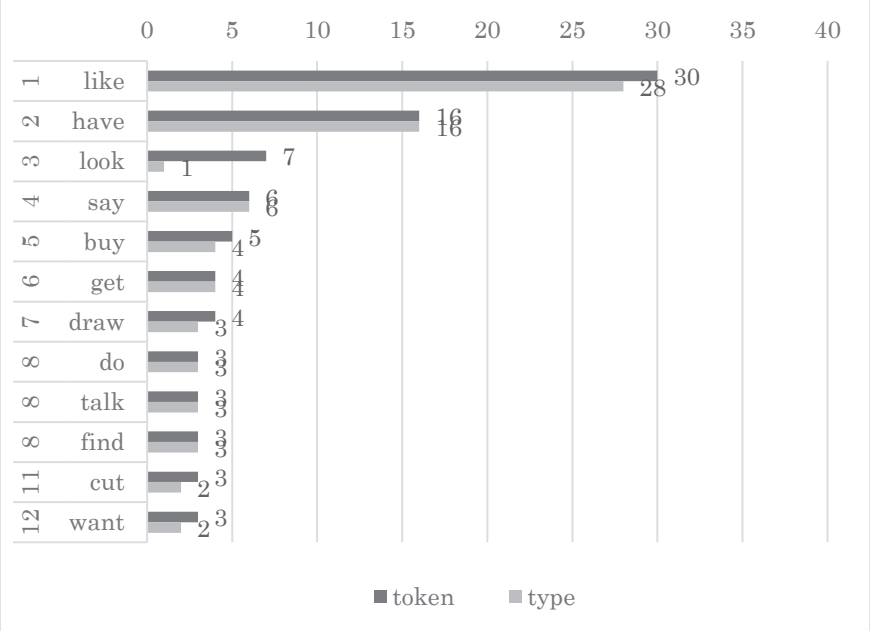
4.4.2 Analysis 2

To observe verbs and their usage in the language context of *English Notebook 1 and 2*, in which sound-meaning connections can develop, we can take a closer look at the individual lessons. The use of verbs depends on the context and topic in a situational scenario. For instance, in lesson 5 of *English Notebook 1,* there is a section titled "I Don't Like Blue" in which children role-play as shopkeepers and clients in a clothing store. The

verbs like (token 30/type 2), have (token 16/type 16), get (token4/type4), say (token 6/ type 6), and buy (token 5/type 4), which are common verbs used in a clothing store, have a high rank for both their token and type frequency. The usage frequencies of verb phrases that are used in a situational context (in this case, the clothing store scenario) are demonstrated in Figures 4-1 and 4-2. For instance, in the lesson E1-L 5, the language slot for "*like X*" is in the following sentences: "I *like X"* (11), "I don't *like X*" (9), "Do you *like X*?" (8), and "I *like that*" (1). Another language slot for "*have X"* is in the following sentences: "I *have a X*" (7), "Do you *have a X*?" (6), and "I don't *have a X*" (3). Another language slot that includes "*get X"* is in the following sentences. "*Get a card*" (1), "*Get five kinds of X*"(1), "What did he *get*?" (1), and "Get into pairs."

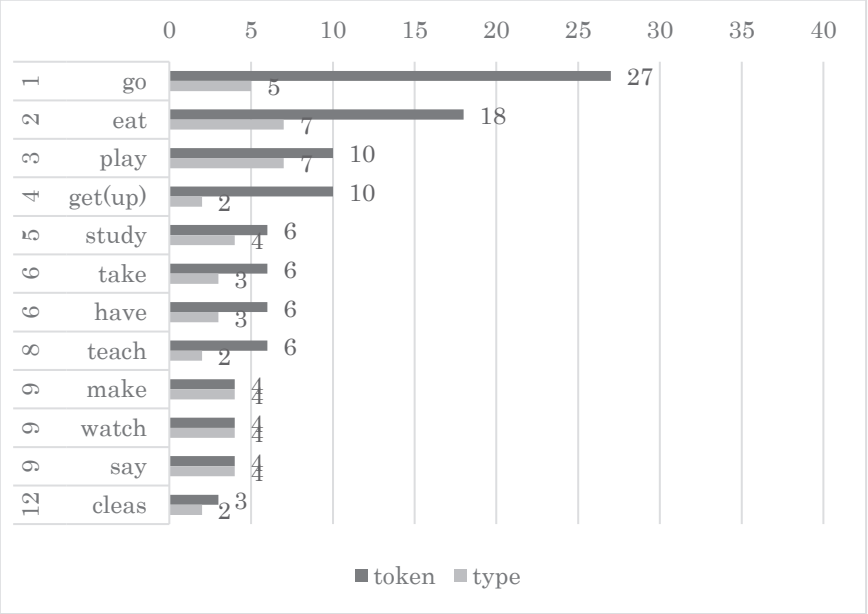
In the lesson E1-L5 (Figure 4-1), there may be abundant opportunities for children to hear several verbs within the slot. The essential verbs such as "*like X"* and "*have X*" and their corresponding negatives "*don't like X*" and "*don't have X*" are shown. Children are expected to use the slots and successfully form the schema of these verbs because the activities of the lesson involve ample interaction and practice of verb usage. The teachers can introduce children to ethnic clothing, have them describe other children's clothes/costumes, and role-play buying and selling clothes in a store. Children are often asked questions by teachers, including "What color do you *like* for gloves?", "Where did

you *get X*?", "Where did the girl *buy X*?", and so forth, which help the children effectively grasp the meaning of the more abstract verb phrases such as "*like*---" and "*get* ---" and "*buy*--" through repetitive usage. The more language activities incorporate language slots by using high token and type frequency of verbs, the more effectively children may develop FMCs successfully.



Note. The horizontal axis is the frequency (times)

Figure 4-1. Token and Type Frequencies in E1-L5 "I Don't Like Blue."

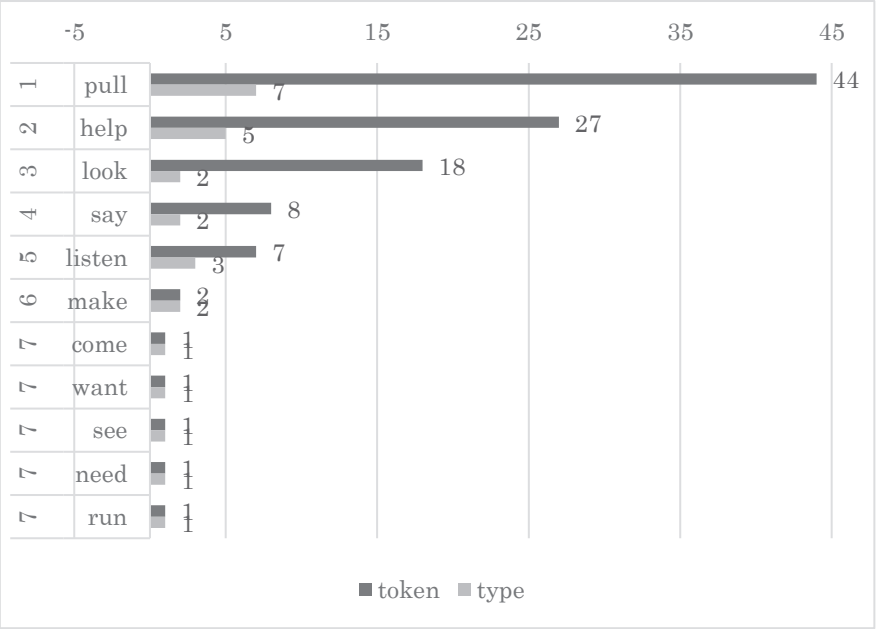


Note. The horizontal axis is frequency (times)

Figure 4-2. Token and Type Frequency in E2-L7,"What Time Do You Get Up?"

On the other hand, the lesson E2-L7 (Figure 4-2) utilizes verbs with lower degrees of type frequency when compared with token frequency, despite including common phrases such as "get up," "go to school," "eat lunch," and "watch TV" that describe everyday routines (see Figure 4-2). For instance, the verbs go（token27/ type5）and teach (token6/type2) appear as formulaic verb chunks (See Figure 4-2). Despite the usefulness of these verbs, children may not be successful in connecting the form to its meaning because the activities of the lesson may provide the type frequency but with a lower frequency. The lesson can provide the whole constructions (e.g., go to school, eat lunch) but give very few opportunities where children can pay attention to a verb within a slot.

However, the drawback of this lesson can be compensated with the teacher's structured input (e.g., *go to school* /*go to hospital, eat lunch/eat dinner*) instead of using a simple repetition of the whole; doing this helps provide more type frequency. In Chapters 6, 7, and 8, in which E2-L7 is the focus of the experimental lessons, we use structured input for this purpose.



Note. The horizontal axis is the frequency (times)

Figure 4-3. Token and Type Frequency in E2-L7, "Please Help Me."

In the lesson E2-L7 (Figure 4-3), more interesting results are found. This lesson involves "The Giant Turnip," the title of a famous Russian folktale and transliterated in the lesson by Uchida (Uchida, 2006). In this story, children hear "Granpa *pulls* the turnip"

and “Granma pulls the Granpa,” in which a part “Grampa,” “the turnip,” or “Granpa” is within a slot “---*pull*---” and is replaced with different words frequently. In this case, even if the children do not yet know the meaning of the word “pull,” the meaning could be successfully learned by hearing the words before and after “pull.” Here, we also see a situational context. Granpa plants a turnip and waits for it to grow large. The verb pull (token 44/ type 7) plays a key role in the story (see, Figure 4-3). There is a phenomenon of shifting the form token to a type one that may trigger children’s finding of language patterns. The major essential point of storytelling is that children not only hear the repetition of the whole constructions, but also find a part within a slot that has a meaningful context. This provides children with abundant opportunities to find language patterns. In Chapter 9, the essence of E2-L8 is applied for creating the author’s original storytelling, where the teachers can use a structure input naturally for this purpose.

4.5 Considerations

From the results of Analysis 1 and based on their use, we can see the following points about the quantity of the exemplar verb phrases in *English Notebook 1 and 2*:

(1) There is a certain number of verb phrases that are used frequently in both the language corpora and L1 verb acquisition (such as do, go, have, like, make, play, and say). There are also some creation verbs and perception verbs that are commonly used in everyday expressions (such as draw, study, eat, and hear).

(2) Verbs that appear in the language corpora with higher frequency grades are also similar to those found in *English Notebook 1 and 2* (such as do, go, have, like, make, play, and say). On the other hand, verbs that appear in the language corpora with higher frequency grades but that are not in *English Notebook 1 and 2* (get, give, know, take, think, etc.) are usually obtaining verbs and perception verbs whose meanings are difficult to express with gestures. The former types of verbs are essential for the most basic and common interactions with others, while the latter types of verbs are also essential but tend to not paid attentions in the lessons so these verbs should not be neglected in instruction. There are certain possibilities when using both the former and latter types of verbs for gaining type frequency through a teacher's structured input in the language classroom.

(3) Verbs with a higher type frequency (such as like---, say---, have---, make---, draw---, play---, do---, want---, get---, etc.) are used by connecting many different words together (such as like blue shirt/like yellow shoes, get a card/get five kinds of---),

which indicate that children may pay attention to a part of a slot and find language patterns.

From the results of Analysis 2, we found that children's cognitive processes can effectively take place in scenarios. These scenarios include verbs that allow children to convey their wants (e.g., like, have, buy, want, need), verbs used for requests (e.g., get, give, take, draw), verbs that express everyday activities (e.g., play, eat, teach, study), verbs are connected with different words (e.g., put, take, look, say, listen), and verbs that are utilized in the stories within *English Notebook 1 and 2* (e.g., pull, help). We expect children's cognitive process of learning verb phrases in *English Activities* to be accomplished by using those *English Notebooks* in which some verbs are ranked higher as well as in language corpora, however, there is still a lot remains to be done for improving interactive language activities for gaining both the token and type frequency by using the teacher's structured input. Based on the data extracted from *English Notebook 1 and 2,* we recognize that the basic essential verbs are used in the classroom lessons, but there is a drawback in that some verbs with a high frequency in the language corpora are merely used in *English Activities* (e.g., take, get, go, know, think, use, and give). Therefore, the present study focused on providing verbs with a high frequency in

the language corpora (e.g., take *X*, get *X*, want *X*), verbs that may help the children detect language patterns (give *X Y*, give *Y* to *X*), and morphological structures (e.g., *-ing*, *-ed*). We keep the tendency of insufficient input frequency of verbs in mind and weigh them, applying the results in this chapter for planning the experimental *English Activities* shown in Chapters 5 to 9.

Chapter 5

Effectiveness of *ATM-V* in Helping Children Understand the Meaning of Verb Phrases (age 12)

5.1 Introduction

The introduction of verb phrases in *English Activities* should primarily be carried out by applying FonF (such as using a structured input) in an attempt to gain input frequencies that are appropriate for the varying categories of verbs in the classroom. As we introduced in Chapter 3, to teach verbs and verb phrases, the teacher often uses a picture of the verbs, TPR, or a story where children are able to guess the meaning of the verbs. However, very little research on whether children can establish the FMCs for verbs in an EFL classroom has been conducted, and there is a tendency to focus on teaching nouns and adjectives prior to other English words.

Therefore, in this chapter, to implement and aid the experimental lessons, we attempt to develop audio-visual materials for teaching verb phrases (audio teaching

materials of verbs: *ATM-V*); a picture clipped out from the materials and its corresponding sound will also be used to assess the extent to which children can establish the FMCs for verb phrases. In this chapter, we observe the effectiveness of using the *ATM-V* for understanding verb phrases in a comparative study where we apply the *ATM-V* in one case and do not in the other.

5.2 Development of the *ATM-V* for Verbs

5.2.1 Contents of the *ATM-V*

A list of 50 verbs (see Appendix 4-A) that are commonly used in communicative exercises between the students and teacher and among children was found in the analysis within *English Notebook 1 and 2* and the language corpora (KUBEE1850 and BNC) in the former chapter. Twenty of these verbs were selected for introduction through the *ATM-V.*

The verbs are visually represented, and examples of the image's associated verb phrases (V-O combinations) are annotated according to the cognitive linguistics advocated by Yoshimura (2004), the dictionary edited by Konishi and Minamide (2001),

and the framework of pictures presented by Onishi and Mcvay (1999). Each animation slide was designed to be user-friendly for the children. The 20 verbs include ones that may be difficult to guess their meaning by just using the TPR or the use of gestures (e.g., have, get, put, take, and make) and other verbs that possess abstract concepts (i.e., want, need, think, and leave). An object (such as "a cake") shown in the moving picture can hint at the meaning of an unknown verb phrase (e.g., make a cake) in which "a cake" is a very familiar word for children while "make" is unknown. However, this allows the children to guess the meaning of the whole verb phrase by watching the scene with sound. These objects are carefully selected from words that may already be familiar to the Japanese learners. The following is the 20 verbs used in the *ATM-V*:

・break, bring, change, come, cut, draw, drink, get, go, have, leave, make, need, put take, say, see, smell, think, and want

The results of the analysis in Chapter 4 were also applied here for selecting these verbs. We found several of the 20 verbs were difficult to guess the meaning of (e.g., get, have, need, say, think, want, and so on).

Using the *ATM-V* involves backdrops with situational scenes and agents that visually perform the actions associated with each verb. The agents are animated characters named Mr. Carrot (the teacher), a boy named *Pan*, and a girl named *Pukin*. (We used the sound "Pumpkin" for the main characters). The characters perform gestures or carry out actions with objects that visually express the verbs to assist the learners in learning these verbs. The sequential animation of verbs and verb phrases is done through approximately 20-second clips using *Adobe Flash* software. The clips can be replayed as needed. The following are the key concepts of the *ATM-V*:

(1) The index page is shown (see Figure 5-1)

(2) The backdrop with the situational scene is shown.

(3) Actions or objects are visually shown to allow children to discover the meanings of verb phrases.

(4) Verb phrases are also expressed through audio sources when cued.

(5) Sample English sentences that include target verbs are also presented as an option.

A featured characteristic of the animation is its presentation of sequential processing. In Figure 5-2, *Pukin* looks up at the sky when a rain drop falls, and then, it

starts to rain. She comments that she should have brought an umbrella. Figure 5-3 uses spatial positioning, where *Pan* appears to approach the screen from a distance. As he enlarges, the backdrop shrinks. The *ATM-V* then focuses on a particular object, in this case a flower, which comes into the possession of *Pukin.* The merit of the *ATM-V* is its use of grammar concepts not only with verbs, but also prepositions, adverbs, and so on, along with its ability to demonstrate these concepts in a way that is interactive, fun, and easy to observe.

The *ATM-V* can convey abstract language concepts that cannot truly be expressed through still pictures. Although most verbs are polysemous, most have a core definition or meaning associated with them. For instance, as shown in Figure 5-2, the animation sequence "need an umbrella" presents the sequential processing "need *X*." As shown in Figure 5-3, the animation sequence "*give X to Y*" presents the core "image" of give, which is defined as "to transfer something from one person to another." As shown in Figure 5-4, the animation sequence "get a gold medal" presents the core image (definition) of "*get X,"* which can mean "achieving something through effort." The animation sequence simulates the process of L1 verb acquisition and schema formation of verbs by learners. The animation was created based on the assumption that children can learn word

meanings and notice language patterns within verb phrases. There are some conditions and assumptions on the proper use of the *ATM-V*, as follows:

(1)The animation is introduced after the children undergo a certain amount of exemplar-based learning.

(2)Children should listen to the whole verb phrases, for example, "make a cake."

(3)Children may try to work with V-O combinations as the initial language slot, such as "*X* a cake" while watching the backdrop and objects.

(1) Follows (3), with new language slots utilizing learned verbs. For example, if the verb "make" is learned, a slot "make *X*" can be schematized. We define the order of instructing verb phrase with *ATM-V* as "exemplars with their images-whole verb phrases-schema formations of verbs"

Assuming the functions are realized, the *ATM-V* would function as a trigger to draw children's attention to the FMCs of verbs, as well as eliciting the schema formations of verbs. Examples captured from the *ATM-V* are shown below.

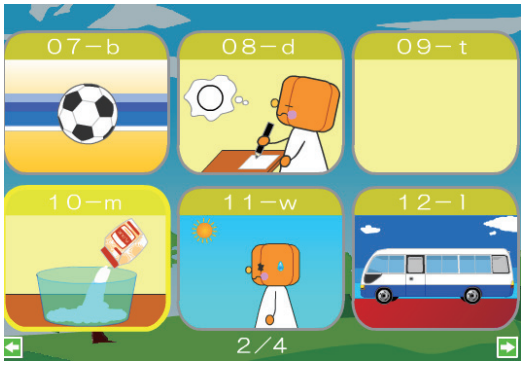


Figure 5-1. Index of "Mr. Carrot's 20 Verbs"

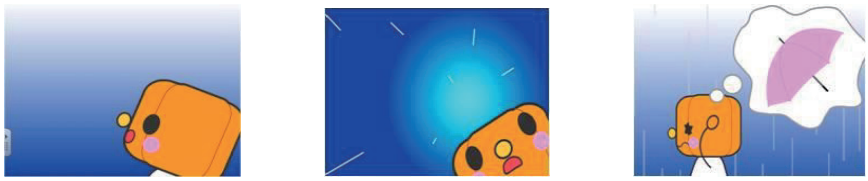


Figure 5-2. Sequential Processing of the Verb Phrase "need *X*"

Figure 5-3. Spatial Positioning of the Verb Phrase "give *X* to *Y*"

*Figure 5-4.*Core Image of the Verb Phrase "get *X*"

5.2.2 Positioning of the *ATM-V* in the Research

The goal of using the *ATM-V* is to assist children in finding language patterns, helping them pay attention to a section within a slot and learn abstract verb concepts through the language slots within verb phrases; specifically, this learning is taking place in an EFL environment and is simulated by L1 verb acquisition methods. As we explained in Chapter 3, the animations of the *ATM-V* were made to induce the process of the schema formation of verbs. First, children have to know the pattern "--- an umbrella," which we suppose is "a reverse slot." as we explained in Chapter 2. Then, after accumulating the sequence, the children begin to pay attention to "---", or the part of a verb. This gives an opportunity for children to find a slot such as "get ---." The *ATM-V* was produced to assist with the latter idea; however, the use of it is not the primary goal of our experiment; rather, we aim to aid the teacher's structured input.

The author (Kashiwagi, 2017) conducted a case study on children's FMCs of five verb phrases and the effectiveness of the *ATM-V* (a trial version) for helping children at an elementary school understand the meanings of verb phrases in *English Activities*. In the study, second grade children (N=31) were successful in making FMCs for verb phrases (e.g., see ---, smell ---, think ---, say ---, or catch ---), obtaining correct answers

approximately over 80% of the time (except for “think” with 70%); these connections were made through 10 storytelling lessons. Each of five verbs was included in the story and the interactions between the teacher and children. Afterwards, a trial version of the *ATM-V* was used; the children showed a statistically significant increased score with three verb phrases (say ---, think ---, and catch ---) but not with two verb phrases (see --- and smell ---; Kashiwagi, 2007a. p.56). From the results, the children were shown to be able to establish FMCs without using the *ATM-V*; however, with the help of the *ATM-V* they may pay more attention to verb phrases that are supposed to be difficult to guess the meaning of through only storytelling (such as say ---, think ---, or catch ---).

In short, the *ATM-V* may induce the process of schema formation of verbs and trigger children to pay attention to language slots; however, children are, overall, able to operate their cognitive ability through the procedures needed to form FMCs without using it. The role of the *ATM-V* can be explained as an incorporated visual teaching material, the same of which can be said for the picture cards, broadly used in *English Activities,* representing children’s retention with a flash image in a certain context. After these series of experiments, the *ATM-V* can be used as a tool for evaluating children’s FMCs.

5.3 Experiment on the Form-Meaning Connections of Sixth-Grade Children

5.3.1 Aims

We attempted to observe sixth-grade children's FMCs for verb phrases in the classroom lessons in which the teacher used structured input based on a FonF approach (using structured input). The results show that sixth-grade children were able to establish the FMCs for verb phrases in the first half of the experimental lessons in which the *ATM-V* was used. The materials were also used in Chapters 5 to 8. We summarized the reason of selecting the utilized 20 verbs, the aims of development, and how to assess the extent to which children can establish the FMCs for verb phrases during the lessons. The results reveal how sixth-grade children would be basically mapping the meaning with the form and may predict the extent to which the *ATM-V* can affect the score and the appropriateness as a tool of observation of children's verb acquisition. Here, we need to clarify whether *ATM-V* may influence on children's FMCs of verbs or not. The pilot study may give us an indicator of whether we should use it when examining children's schema formation of verbs.

5.3.2 Participants

The participants were sixth graders (*N*=111). These children were divided into two groups: the experimental group (*Ex* group, 55 children) and Non-experimental group (*Non-EX* group, 56 children). The children were separated based on examining the scores they obtained in the Pre-Test, which was conducted prior to these lessons. Two groups were formed based on the results of the listening test, which consists of 11 questions (Pre-Test, See Table 5-1 and Appendix 5-A). The test scores were distributed normally, and the *F* ratio of the test showed no significant difference between the two groups (F=1.12, df=109, p> .67). Therefore, a parametric test was used. Here, *t*-tests revealed that the difference between the groups was not significant (t=.154, df=109, p= .154, *n.s.*).

In this study, among the participants, 15 had received *English Activities* prior to participating. There were a total of 10 *English Activities* in the school year for sixthgraders before the introduction of the *2008 Course of Study*. The lessons had been taught in English only with a team consisting of a native English speaker (ALT), Japanese teacher of English (JTE), and a home room teacher (HRT).

Table 5-1

Descriptive Statistics of Pre-Test and the Results of the Unpaired t-test

EX group (*N*=55) and *Non-EX* group (*N*=56)							
	M	*S*D	*Min*	*Max*	*t*-value	*p*-value	
EX group	6.9	1.14	2	10	0.154	0.154	*n.s.*
Non-EX group	6.91	1.07	3	11			

5.3.3 Procedures

The current case study consisted of four phases and each phase having two lessons so that total number of lessons was eight (See Table 5-2). The lessons consisted of English instruction on several verb phrases through *English Activities* with the TPR and with games utilizing gestures (See Table 5-2). The targeted verb phrases based on the content of the lessons (smell---, break---, wash---, need---, and drink---) were used approximately five times and repeated by showing gestures or teaching materials. Two tests, Mid-Test 1 and Mid-Test 2, were given to the children following the conclusion of Phases 2 and 3, respectively. Mid-Test 1 was given to measure both groups' understanding of the target verb phrases introduced in Phase 2, with both groups having received the same teaching methods. Mid-Test 2, on the other hand, was given after Phase 3, during which the *Ex* group children had utilized the *ATM-V* in *English*

Activities while the *Non-EX* group continued with *English Activities* but without the *ATM-V*. The test was given to measure the children's understanding of the target verb phrases introduced during Phase 3, but this time with the additional goal of determining the *ATM-V*s effect in assisting understanding. Both Mid-Tests 1 and 2 were descriptive tests where the children described (in their native Japanese) what they had heard and understood from an audio recording of English verb phrases spoken by an ALT. The scale used for measuring scores is shown in Table 5-3. The scores measure how accurately the children identified the meaning of the target verb phrases and whether the verbs and objects were included in Japanese descriptions. A final Post-Test was then conducted after Phase 4, covering all the material in the preceding phases. The Post-Test included 17 verb phrases (Appendix 5-B) and drew on the test materials from *Jidou Eiken*, as well as the Pre-Test. We carefully selected questions that contained the verb phrases that corresponded to the phrases children had been exposed to in the lessons (such as "drink juice," "play the violin," "wash my eyes," "take a shower," and so on). In some questions, the objects were sometimes changed to create a variety of situational responses (e.g., wash *my hands* →wash *my eyes*).

Table 5-2

Procedures of Lessons and Tests

	EX group *ATM-V* is used in the later half	*Non-EX* group *ATM-V* is NOT used in the later half
Phase 1	Activity 1: Interaction in games	
Pre-Test 1	Listening test with English sounds (marking the correct answers)	
Phrase 2	Activity 2: Guessing the verb phrases by listening to the teacher talk Playing the gesture game with the TPR	
Mid-Test 1	Listening test with English sounds (describing the meaning in Japanese)	
Phrase 3	Activity 3: Talking about daily routines by using picture cards and the *ATM-V*	Activity 3: Talking about daily routines by using picture cards only
Mid-Test 2	Listening test with English sound (describing the meaning in Japanese)	
Phrase 4	Activity 3: Talking about daily routines by using picture cards and the *ATM-V*	Activity 3: Talking about daily routines by using picture cards only
Post-Test	Listening test with English sounds (marking the correct answers) Verb phrases are the focus	

(Adapted from Kashiwagi, 2007b, p.64)

5.3.4 Results

Table 5-3 indicates the scales for measuring the scores of *Mid-Tests 1 and 2*. Table 5-4 shows the descriptive examples of answers given by the children in Japanese on Mid-Tests 1 and 2 for both groups, and the five targeted verb phrases and the Japanese

descriptions given by children are quoted from the author's 2007 study (Kashiwagi, 2007b). Some of children's descriptions are appropriate inferred descriptions while others are inferred but inappropriate descriptions. This might represent the children's thinking processes (See Table 5-4).

Table 5-3

Scale for Measuring Scores of Mid-Tests 1 and 2

Scale	Descriptions Given	e.g., 花を見る (see the flower)
1	No answer given, or the answer was completely incorrect.	空白（a blank）
2	The answer contains either a correct verb or object.	きれいな花 (a beautiful flower)
3	The answer contains both a verb and an object, but it has no relation to the target answer.	花をとる (pick the flower)
4	The answer contains both a verb and an object. The concept is close to the target answer but still incorrect.	花を見つける (find the flower)
5	The answer contains both a verb and an object and is the correct target answer.	花を見る (see the flower)

(Adapted from Kashiwagi, 2007, p.64)

Table 5-4

Descriptive Examples of Answers Given by the Children in Japanese on Mid-Tests 1 and 2 for Both Groups

5 Verb phrases	Mid-Test 1	Mid-Test 2
smell (smell the noodles)	ラーメン ラーメンの匂い ラーメンを食べる ラーメンがおいしそう ラーメンをすする	ラーメンの匂いをかぐ ラーメンのいい匂い ラーメンを食べる
break (break the window)	窓を割る 窓を割った 窓が割れる	窓を割る 窓を割った 窓をこわす
wash (wash my face)	顔を洗う シャンプー	顔を洗う 洗顔
need (need an umbrella)	傘がない 傘を忘れる 雨が降って傘をさす 傘がなくて困る 傘を忘れた 傘をさす	傘がほしい 傘がいる 雨が降って傘がない 傘が必要 傘をさす
drink (drink juice)	ジュースを飲む 飲み物 飲むジュース ドリンクジュース 飲み物	ジュースを飲む 飲み物 ドリンクを飲む

(Adapted from Kashiwagi, 2007, p.64)

Note. The descriptions were written by children in Japanese.

The results of Mid-Tests 1 and 2 serve as a comparison of the mean scores of the two groups between the *Ex* group (Mid-Test 1: *Mean*=19.53, *SD*=4.70; Mid-Test 2: *Mean*=22.24, *SD*=3.67) and *Non-EX* group (Mid-Test 1: *Mean*=19.71, *SD*=4.47; Mid-Test 2: *Mean*=21.37, *SD*=3.91). The scores of Mid-Tests 1 and 2 were distributed normally, and the *F* ratio of the two tests showed no significant difference between the two groups ($F=1.13$, $df=111$, $p>.05$). Therefore, a parametric test was used. The *t*-tests revealed

that the difference between the groups (t=0.16, df=111, p> .05, *n.s.*) and between Mid-Test 1 and Mid-Test 2 (t= 1.19, df=111, p> .05, *n.s.*) were not significant. Table 5-5 indicates that when using the Wilcoxon Signed-Tanks test, the scores increase between Mid-Test 2 and Mid-Test 1 for each verb. Figures 5-5 and 5-6 compare the data visually. The graphs show that for the *Non-EX* group, there were similar increasing rates between Mid-Test 1 and Mid-Test 2 for all the verb phrases (e.g., smell, break, need) while for the *Ex* group, these increasing rates varied between Mid-Test 1 and Mid-Test 2 for certain verb phrases (e.g., smell, wash, need). According to Figures 5-5 and 5-6, the *EX* group clearly improved on the score for "need" better than *Non-EX* group.

For the *Ex* group, significant differences were found for the following verb phrases: need2-1(z=4.64, **p< .01, r= .63, large), smell2-1(z=3.39, **p< .01, r= .46, medium), drink2-1(z=2.29, *p< .05, r= .31 medium), and wash2-1(z=2.19, *p< .05, r=. 30, medium). The only verb that lacked a significant difference was break2-break1 (z=1.8, p> .05, *n.s.*).

For the *Non-EX* group, significant differences were found in the following verb phrases: smell2-1(z=3.54, **p< .01, r= .47, medium), need2-1(z=2.74, **p< .01, r= .37, medium), and break2-1(z=2.52. *p< .05, r= .34, medium). Other verbs that lacked a significant difference was drink2-1(z=0.88, p> .05, *n.s.*) and wash2-1(z=1.08, p> .05, *n.s.*).

Table 5-5

Difference Between Mid-Test 2 and Mid-Test 1 for Each Verb and the Results of the Wilcoxon Signed-Ranks Test (paired-t-test)

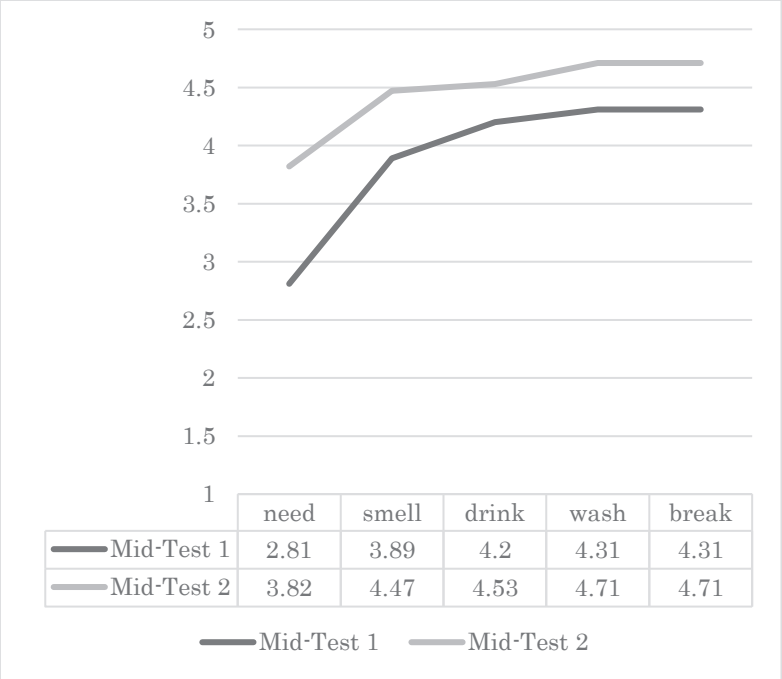
Group	Value	Smell2-1	Break2-1	Wash2-1	Need2-1	Drink2-1
Ex	*z* value	**3.39	1.8	*2.19	**4.64	*2.29
	p value	0.0007	0.0712	0.0284	0	0.0219
	effect size *r*	.46	.24	.30	.63	.31
		medium	small	medium	large	medium
Non-EX	*z* value	**3.54	*2.52	1.08	**2.74	0.88
	p value	0.0004	0.0117	0.2787	0.0061	0.3795
	effect size *r*	.47	.34		.37	
		medium	medium		medium	

Note. *$p < .05$, **$p < .01$, *r*: effect size

From these results, the children in both groups were able to improve word guessing due to the frequency of input in the classroom instruction without using the *ATM-V*. The improvement of guessing the verb phrases was demonstrated for the following verbs, which are shown in order of rising score value: smell, need, and break. It may be that the children were actively thinking of the word's meaning, such as need. However, according to Figure 5-5 and Figure 5-6, the average for the verb need in the *Non-EX* group (3.34) was lower than in the *EX* group (3.82).

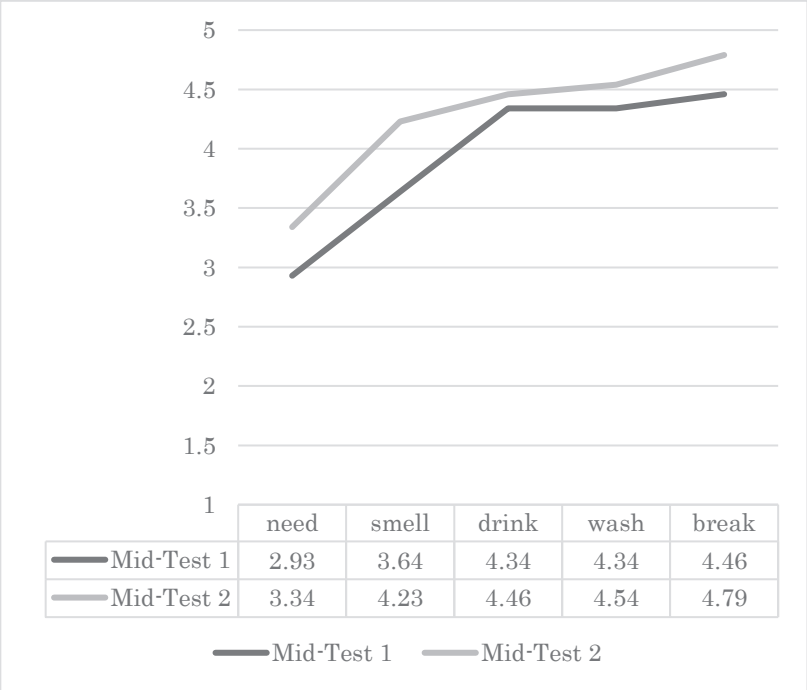
On the whole, the children were good at guessing the verb phrases for both abstract and non-abstract verbs. Overall, the children tended to improve on their scores from Mid-Test 1 to Mid-Test 2. That is, they became better at understanding the

meanings; they seemed to have not given up hope of finding the word meaning as far as the appropriate input were given. However, the fact that *EX* group increased the score for the verb need indicates that the use of the *ATM-V* might have triggered children's FMCs for abstract verbs.



Note. The Y axis is the scale (1~5) refigured based on the Outset. Adapted from Kashiwagi (2007, p.66).

Figure 5-5. EX group' Average Score Value to Verb Phrases on Mid-Tests 1 and 2



Note. The Y axis is the scale (1~5) refigured based on the outset data. Adapted from Kashiwagi (2007, p.66).

Figure 5-6. Non-EX Group' s Average Score Value to Verb Phrases on Mid-Tests 1 and 2

The final Post-Test was conducted at the end of the procedures, looking out over the extent to which the children were able to understand the verb phrases embedded in the context. The results are as follows: *Ex* group (*Mean*=17.36, *SD*=1.30) and *Non-EX* group (*Mean*=17.76, *SD*=.97). The Post-Test was distributed normally, but the *F* ratio of the test showed a significant difference between the two groups (F=1.78, df=109, $p < .05$). Therefore, Welch's *t*- test was used (t=-1.79, df=111, p= .076, *n.s.*). The results of the

Post-Test did not show the superiority of the *EX* group; rather, it was the opposite. The *Non-EX* group was slightly better than the *EX* group.

Table 5-6

Descriptive Statistics of Post-Test Between EX group and Non-EX group and the Results of Welch's t-test (unpaired t-test)

EX group(*N*=55) and *Non-EX* group (*N*=56)							
	M	*SD*	*Min*	*Max*	*t*-value	*p*-value	
EX group	17.36	1.3	5	17	-1.79	.076	*n.s*
Non-EX group	17.76	.97	7	16			

Note. The score range is from 0 to 19.

Overall, the children tended to improve on their scores from Mid-Test 1 to Mid-Test 2 and obtained high scores on the Post-Test. That is, they became better at understanding the meanings better through repeatedly listening to the verb phrase in the context. The teacher's structured input and classroom instruction affected both groups' listening level. However, Mid-Test 1 and Mid-Test 2 were descriptive tests, while the Post-Test was a selective test (multiple choice, and the verb phrases were embedded into the context), so we presume that the Mid-Tests revealed more detail regarding the children's improvement of FMCs for verb phrases.

5.3.5 Discussions

In both the groups, the sixth-grade children were successful in establishing FMCs for verb phrases during a total of 8 hours of lessons. Most of the children were able to recall knowledge from memory to describe (in their native Japanese) what they had heard from English audio recordings. Several of the children demonstrated that they understood verb phrases, even with words that were difficult to demonstrate with gestures or contexts, such as need. In other words, the children demonstrated the cognitive ability to identify the meanings of the verb phrases. As seen in Table 5-5, the descriptions of V-O combinations improved in accuracy on Mid-Test 2 from Mid-Test 1 for both groups. However, as seen in Table 5-4, some of the children struggled in identifying some of the meanings（See Table 5-4, 傘が降って傘がない; It has started to rain, but I don't have an umbrella). This description is quite good for explaining the situation in Japanese; however, it mostly focuses on the object (umbrella) and the situation (starting to rain) and does not assert the exact meaning. On the other hand, some of the children's descriptions asserted the exact meaning（See Table 5-4, 傘が必要；need an umbrella）. We can presume that there are cases where FMCs may not take place, and these children need a certain trigger.

From the results of the Post-Test, both groups were able to grasp the meanings of verb phrases better than on the Pre-Test. For instance, *EX group* had a mean of 17.36 out of 19, while the *Non-EX group* had the mean of 17.76 out of 19. Both groups gave the correct answer more than 91% of the time. However, we should keep in mind that only a few children—eight out of the 55 from the in *Ex* group and 10 out of 56 from the *Non-EX* group—failed to identify the meaning of need over the course of the eight lessons and one the three tests (Mid-Test 1, Mid-Test 2, and the Post-Test), which comes out to approximately 15% or 18% of the participants, respectively. There seems to be differences in the way the children attempted to understand verb phrases. As we noted in Chapter 2, the current study also reveals the existence of individual differences among children, such as their phonemic coding and language-learning abilities.

The *ATM-V* had a noticeable effect on the learning of abstract verbs such as need, whose meaning cannot be conveyed through only gestures or contexts. On the other hand, the *ATM-V*s effect on verbs that can be conveyed through gestures or classroom instructions, such as drink, wash, or break, was not as significant. At the end of the procedure, the children were asked for their impression on the *ATM-V.* Several children answered that it had been very humorous and also helped clear up some confusion they had when working through the new learning material.

5.4 Conclusion

In summary, we developed the *ATM-V* by selecting 20 basic verbs out of the 50 from the analysis in Chapter 4. The *ATM-V* might have helped children pay closer attention to verb phrases and form slots by watching moving pictures that represented the theoretical concepts of the schema formation of verbs. The children might have kept the retention as an image of verb phrases in terms of the instructive of order: exemplars with their images-whole verb phrases-schema formations of verbs. After the lessons, we were able to use a snapshot to create the tests in the current study, which helped to remind children of the sequence of the actions and their schema of verbs.

From the results of the experimental lessons, the sixth-grade children were successful in establishing FMCs for verb phrases in the classroom lessons in which the teacher used structured input based on a FonF approach. The scores shown in the Post-Test did not reveal a significant difference between the two groups, meaning that the children performed well with or without using the *ATM-V*. However, there were noticeable differences in the scores for Mid-Test 1 and Mid-Test 2 between both groups, particularly for abstract verbs such as need, which was not easy to infer the meaning of

through gestures or pictures. The descriptions given by the children on Mid-Tests 1 and 2 demonstrated that they initially grasped whole verb phrases as formulaic chunks and later might have formed schemas or segments within these chunks. One thing we can be certain of regarding the *ATM-V* is that it could facilitate the understanding of abstract verb phrases. Also, the *ATM-V* eased any anxiety children may have had in the initial stages of learning a new language, creating a learning environment that was both fun and possessed meaningful context in *English Activities*.

In Chapters 6, 7, and 8, the *ATM-V* will continue to be explored as a tool for evaluating children's FMCs and for other concepts regarding children's FMCs for verb phrases. However, with the current comparative study we came to be able to predict how much the *ATM-V* affects children's FMCs. The effectiveness of it on FMCs is supposed to be minimum. In other words, without the help of the *ATM-V*, more than 90% of children might be successful in establishing the FMCs for verb phrases when given these verbs in an interactive classroom. We take the slight influence of *ATM-V* regarding the range of scores into consideration, especially in case of the abstract verbs instructed; however, needless to say, the valuable of development of the *ATM-V* embodies a way to measure the extent to which the FMCs for verb phrases may occur among beginner learners.

Chapter 6

Children's Development of Form-Meaning Connections to Verb Phrases (Age 11)

6.1 Introduction

In this chapter, we analyze how successfully fifth-grade children at *Elementary School A* (about 11 years old and being given about 25 hours of lessons) who underwent English instruction in 2009, which is the year before *English Activities* was introduced, could establish FMCs for verb phrases (V-O combinations) with two views: 1) the perceptual salience of verb phrases when the children hear and encounter the new language properties throughout the sound input and 2) the amount of accumulation of exemplar-based learning which is equivalent to the frequency of input).

First, regarding the influence of perceptual salience, we analyze whether the FMCs vary in their degree because of the perceptual salience, such as the word familiarity within each verb phrase. In Chapter 5, we observed children's verb phrases

during eight lessons. The children were generally successful in establishing the FMCs for verb phrases, but the score of the tests varied among the targeted phrases. The former−the children's success in establishing the FMCs for verb phrases—led us to investigate how perceptual salience may relate to this. The procedures for creating FMCs are ones in which children may operate their cognitive abilities to infer and map the meanings with an English sound form (e.g., draw a square). In Chapter 3, we defined the concept as schema formation of verbs. Accordingly, we suppose that children may perform their cognitive processes actively when they can find a reverse slot (--- a square). In other words, the more children perceive the reverse slot, the greater their chances are of successfully establishing FMCs because they are considered as starting to pay attention to a language slot (*draw X*) and vice versa. As discussed in Chapter 2, perceptual salience is affected by children's L1 knowledge. It seems that the children's fundamental word familiarity (e.g., loan words) should be taken into consideration in the case of Japanese children specifically. Therefore, in this chapter, we also examine word familiarity as a variable prior to conducting the experiment.

Second, regarding the input frequency, we compare a case in which the children's learning experience is richer, having both quantitative and qualitative views, and where the number of lessons they accumulated has higher frequency with another case

(*Elementary School A*), with another one (*Elementary School B*) vice versa. In Chapter 8, the results of this chapter will be compared with another elementary school—*Elementary School B*—in the same grade (160 hours of lessons) so that we can observe children in the fifth grade in *Elementary School A* (25 hours of lessons) as a reference point. The results between the two cases are compared while taking into consideration that the amount of the lessons can be an indicator of frequency. The comparison is conducted under the similar instructions in which the teacher uses a FonF approach and makes abundant opportunities to repeat and imitate examples in a meaningful context in both cases. However, the amount of lessons and level of input frequency are not equal prior to the experiments. Therefore, to be precise, the teacher must remind and control how many times the children use the targeted verb phrases in a context during the experimental lessons. As discussed in Chapter 2, the more the children can accumulate the examples in an interactive way, the better they will be able to establish FMCs. This concept is defined as exemplar-based learning. Accordingly, we suppose that children may become better in establishing FMCs after accumulating further examples.

6.2 Experiment in *Elementary School A* (Age 11)

6.2.1 Aims

The aim of the current experiment is to analyze how successfully children in the fifth grade (about 11 years old and with 25 hours of lesson) can establish FMCs for verb phrases (V-O combination) and to see if perceptual salience plays a role in establishing FMCs. To analyze the role of perceptual salience, we examined the word familiarity of Japanese children from Yokokawa's study (2009) before conducting our experiment, and then, we prepared the measurement tool−Degree Ⅰ‐Ⅲ [Ⅲ was categorized as less salient verb phrases, i.e., the most difficult of perceptual salience for the words within the language slots]—for the children's word familiarity. We assume that the children's establishment of FMCs for verbs might have varied depending on what level they were categorized in on the scale. We suppose that the more children perceive the language slot or the reverse slot, the greater their success can be for establishing the FMCs for verb phrases because they might have started to pay attention to a language slot. However, this leads to a question: "Do children establish the FMCs for verb phrases that are less salient?" Thus, the research hypotheses are as follows:

(1)Children establish the FMCs for verb phrases better when the targeted verb phrases are perceptually more salient (Degree Ⅰ-Ⅲ).

(2)Children establish the FMCs for verb phrases even though the targeted verb phrase is perceptually less salient, as shown by Degree Ⅲ(the most difficult category), and it may indicate that children are paying attention to language slots.

We also use the results of the experiment conducted in *Elementary School A* (25 hours of lesson) for a comparison with fifth-grade children at *Elementary School B* (165 hours of lessons) in Chapter 8.

6.2.2 Participants

In the current study, the participants at public *Elementary School A* consisted of 80 fifth-grade children who were divided into two classes of 40 children. The instructors, their instructional methods, and the language activities were the same in both classes. Therefore, the 80 children were deemed as one group, so this case study was designated as a one group treated with a Pre-Test and Post-Test. The participants' scores were analyzed from the results of two tests (Test 1 and Test 2) that focused on a dependent

variable: the perceptual salience of verb phrases. The children began learning English in 2009 using *English Notebook 1 and 2* during their weekly lessons. They had been exposed to very few verb phrases during the first 25 hours of the language instructions they received prior to these experimental lessons.

There are also a few points that should be noted. First, the amount of input had to be controlled prior to the experiment. Overall, the children in public *Elementary School A* were all good listeners and paid close attention to their teacher's instructions. There were no returnees from other countries, and they started to learn English in the same grade. The objective here was to observe to what degree the children could develop the FMCs for verb phrases through controlled input frequencies that were given in this classroom instruction. To determine the children's understanding level to basic English sentences before the experiments, we conducted Test 1, and no outliers were detected (p= .01). As the lessons progressed, some absentees from both classes were withdrawn so that the final number of participants was reduced to 72.

6.2.3 Procedures of Lessons

The experimental lessons observed in the current study utilized lesson E2-L7, titled "When Do You Get Up?" found in *English Notebook 1 and 2*. The lesson focused on the topic of daily routine actions that are instructed using several verb phrases (e.g., get up, brush my teeth, eat lunch, etc.). The instructional method used was integrated with a focus on meaning. As discussed in Chapter 4, this lesson included several useful verbs; however, most of the verb phrases that were used were repeated with less frequency, and the children might have not been able to guess the meaning without gaining the frequency by the teachers. Therefore, for the five phases given in Table 6-1, the teacher tried to use the target verbs repeatedly and in a meaningful way. The *English Activities* were instructed by the JTE and ALTs at *Elementary School A*. The target verbs and verb phrases were presented approximately five times through communicative activities.

The content of the instruction is shown in Table 6-1. In Phase Ⅰ and Ⅱ, intransitive verbs were introduced using TPR. Test 1 was given after Phase Ⅱ (see Table 6-1). In Phase Ⅲ, the ALT short dialogue in the lesson titled "My Busy Morning" was introduced in an interactive way where children listened to the teachers' verbal instructions that were combined with the use of gestures. The following is an example of the lesson content (called Teacher Talk in *A*):

The alarm clock goes off. I hit the snooze button and sleep. Then, I get up. I *change my clothes.* I *wash my face* and shave. I *eat breakfast.* I *eat a banana and buttered toast*. I *drink juice*. I *brush my teeth.* I *get my backpack* (seeing the sky). It's rainy. I *need an umbrella*. I *put on my shoes*. I *say "Hello*" to my dog, and I *go to school.* (Teacher Talk used in *A*)

After listening to the Teacher Talk in *A shown above*, the teacher asked, "What did you understand?" and "What word could you pick up from the talk?" The children answered voluntarily. The procedures were recorded by the video and analyzed in Chapter 8 by comparing the answers here with the experiment conducted in *Elementary School B*.

In Phase Ⅳ, the activities for the daily routine actions or sports were implemented, and the *ATM-V* was also presented in the latter half. Following Phase Ⅴ, a review of the activities through singing a song and telling a story was conducted; then, Test 2 was given (See Appendix 6-B).

Table 6-1

Lesson Procedures

Phase	Topic	Targeted verb phrases	Activities
Ⅰ	Walk animals	walk, go to, fly, jump, etc.	Story telling TPR
Ⅱ	Winter sports	jump, hop, turn, ski, throw the snowball, play rugby, etc.	TPR and doing actions Picture cards Bingo, Q&A
	Test1		
Ⅲ	My busy morning	get up, wash my face, shave, eat buttered toast, drink juice, etc.	ALT's small talk Doing gestures Pair work
Ⅳ	My busy school	put on my shoes, change my clothes, go to school, say "Hello.", etc.	Teacher talk Daily routine actions Story telling
	Presentation of *ATM-V*s "Teacher Carrot's verbs 20"		
Ⅴ	Very hungry game	eat---, drink ---, etc.	Singing a song Game and activities Story telling
	Test2		

6.2.4 Children's Word Familiarity and Targeted Verb Phrases

Input factors (perceptual salience) can possibly affect the children's understanding and use of verb phrases. In this chapter, we predict the effect of perceptual salience of verb phrases from input while selecting the target verb phrases based on the content of these lessons and determine a scale of the word familiarity within verb phrases by examining two types of scales on perceptual salience toward verbs.

The first type of scale, which was proposed by Yokokawa and later redefined by the author, refers to word familiarity level (wf-level) and is shown in Table 6-3 (Yokokawa, 2009). The subjects observed in the research (Yokokawa, 2009) were university-level

students and somewhat different from the elementary school students in terms of their cognitive development. However, the results of Yokokawa's (2009) study seem to be influenced by the students' L1 and surroundings with loan words in Japan; measuring the word familiarity in Yokokawa's (2009) study is demonstrated in Table 6-3. In observing Yokokawa's wf-levels, the higher the level's number, the higher the word familiarity that is being demonstrated by the student. According to Yokokawa's study, the maximum wf-level was determined to be 6.98. The symbol "---" indicates that the word is not included in the wf list.

The second type of scale on perceptual salience refers to word familiarity displayed at the elementary school level (e-wf level), also shown in Table 6-3. This type of perceptual salience was determined by examining the word familiarity of fifth-grade children at *Elementary School S*, which was not part of the current case study. In the current study, we focused on fifth-grade children of *Elementary School A*, where the children have very little experience hearing verb phrases. This is an essential point of the current study: to see to what extent children can establish verb phrases at a very early stage of learning. However, the children's first encounter with verb phrases would have been lost if we had first conducted a test to measure their word familiarity. It is also difficult for children at a beginner level to select other verbs for only test purposes.

Therefore, around when *English Activities* had just been introduced, we conducted a test to examine the general word familiarity of Japanese children of the same age at *Elementary School S*. In reality, the e-wf test was held in 2009, and all the children had never learned English at school in the previous year 2008, which is the same for *Elementary School A*.

Based on Yokokawa's research, a questionnaire asking whether the children have heard or can guess the meaning of the word was passed out in fifth-grade classes at *Elementary School S* to a total of 75 participants (see Appendix 6-C and 6-D). At the time of the questionnaire, the children had taken 20 hours of *English Activities*, including games and HRT and ALT activities, but they had not received instruction on verb or verb phrases. One child, who was discovered to speak English often at home, and three others who had undergone prior EFL learning were excluded from the survey, so the final number of participants was 71. The questionnaire was a multiple-choice series of questions with 1–5 scales rating the children's ability to understand English verbal input recorded by an ALT. The levels of understanding were written as follows:

(1) Understand the meaning of the word (describe it in Japanese).

(2) Somewhat understand the meaning of the word (describe it in Japanese).

(3) Have heard the word before but do not understand the meaning.

(4) Have never heard of the word.

(5) Do not understand any concept of the word.

For each question, one point was given when the description in Japanese was correct in (1) or (2), and no points given when the description in Japanese was incorrect in (1) or (2) or when either (3), (4), or (5) where marked. The average of the point total was then assessed as the children's e-wf level (0-1.0) , shown in Table 6-3.

The results indicate that the words juice, gold, change, flower, get, and drink are ranked high in word familiarity while the words give, say, clothes, and need are ranked rather low. This means that if the latter group of words were used in *English Activities*, they would very likely be unfamiliar to the children of *Elementary School S*.

In the process of identifying the e-wf level, we did turn up an unexpected side benefit of children's L1 influence (treating mainly *katakana*). The results from the questionnaire revealed several characteristics of understanding. First, the word *give* was misunderstood as "give up" in several cases. It was determined that the children tried to interpret the spoken English words by linking them with the loan words they were

already familiar with. Second, the word *medal* presented phonological problems for these children whose native language did not feature an "l" sound, yet in their own language, they may have been familiar with the object because of the loan word "*medaru.*" Thus, they might have known what a *medal* may be after they had read or heard it phonologically in their native language, but when reading or hearing the word in the original English, they might not have recognized it. There are several English loan words that have become well-known by means of TV programs or the Internet but that are interpreted differently phonologically. The results presented in this study represented only a sample of word familiarity of the fifth-grade-level children at *Elementary School S,* but the results can be utilized as a general, basic scale for fifth-grade children who have just started to learn English activities in a very similar condition.

6.2.5 Tests and Targeted Verb phrases

To measure the level of children's development of FMCs, a picture test was used in which the children directly connected pictures to auditory input. The pictures were taken out of several scenes from the *ATM-V,* as proposed in Chapter 5. This type of test

offered a different approach from the descriptive test used in Chapter 5, but the testing methodology and the corresponding results were followed.

Regarding the verb phrases, Test 1 mainly included intransitive verbs. This can be treated as a Pre-Test to measure the children's FMCs for intransitive verbs such as jump and hop after the teacher's implementation in Phases Ⅰ and Ⅱ, in which the children may have become familiar with the action verbs through TPR, storytelling, and games (See Table 6-1). Here, Test 1 can be thought of as a Pre-Test to grasp children's FMCs at the very beginning of lessons, which can be compared with a Post-Test at the end of the lessons. In this case, most of the verbs did not have a reverse slot so that we could evaluate to what extent children were able to connect one sound (e.g., jump or hop) with an action. In this sense, Test 1 does not analyze the FMCs because one sound showed knowledge of a word, not a form.

Regarding the verb phrases, Test 2 mainly included transitive verbs. This can be treated as a Post-Test, as well as a main test to measure the children's development of FMCs for verb phrases, such as drink juice or wash my face, after the teacher's implementation of all procedures in which children could become familiar with the action verbs through TPR, storytelling, pair work, the ALT's small talk, daily routine actions, and the introduction of the *ATM-V* (See Table 6-1). Test 2 was considered the main test

for grasping children's FMCs after all the procedures has been carried out. The test featured the verb phrases with a reverse slot (e.g., --- juice, --- my face), and it tried to have children find a language slot (e.g., drink *X*, wash *X*) . We evaluated to what extent children could establish the FMCs for verb phrases (drink juice or wash my face) in reference to the word familiarity of the verb phrases.

The test script was recorded by a native speaker, and the children had to connect a picture with an English sound for Test 1 and a picture or a scene captured from the *ATM-V* for Test 2. Tests were given in a sound-matching format where the children would connect dots with lines, which would help avoid guesswork (multiple-choice format). The scripts for Test 1 and Test 2 were recorded with the voice of an American female ALT who was speaking at a natural speed. The decision was made not to use the voice of their regular class teacher, a New Zealand male ALT. By hearing the voice of an English speaker other than the voice of their teacher, the children would be less influenced by his familiar word sounds as they attempted to identify auditory phrases. Meanwhile, the audio of the *ATM-V* was recorded with the voice of a different speaker, an American male ALT. In *English Activities*, the *ATM-V* with audio was used often in the classroom. The objective was for children to be able to identify English words from a variety of accents.

As shown below, the ranges Degree Ⅰ to Degree Ⅲ were used for Test 2. For instance, for Degree Ⅰ, the verb phrases included both verbs and nouns with a higher degree of word familiarity, meaning it was supposed to be the easiest one for the children.

Degree Ⅰ: Objects (O) have a higher degree of word familiarity in the V-O combinations (e.g., drink juice, and say a hello). Here, nouns are more perceptual than verbs.

Degree Ⅱ: Verbs (V) have a higher degree of word familiarity in the V-O combinations, while objects (O) have a lower degree of word familiarity (e.g., wash my face, change my clothes, get a gold medal). Here, verbs are more perceptual than nouns.

Degree Ⅲ: Both verbs (V) and objects (O) have similar degrees of word familiarity in the V-O combinations (e.g., need an umbrella, give a flower to *X*.)

Accordingly, both nouns and verbs are perceptually fairly equally. Here, these verb phrases are less salient for the children.

Table 6-2

Test 1 and Test 2 (See Appendix 6A and Appendix 6B)

No.	Test1	Verbs	Test2	Verbs
1	jump	jump	drink juice	drink
2	shake	shake	say “Hello”	say
3	hop	hop	wash my face	wash
4	clap	clap	get a gold medal	get
5	turn	turn	change my clothes	give
6	wave	wave	need an umbrella	need
7	shut	shut	give a flower to *Pukin*	give
8	shake hands	shake		

Note. The italic letters indicate the proper nouns as appeared in *ATM-V*.

Table 6-3

Categories of Word Familiarity Level (wf-level)

No.	verbs	wf	e-wf	objects	wf	e-wf	D
1	drink	5.04	0.8	juice	----	0.96	I
2	say	5.23	0.16	hello	6.96	0.92	I
3	wash	6.19	0.4	face	5.49	0.28	II
4	get	5.67	0.8	gold / medal	6.37 / ----	0.96/0.48	II
5	change	6.08	0.92	clothes	4.89	0.12	II
6	need	6.28	0.12	umbrella	----	0.68	III
7	give	5.42	0	flower	5.52	0.7	III

Note. D: Degree of word familiarity

wf: Word familiarity adapted from Yokokawa’s study (2009)

e-wf: Word familiarity from a fifth-grade classroom conducted for this study

6.2.6 Results

Test 1 has eight categories while Test 2 has seven. The scores were divided into three ranges (less than 60%, 60–80%, and 80–100% correct answers), and the corresponding number of children who scored within these ranges for both tests were recorded (see Table 6-4). Detailed statistics of the results of both tests are shown in Tables 6-5 and 6-6. The proportion of the correct answers (0–1.0) from Test 1 is shown in Table 6-7. For Test 2, it is shown in Table 6-8, along with corresponding degree level of perceptual salience.

Table 6-4

Score Ranges From Tests 1 and 2 and Number of Children Who Scored Within These Ranges

		Test1		
	Correct Answer(%)	~60	60~80	80~100
Test2	~60	5	3	3
	60~80	3	7	20
	80~100	3	6	22

Table 6-5

Descriptive Statistics From Test 1

N	*Mean*	*SD*	*Variance*	*Min.*	*Max.*
72	6.01	1.75	3.01	1	8

Table 6-6

Descriptive Statistics From Test 2

N	*Mean*	*SD*	*Variance*	*Min.*	*Max.*
72	5.83	1.17	1.36	2	7

Table 6-7

Proportions of Correct Answers From Test 1 (N=72)

Test1 (Intransitive Verbs)	Proportions of correct answers
jump	0.94
shake	0.74
hop	0.85
clap	0.69
turn	0.89
wave	0.61
shut	0.75
shake hands	0.67

Table 6-8

Proportions of Correct Answers From Test 2 (N=72)

Test2 V-O Combinations	Proportions of correct answers	Degree
drink juice	1	I
say "Hello"	0.93	I
wash my face	0.88	II
get a gold medal	0.90	II
change my clothes	0.85	II
need an umbrella	0.72	III
give a flower to *Pukin*	0.53	III

Note. Degree: degree level of perceptual salience

In Table 6-4, 22 children scored in the 80–100% range on both Tests 1 and 2, accounting for 30% of the 72 participants. All of these, 22 children gave the correct answers for "need" (Degree Ⅲ), and seven gave the correct answer for "give" (Degree Ⅲ).

These children were considered to have successfully established verb phrases, even if the verb concepts were difficult. Among the remaining participants, 45 children scored in the 60–80% range on either Test 1 or Test 2, accounting for 63% of the 72 participants. These children adequately established verb phrases; however, hearing the input and then guessing the meaning seems to be occurring, so they may need to have further opportunities to accumulate exemplars.

The remaining five children scored lower than 60% on both Tests 1 and 2（See Table 6-4）. Two children gave the correct answer for need while none of them gave the correct answer for give. These children have not yet noticed the English forms, and what they hear may have nothing to do with the concepts represented in their minds or L1 concepts. However, if the children can be triggered once to notice the form with the meaning and vice versa, they will become more likely to identify the meaning of a verb phrase, particularly by grasping the salient words. As stated in Chapter 2, individual language aptitude (e.g., phonemic code ability, analytical and grammatical sensitivity, inductive language-learning ability, working memory, etc.) also influence individual proficiency.

6.2.7 Discussions

The results show that 30% of children in the fifth grade (about 11 years old and given 25 hours of lessons) adequately established the FMCs for verb phrases (V-O combination) on both Test 1 and Test 2 during the experimental lessons. However, the degree of constructing these verb phrases and the perceptual salience of each verb represented by the word familiarity were different among the children.

In Test 1(See Table 6-4), we found that 45 out of the 72 participants scored in the 80–100% range, accounting for 60% of the participants. Each verb's score varied depending on the verb. For Test 1, we were not able to obtain the word familiarity; however, the loan words, such as jump and turn, had a higher score compared with English words such as wave and shake. There seemed to be a difference among the verbs regarding perceptual salience. The results of Test 1 were obtained after Phase Ⅱ. What children learned was influenced by Phases Ⅰ and Ⅱ, where the children heard the verbs and guessed the meaning and kept these meanings in their minds with only the English sound. A target verb was a word but not a form; however, the children were adequately successful in connecting the meaning with the sound. On the other hand, the remaining 40% had a lower score. The children's cognitive abilities to infer and map the meaning with the sound may depend on their IDs. During the lessons, the children initially

seemed surprised by the make-up of the test. One of the children was quoted as saying, "The quizzes are fun, but I did not keep it in mind while playing the game, so I can try the next time." In this case, the Test 1 scores varied significantly (the variance for Test 1 was 3.01 while the variance for Test 2 was 1.36), as shown in Tables 6-5 and 6-6.

Whereas, in Test 2, we found that 31 out of the 72 participants scored in the 80–100% range, accounting for 43% of the participants. This result was obtained after all the procedures had been carried out. The scores were lower than the ones for Test 1. The result of each verb phrase varied depending on the perceptual salience regarding the level of word familiarity that we measured for the experiment. The proportions of correct answers given on Test 2 are shown in Table 6-8. A correct answer was marked as 1, and an incorrect answer was marked as 0. *Cochran's Q* test showed that the difference was statistically significant depending on the verb phrases (using the formula $\chi^2(6)=81.42$, $^{**}p< .01$). The scores on Test 2 differed depending on the degree of word familiarity.

As shown in Table 6-8, the proportion of correct answers for Degree I phrases fell in the 90–100% range. Children were proficient in identifying the meaning of Degree I verbs (drink and say). For Degree Ⅱ verbs, the proportion of correct answers fell into the 80–90% range. Children were fairly able to identify the meaning of the Degree Ⅱ verbs (wash, get, and change). Finally, for Degree Ⅲ verbs, the proportion of correct

answers fell somewhere in the 50–70% range. Some children were able to correctly identify the meanings of Degree Ⅲ verbs（need and give）while others struggled with them. Approximately 30–50% of the children had difficulties developing the FMCs for Degree Ⅲ verbs. This demonstrates that the higher the degree of prior word familiarity is in the verb phrases, the better the children will be at identifying the proper meaning of the phrases. These results suggest that children can better establish FMCs if at least part of a given verb phrase includes words that they already know (or are familiar with). Looking at the wf value and e-wf values shown in Table 6-3 , the successful FMCs depend on the degree and can be classified as follows: Degree Ⅰ > Degree Ⅱ > Degree Ⅲ. Children's establishment of FMCs was remarkable for Degree I and Ⅱ words not only for nouns, but also verbs. Higher degrees of word familiarity helped in making successful FMCs when verb phrases (V-O combinations) were previously instructed. It can be said that the perceptual salience included in the input (e.g., --- juice, get ---) can help children notice linguistic code features. Moreover, the fact that the scores for Degree Ⅰ were higher than Degree Ⅱ indicates that nouns that are familiar to children are more influential than verbs that are familiar when children are trying to establish FMCs. This suggests that nouns as the reverse slot may improve children's ability to find language slots.

For the results on verb phrases that were less salient, the FMCs for verb phrases at Degree Ⅲ were somewhat modest (need an umbrella＝0.72, give a flower to *X*=0.53). However, looking at, the e-wf values of the verbs, need (0.12) and give (0.00) were very low; that is, they were unknown words, in general, for fifth-grade children, which is the same for the participants of *Elementary School A*. Compared with this, in the post-experiment, as shown in Table 6-8 (the proportions of correct answers in Test 2), the need phrase shows an e-wf value of 0.72 and give phrase 0.53. The increasing rate is greater than one of the other verbs (e.g., wash my face=0.88, e-wf of wash=0.4). Such unknown and abstract verbs (need, give) are likely more context dependent. It can also be said that the part of the object, such as umbrella or flower, may allow children to guess what word will be contained within the language slot (e.g., --- umbrella, --- a flower to *X*) during the lessons. Children also utilize language concepts from their native language when they hear the teacher's input.

In this experiment, because we had been using FonF with structured input through the games and activities or storytelling, children had many opportunities to map the meaning to the sound by paying attention to the more perceptually salient part of the phrase. Accordingly, children seemed to be repeatedly trying to establish verb

phrases; thus, the children were finding linguistic code features, even though finding these features is less salient.

6.3 Conclusion

In their initial introduction to English in 2009, the fifth-grade children (approximately 11 years old) in *Elementary School A* were observed to have considerably noticed the FMCs for verb phrases (V-O combinations), particularly with Degree Ⅰ and Ⅱ verbs. Even though the children were beginners, they demonstrated that they could extablish FMCs depending on how well they could process the verbal and non-verbal information, utilize language concepts from their native language, and be conscious of both form and meaning. Concerning Degree Ⅲ, even though the score was not high, we found that children's cognitive learning was occurring. Verbs such as need and give were less salient and abstract. Therefore, it is considered that the children paid a great deal of attention to the reverse slot. The reverse slot was shown to help children notice the linguistic code feature.

Thus, the hypotheses (1) and (2) were mostly supported. However, over 80% of the children were able to guess the Degree II verb phrases（less salient than Degree Ⅰ）,

and approximately from 50–60% of them could guess the Degree Ⅲ verb phrase (the least salient). We can conclude that the word familiarity was essential, but retrieving the procedures of the FMCs was also effective. Children also tried to remember the chunks and find a slot to establish FMCs, even when the input was less salient, which would occur for their first time trying. The repetitions and frequency of input mostly helped improve the children's verb phrases as well.

In addition, to close the learning gaps among children in the same grade, learner factors such as IDs must be considered. This may be related to not only L2 proficiency at this stage, but also human cognitive ability developed while a child learns his or her mother language. However, we need further research to show whether cognitive ability for FMCs can be developed throughout children's learning processes and whether this can be elicited by teaching procedures.

The current research also shows one limitation: we were not able to observe the accumulation of verb phrases during longer lesson procedures or compare Test 1 with Test 2 by using similar target verb phrases to see if the scores would increase; this was not possible because the participants had just started to learn English and had a limited vocabulary.

We conclude that children can establish FMCs at around 11 years old but vary in the degree to which they can do so, depending on perceptual salience such as the English-word familiarity within the verb phrases. If teachers incorporate perceptually salient words and use the reverse slot effectively when teaching verb phrases, they may draw children's attention toward FMCs more effectively. This stresses the importance of a teacher's verbal input in the classroom. In this chapter, we were able to identify factors that helped trigger pattern finding and the schema formation of verbs and the meaningfulness of the retrieval of FMCs. However, we have not yet clearly identified how children's cognitive learning may function, such as in the schema formation of verbs.

Chapter 7

Impact of Amount of Input and Different Ages on the Form-Meaning Connections of Verb Phrases (Ages 8 to 12)

7.1 Introduction

In the previous chapter, we showed that fifth-grade children at *Elementary School A* (25 hours of lessons) were able to establish the FMCs for Degree Ⅰ and Ⅱ verb phrases; however, the scores for Degree Ⅲ verb phrases were lower than other degrees and varied in degree depending on the perceptual salience, such as English-word familiarity within the verb phrases. The children had only undergone 25 hours of lessons at that time, so they most likely did not have a sufficient level of input. Accordingly, we needed to investigate how more lessons and their input could influence the establishment of FMCs successfully and whether children who experience further exemplar-based learning are able to move forward the stage of schema formation of verbs.

Therefore, in this chapter, we analyze how effectively children from a wider range of grade levels, first–sixth grade (ages 7 to 12) in *Elementary School B* establish the FMCs for verb phrases (V-O combination). *Elementary School B* was designated as a pilot school where the teachers had developed their own curriculum of *English Activities*, which was supported by the municipal board of education. The curricula incorporated *English Notebook 1 and 2* in third–sixth-grade classes.

Since we will employ the same procedures for the lessons using the same Degree Ⅰ to Ⅲ of verb phrases, the results in this chapter are also compared with the results of the experiment conducted in *Elementary School A* that we had exploited in Chapter 6. The comparative discussion will be referred to in Chapter 8 as well. The major difference between *Elementary Schools A* and *B* is considered in the accumulation of lessons. As we defined in Chapter 2, exemplar-based learning gives learners the opportunity to imitate and repeat what they hear and then it aids them in connecting what they hear with the English sound. We also note again that the procedural knowledge through learning exemplars of the language demonstrates FMCs of the language (Yamaoka, 2006, p.1). Therefore, in the present research on *Elementary School B*, we expect to observe the cognitive procedures of exemplar-based learning for verb phrases in approximately

the first 200 hours of lessons in the EFL classroom. The results could be extrapolated and analyzed for developing a better future for elementary school English education.

7.2 Experiment in *Elementary School B* (Ages 8 to 12)

7.2.1 Aims

The aim of the current experiment was to identify children's FMCs for verb phrases in exemplar-based leaning and how children's schema formation of verbs comes after the establishment of FMCs. Thus, the research hypotheses are as follows:

(1)The degree of establishing the FMCs for verb phrase starts to develop among first–sixth-grade children (ages 7–12). Particularly, the more the children experience exemplar-based learning, the better they can establish the FMCs for verb phrases, even with Degree Ⅲ verb phrases (see Chapter 6); here after, the children's experiences are shown in Table 7-1 with the accumulated number of lessons (from 10–220).

In this experiment, age indicates the accumulation of lessons and the amount of input that the children at each grade level are exposed to English. For this purpose, the target verbs are classified into three degrees beforehand, as shown in Chapter 6.

(2)When the children undergo exemplar-based learning and reach a certain amount of input, their ability to form schema for verbs occurs through the successful establishment of FMCs for verb phrases.

In this experiment, if the children are successful in establishing FMCs, even with Degree Ⅲ verb phrases, which are unknown phrases for all the children, this means that they are starting to hear the input as schematized patterns (such as need *X*, give *X* to *Y*, --- un umbrella, --- a flower --- *Pukin*) rather than unanalyzed whole chunks. In addition, in the experimental lesson, an interaction between an ALT and the children in the classroom is observed by transcribing their discourse. Based on the results, we discuss how exemplar-based learning moves forward, works, and may benefit EFL learning in Japanese elementary schools in the long term. For this purpose, the extent to which the children's FMCs of the three degrees of the target verbs vary depends on how many lessons they have taken.

The variable here—age, which can be considered the accumulation of inputs during learning—may influence the extent to which the children are successful in understanding verb phrases. In *Elementary School B,* the older the children are, the more lessons they will have experienced. As Pinter (2007) suggested, younger children are interested in the meaning and function of new languages more holistically while older children will develop more awareness of a language, its component parts, separation, careful analysis of grammar, and accumulation of lexis (Pinter, 2007). Therefore, here, the age of the children may also determine the accumulation of lessons. We also have to be careful of the age factor mentioned in Chapter 2 and whether the age factor affects FMCs.

In addition, to observe the children's FMCs by using a comparison between fifth grades in *Elementary School A* (mentioned in Chapter 6) and fifth graders in *Elementary School B*, the following two conditions are carefully prepared: First, the same instruction and procedures were used in the classroom for all the grade levels at *Elementary School B,* where the children were exposed to English for up to 5 years. For instance, the fifth graders had been learning English for 5 years while the first graders had been learning English for 1 year. *Elementary School B* initiated their current English program 5 years earlier. That is, the children have accumulated further input and had more experience

exemplar-based learning. We observe the extent to which the accumulation of this level of input may have affected how effectively the children can establish FMCs. Second, regarding the target verb phrases, three degrees of word familiarity—e-wf (see Chapter 6, Table 6-3)—are used. Those target verb phrases were chosen from the list of verbs explained in Chapter 4, but most of the words do not appear in *English Notebook 1 and 2* or the curriculum of either school. That is, the target verbs were carefully selected for conducting a comparative analysis (discussed in Chapter 8) in advance.

Therefore, the results obtained will contribute well toward analyzing whether children establish FMCs relative to the amount of input. The comparative analysis among ages may give us a good picture of children's cognitive process.

7.2.2 Participants

The participants of *Elementary School B* initially numbered 43 children, ranging from first–sixth graders. Of these, eight in the first and second grades did not undergo Test 2, which will be explained later. After one other participant withdrew from the initial participants, the final number of participants was 34. The sixth graders began their EFL studies in the classroom in the second grade (approximately age 8), so they

were learning English for the fifth year at the time of the trial. The amount of lessons these sixth graders had received totaled 220. The length of the children's EFL experiences corresponding to the number of lessons taken is shown in Table 7-1. The first and second graders, totaling eight, learned English in the same class. None of the participants had undergone any kind of formal, long-term learning EFL learning prior to entering *Elementary School B*. A third-grade child transferred to the school in 2009, and the children's performance and results of Test 1 and 2 were carefully observed. No outliner was detected on the scores for either Test 1 or 2 ($*p < .05$), so this participant's results were included with the other participants. This particular study was conducted in the last month of the 2009 academic year.

Table 7-1

Participant Data

Grade	Age	Number of participants	Length of EFL learning (Years)	Accumulated number of lessons
1/2	8	8	1 or 2	10 or 20
3	9	11	3	55
4	10	6	4	90
5	11	10	5	160
6	12	8	5	220(200)

Note. The sixth graders had taken 200 lessons.

7.2.3 Procedures of Lessons

The English Activities were conducted by a Japanese teacher of English (JTE), a homeroom teacher (HT), and an assistant language teacher (ALT). The children often listened to the ALT speaking English even during recess. The number of English Activities given was five, similar to the number given at *Elementary School A*. The lessons were implemented with FonF that was integrated with a focus on meaning. While within a meaningful context, the target verb phrases were used approximately five times in an interactive way.

The procedure is shown in Table 7-2. The unit E2-L7, titled "When Do You Get up?", was used for the study. In this unit, common activities (e.g., eat dinner, eat school lunch, play the piano, go to school, study math, take a bath) were introduced. To observe the children's FMCs, the target verb phrases that were firstly introduced to initially were carefully selected (See Table 7-3).

The ALT's short dialogue used in Phrase Ⅲ, which is shown in Table 7-2, and the use of the *ATM-V*'s 20 verbs were prepared to observe the children's imitative output. Following the ALT's short dialogue, the children's responses and imitation of the input were transcribed and analyzed (See Table from 7-14 to 7-19). The ALT's short dialogue

in “My Busy Morning” was introduced in an interactive way, and the ALT made use of gestures of verb phrases to aid in the learning process. The input conditions and the difficulty level of the sentences were kept the same as those in *Elementary School A* (See Chapter 6) because the results will be compared between the schools. An example of the dialogue of Teacher Talk in *Elementary School B* is shown below with the words in italics indicating target verb phrases:

> I *hear the alarm*. I *hit the snooze button* and went back to sleep. I *hit the snooze* button again. I *change my clothes*. I *wash my face* and *shave*. I *eat breakfast.* I *eat a banana*, granola cereal, and buttered toast. I *drink juic*e. I *brush my teeth.* I *see the flower,* a beautiful flower in my terrace. I *get my backpack* (seeing the sky). Oh, no! It's raining. I *need an umbrella.* I *put on my shoes* and *go to school.* (Teacher Talk used in *B*)

The dialogues used in the English activities were mostly the same in both elementary schools; however, the children in *Elementary School B* were used to listening to English, so we had to change a part of plan and alter one condition to conduct the experiment properly, as follows:

First, the first and second graders did not undergo Phase Ⅳ or Test 2 (See Table 7-2). Although these children did well in the activities, the tests used in the current study were deemed too challenging after analyzing these participants' results from Test 1. Children ages 6 and 7 (early childhood) seem more likely to focus on meanings only when gestures are involved, for example, while they are listening to and acting out English commands with the TPR. At this stage, they may not yet have reached the cognitive operations needed for generalization and abstraction, which is essential in the process of establishing FMCs. Thus, the original plan to have the first and second graders take Test 2 along with the other children was modified.

Second, to maintain the same learning condition between *Elementary School A* and *Elementary School B*, we used sound inputs while leaving out any alphabet letters from the lessons. As the pilot school for the current study, *Elementary School B* had started teaching alphabet letters at the time of the experiment, using phonemic awareness with fifth graders. However, the instruction of literacy or teaching verbs through the chunks were not emphasized in the current case.

Table 7-2

Lesson Procedures

Phase	Topics	Targeted verb phrases	Activities
I	My favorite animals Gesture games	walk, go to, fly, jump, etc.	Storytelling TPR
II	Winter sports	jump, hop, turn, ski, throw the snowball, play rugby, etc.	TPR and Doing actions Picture cards BINGO Q&A
	Test 1		
III	My busy morning	get up, wash my face, shave, eat buttered toast, drink juice, etc.	ALT's short dialogue Doing gestures Pair work
IV	My busy school day	put on my shoes, change my clothes, go to school, say "Hello.", etc.	Teacher instruction Common activities Battleship game Clock game
	Presentation of ATM-Vs "Mr. Carrot's 20 Verbs"		
V	Very hungry game "Pal the Parrot" （First–Third-Graders） "Froggy Goes TO School." （Fourth–Sixth-Graders）	eat---, drink---, Hello, my name is~. wake up, get on the bus, wear pants, etc.	Singing a song Games and activities Storytelling Q&A
	Test 2		

Note. Phases Ⅰ–Ⅳ are almost similar to Table 6-1 in Chapter 6, while the storytelling in Phase Ⅴ is different.

Table 7-3

Content of Test 1 and Test 2

No.	Test 1	Verbs	Test 2	Verbs
1	jump	jump	drink juice	drink
2	shake	shake	say “Hello.”	say
3	hop	hop	wash my face.	wash
4	clap	clap	Get a gold medal	get
5	turn	turn	change my clothes	change
6	wave	wave	see the flower	see
7	shut	shut	Need an umbrella	need
8	shake hands	shake	Give a flower to *Pukin*	give

Note. This small talk is similar to Table 6-2 shown in chapter 6

7.2.4 Test Materials (Tests 1 and 2)

The following test materials were used to observe the participants' ability to understand the FMCs for verb phrases. All the participants in all grades took Test 1 (focusing on intransitive verbs). The third–sixth graders took Test 2 (focusing on transitive verbs). Similar to the case study from Chapter 6, Test 1 in the current case study was designed to anticipate some possible errors by the children when answering questions on an unfamiliar test format. The objective was to have the children attempt to connect the meanings of the sound inputs (ranging from Degree Ⅰ – Ⅲ word familiarity) with both objects and verbs within V-O combinations. The degree levels

determined whether the FMCs varied depending on perceptual salience. Degrees Ⅰ-Ⅲ in Test 2 are shown below.

One additional phrase ("see the flower") was added to Test 2 to see how differently the children distinguished between "see the flower" and "give a flower to X." The basic word familiarity among the fifth grades (e-wf, 0.06) remained. The perception verb "see----" was unfamiliar to most of the children. If the children are able to distinguish the phrase "see the flower" from "give a flower to X," they should be able to connect the sound input with form not only with known words, but also unknown words, including those that are mixed together in a language slot. Table 7-5 shows the contents of each Degree.

Table 7-4

Word Familiarity Categories

No.	Verbs	wf	e-wf	Objects	wf	e-wf	D
1	drink	5.04	0.8	juice	----	0.96	Ⅰ
2	say	5.23	0.16	hello	6.96	0.92	Ⅰ
3	wash	6.19	0.4	face	5.49	0.28	Ⅱ
4	get	5.67	0.8	gold / medal	6.37 / ----	0.96/0.48	Ⅱ
5	change	6.08	0.92	clothes	4.89	0.12	Ⅱ
6	see	----	0.06	flower	5.52	0.7	Ⅲ
7	need	6.28	0.12	umbrella	----	0.68	Ⅲ
8	give	5.42	0	flower	5.52	0.7	Ⅲ

Note. D: Degree of word familiarity, wf: Word familiarity as defined by Yokokawa (2009), and e-wf: Word familiarity among fifth graders who were surveyed prior to this study.

Table 7-5

Contents of Each Degree（Ⅰ－Ⅲ）

Degree Ⅰ	Objects(O)have a higher degree of word familiarity in the V-O combination(e.g., drink juice, and say a hello). Here, nouns are more perceptual than verbs.
Degree Ⅱ	Verbs(V)have a higher degree of word familiarity in the V-O combinations, while objects(O)have a lower degree of word familiarity（e.g., wash my face, change my clothes, get a gold medal). Here, verbs are more perceptual than nouns.
Degree Ⅲ	Both verbs(V) and objects(O) have similar degrees of word familiarity in the V-O combinations(e.g., need an umbrella, give a flower to X.)Accordingly, both nouns and verbs are perceptually fairly equally. Here, these verb phrases are less salient for the children.

The number of items given on Test 2 was eight. There was one element that was different from *Elementary School A*. That is, one additional item was added because the teacher's instruction at *Elementary School B* had been tuned to the children's comprehensible input level. In fact, observing the recorded lesson, children's overall output at *Elementary School B* showed to be at a greater level. Consequently, the children's interactions were deemed greater in each class, and they tended to imitate what they learned more efficiently and promptly in groups and pair work, so the ALT and JTE adjusted the level of dialogue and add an extra item.

7.2.5 Discourse Analysis

After the quantitative research conducted in this chapter, qualitative research was conducted to determine how children responded to the ALT's talk, including verb phrases given by the teacher in the classroom. The children's imitative output following the ALT's short dialogue in Phase Ⅲ (See Table 7-2) was video-recorded and transcribed.

The data from the transcription was converted into quantitative data using the concept C-unit (Brock, 1986; Pica, Holliday, Lewis & Morgenthaler, 1989). Brock (1986) and Pica et al. (1989) both conducted a discourse analysis in which the quality of learner output in EFL learning was converted into measurable quantitative data using a process termed C-unit. Brock defined the C-unit procedure as follows: the quality of speech production is measured by the number of words per C-unit[10] (an utterance, phrase, or sentence) that gives a referential or pragmatic meaning to the interaction (Brock, 1986). There is an older procedure defined by Hunt as T-units,[11] where the quality of speech production is measured by the main clause, along with corresponding subordinate

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[10] Brock stated that the quality of speech production is measured by the number of words per C-unit (utterances of words, phrases, or sentences that give referential or pragmatic meaning to the interaction; Brock, 1986). Pica, Holliday, Lewis & Morgenthaler (1989, p.72) added, "grammatical and ungrammatical expressions which provide referential or pragmatic meaning to NS-NNS interaction."

[11] Hunt stated that T-units have "one main clause and all subordinate clauses attached to it." (Hunt, 1965, p. 20)

clauses (Hunt, 1965). However, for the current study of young EFL learners who tend to single out word fragments, the C-unit procedure was deemed more suitable for obtaining the target results. Therefore, the children's imitative outputs were measured using the C-unit concept, as in the following example:

A: Where is my hat? (C-unit=1)

B: On the table. (C-unit=1)

In addition to C-units, we also counted the number of verb phrases within the children's imitative output. The data obtained were compared among the children within each grade level. The transcription and coding of the current case study were conducted by a JTE at *Elementary School B* and this author. The data were thoroughly reviewed three times.

7.2.6 Results and Analyses

7.2.6.1 The Impact of the Age Factor on Form-Meaning Connections Through Perceptual Salience

Both Test 1 and Test 2 had eight categories (See Table 7-3). No outliner was detected in either Test 1 or Test 2 (**p<.01). Children who withdrew prior to taking the tests were not counted, so the final participants totaled 34. Tables 7-6–7-9 show the proportion of correct answers (0–100%) given in the tests by children in each grade level. Table 7-10 summarizes the overall statistics from Test 2.

The number of children who had 80–100% of the correct answers was two (out of 10) in the third grade, two (out of six) in the fourth grade, three (out of 10) in the fifth grade, and three (out of eight) in the sixth grade. These children were successful in understanding verb phrases; they seemed to memorize the sound form and connect it with its meaning. Here, even third-grade children demonstrated analytical abilities as effectively as the older children. The number of children who had 60–80% of the correct answers was six (out of 10) in the third grade, four (out of six) in the fourth grade, seven (out of 10) in the fifth grade, and five (out of eight) in the sixth grade. These children were deemed to be successful in extablishing FMCs for some whole phrases or parts of phrases but struggled in understanding difficult phrases. Only two children, both third graders who had less than 55 hours of lessons before this experiment, scored less than

60%. Overall, fourth graders who underwent 90 hours of lessons attained the considerable standard level of establishing FMCs.

We surmise that the more input in the form of hours being taught that the children have accumulated as they advance to higher grades, the more likely they are to begin successfully establishing FMCs with regularity. However, in the current study, we found no drastic difference between fifth graders, and sixth graders. The latter children did not show to be superior to fifth graders in all cases, indicating that fifth graders with 160 hours of lessons or more have reached a ceiling for the ability to establishing FMCs. We assume that these children reach the stage in which a certain trigger to find linguistic patterns need to be prepared.

An analysis of the progress from Test 1 to Test 2 is shown in Table 7-10. Test 1 focused on intransitive verbs, aiming at the basic connections between words and their corresponding sounds (e.g., jump, turn, etc.). Test 2 focused on transitive verbs (V-O combinations), which have more complex forms. The data in Table 7-10 demonstrate that among the fourth-, fifth-, and sixth graders, only zero to three children had lower scores on Test 2 when compared with Test 1, while five of the third graders scored lower on Test 2. These results show that third graders (age 9) were, for the most part, able to connect the familiar words with their meanings but struggled to connect their forms (V-O

combination) with their meanings (as shown from Test 2 results). Table 7-10 also shows an improvement in the scores from Test 1 to Test 2 among some of the fifth graders (four children) and sixth graders (five children), while none among the sixth graders showed any decline on Test 2. This indicates that increasing the input frequency of the target verb phrases by approximately five times changed the children's ability to establishing FMCs during the lesson procedures. This proved that the older children started to be careful and listen to the sound forms after receiving Test 1, which may play the role of a trigger of establishing FMCs. As shown in Table 7-10, between Test 1 and Test 2, the fifth (four children out of 10) and sixth graders (five children out of eight) increased their scores, while only a few of the third (one child out of 10) and fourth graders (two children out of six) increased their scores (See Table 7-10). Overall, the children began to demonstrate noticeable abilities to develop FMCs by the time they had reached the fifth and sixth grades, which is when they had more than 160 hours of lessons before the current experiment started.

Table 7-11 shows the standard deviation (SD) among each grade level: third grade (1.9), fourth grade (1.6), fifth grade (0.9), and sixth grade (1.1). The scores among the children were considerably different. However, the older children at *Elementary School B* had narrower deviations when compared with the younger children. This indicates

that the older children had been accumulating many exemplars during the lessons, so their learning exemplars had influenced their successful establishment of FMCs considerably. Regarding the fourth graders, who had approximately 90 hours of lesson before the experiment, they may have accumulated some transient examples of FMCs while imitating and repeating formulaic words.

Table 7-6

Number of Children Represented in Test 1 × Test 2 (3rd grade, 10 Children)

		Test 2		
	Number of children	–60%	60–80%	80–100%
Test 1	–60%	2	0	1
	60–80%	3	0	0
	80–100%	0	2	2

Table 7-7

Number of Children Represented in Test 1 × Test 2 (4th grade, 6 Children)

		Test 2		
	Number of children	–60%	60–80%	80–100%
	–60%	0	2	0
Test 1	60–80%	0	1	0
	80–100%	0	1	2

Table 7-8

Number of Children Represented in Test 1 × Test 2 (5th grade, 10 Children)

		Test 2		
	Number of children	–60%	60–80%	80–100%
	–60%	0	0	1
Test 1	60–80%	0	0	3
	80–100%	0	3	3

Table 7-9

Number of Children Represented in Test 1 × Test 2 (6th grade, 8 Children)

		Test 2		
	Number of children	–60%	60–80%	80–100%
Test 1	–60%	0	2	1
	60–80%	0	1	1
	80–100%	0	0	3

Table 7-10

A Comparison Between Test 1 and Test 2

		Number of Children (Test 1→Test 2)		
	Grade	Ascending	Upkeep	Descending
Table 20	3rd N=10	1	4	5
Table 21	4th N=6	2	3	1
Table 22	5th N=10	4	3	3
Table 23	6th N=8	5	5	0

These results demonstrate that the fourth and fifth graders might have started the process of analytical learning, indicating 90-160 hours of lessons is needed for this to occur. This type of understanding is gradual, moving from entirely formulaic words to seeing the formulaic words in an analytical way. Based on the results, these grades are an optimal time for EFL learning and to focus on raising the children's attention to forms through structured input with FonF.

The scores of Test 2 for each grade level were not distributed normally（Table 7-11）.*The Kruskal-Wallis test* was carried out and found no significant difference among the grade levels (χ^2 =7.48, p= .058, *n.s.*). However, the p value (.058) indicated a

difference among the grade levels. As shown in Table 7-12, *the Mann-Whitney U test* indicated that the differences among the scores were statistically significant between the third and fifth graders (z=2.27, *p= .02) and third- and sixth graders (z=2.08, *p= .04). However, there was less of a difference between third- and fourth graders (z=1.55, p= .12, *n.s.*), fourth and fifth graders (z=1.19, p= .23, *n.s.*), fifth and sixth graders (z=0.00, p=1.00, *n.s.*), and fourth and sixth graders (z=0.87, p= .39, *n.s.*). The data obtained indicates that the ability for children to accumulate formulaic chunks is effective in establishing FMCs and that their ability to find patterns and imitative produced word chunks seem to advance as the children age; however, this improvement occurs gradually.

Table 7-11

Descriptive Statistics of Third to Sixth Grade Children' Performance on Test 2

Grades	*n*	*Mean*	*SD*	*Min.*	*Max.*
3rd	10	4.6	1.9	2	8
4th	6	6.2	1.6	5	8
5th	10	6.9	0.9	6	8
6th	8	6.7	1.1	5	8

Table 7-12

Score Variations on Test 2 Among the Grade Levels (Mann-Whitney U-Test)

Grades	*n*	*z*	*p value*	*Mann Whitney U*
3th	10	1.55	0.12	*n.s*
4th	6			
3th	10	2.27	0.02	*
5th	10			
3th	10	2.08	0.04	*
6th	8			
4th	6	1.19	0.23	*n.s*
5th	10			
4th	6	0.87	0.39	*n.s*
6th	8			
5th	6	0	1	*n.s*
6th	8			

7.2.6.2 Results of Form-Meaning Connections Through Perceptual Salience

Regarding the results of FMCs found through perceptual salience, Table 7-13 shows the proportion of correct answers given for the verb phrases on Test 2 by the children of each grade level. Figure 7-1 shows their average scores at each degree level. At both Degree Ⅱ and Degree Ⅲ, significant differences in the scores were found between the third and fourth graders. Degree Ⅲ verbs showed to be too complex for third graders (33%) while the children at the fourth grade and above could establish FMCs, even when the verbs (V) and objects (O) were not fully known.

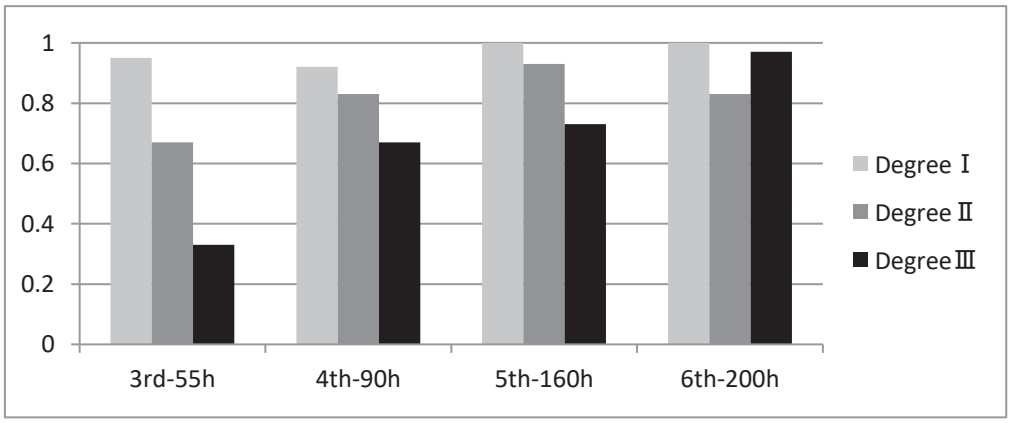
As we observed in Chapter 6, the children's ability to notice verb phrases depends largely on the perceptual salience within a verb phrase. Degree Ⅱ verbs give children the opportunity to try to form meanings. Degree Ⅲ verb phrases were challenging for the children, but from the fourth to sixth graders could score approximately in the 70–80% range, which were remarkable results in comparison with *Elementary School A*.

A graph, shown in Figure 7-1, demonstrates how we also recognized the difference between third graders and fourth, fifth, and sixth graders, that is, we designate that children with 90 hours of lessons were successful in establishing FMCs, even with Degree Ⅲ verb phrases, which were unknown phrases for all the children. They started hearing the input as schematized patterns (such as need *X*, give *X* to *Y* or --- un umbrella, --- a flower --- *Pukin*) rather than the unanalyzed whole chunks.

Table 7-13

Proportions of Correct Answers at Each Grade Level

Test 2 V-O combination	third *N*=10	fourth *N*=6	fifth *N*=10	sixth *N*=8	Degree
drink juice	1.00	1.00	1.00	1.00	Ⅰ
say “Hello”	0.90	0.83	1.00	1.00	Ⅰ
wash my face	0.60	1.00	0.90	1.00	Ⅱ
get a gold medal	0.50	0.50	1.00	0.50	Ⅱ
change my clothes	0.90	1.00	0.90	1.00	Ⅱ
see the flower	0.30	0.67	0.90	0.63	Ⅲ
need an umbrella	0.50	0.67	0.60	1.00	Ⅲ
give a flower to *Pukin*	0.20	0.67	0.70	0.95	Ⅲ



Note. Y Axis: Proportion of Correct Answers of Third to Sixth Graders

Figure 7-1. A Comparison Among Degrees for the Results from Test 2

7.2.6.3 Discourse Analysis and Results

The children's imitative output after the ALT's short dialogue in Phase Ⅲ was transcribed and categorized using the C-unit procedure. Tables 7-14–7-18 show how often the blurry type (explained below) and verb phrases appeared throughout the discourse. The C-unit values are displayed (C1: one C-unit; C2: two C-units; C3: three C-units). The results of this discourse analysis, along with the quantitative data, are shown in Tables 7-19–7-23, which are formulated based on Table 7-14–7-18. Table 7-24 shows the proportion of C2 and C3 values from the output and the proportion of the number of verb-oriented phrases (including blurry type and verb phrases). Figure 7-2 shows the statistics in a graph format. In addition, the data of the output from first- and second graders is also presented using the same procedure which was conducted in all classes as follows:

(1)The ALT talked about "My Busy Morning." Then, the ALT told a story without using gestures.

(2)The JTE asked the children, "How was the ALT's busy morning? Describe what you've heard." The children were encouraged to freely speak any of the words or phrases they had heard.

(3)The ALT told the story of "My Busy Morning" again, this time using gestures.

(4)The children were asked to describe the ALT's story again. The children gave their interpretations. The JTE and the ALT rated each response as correct or made small corrections where needed.

The following section represents descriptions of actions during the transcription:

(1) The transcription symbols are as follows:

・・	Brief pause
・・・・・,	Long pause (more than three seconds)
::	Response is unintelligible
?,	Rising intonation
（ ）,	Unintentional diminished word ending
/,	Error
italic	Loan word as used in Japanese
not italic,	Response in proper English sound
C-unit	C1: one C-unit, C2: two C-units, C3: three C-units

(2) Coding of Verbs

* = Blurry type

** = Verb phrases

In the current study, blurry type indicates that the imitative output has incomplete verb phrases such as ⬚ backpack," which may be replaced with "get my backpack," or "butter ⬚ toast" may be replaced with "butter*ed* toast." If there are some traces of incomplete verb phrases discovered in the way such as using a pause or response with morphemes *-ed* in a certain situation, we call this phenomenon a blurry type.

Table 7-14

Children's Imitative Responses (1st & 2nd Grade, 8 Children, Duration=3min, 10sec)

NO.	Time	Number of child	Transcription	Targeted words	Code	C-unit
1	0:00	C4	*ofuro ni haitte ita.*	/		
2		C1	*toast.*	toast		C-1
3		C3	*toast.*	toast		C-1
4		C2	juice	juice		C-1
5		C7	green peas	/		C-2
6		C8	*okayu tabeta.*	/		
9	1:20	C8	jelly.	/		C-1
10	0:00	C2	*Sode mekutte ita.*	/		
11		C1	*fuku wo kigaeru.*	/		
12		C4	*Mezamashi*	/		
13		C6	*kouyatte kasa sashite ita.*	need an umbrella		
14		C1	*hamigaki*	brush my teeth		
15		C5	*banana*	eat a banana		C-1
16		C1	*nanika miteta*	see the flower		
17	1:50	C3	*hamigaki*	brush my teeth		

Table 7-15

Children's Imitative Responses (3rd Grade, 10 Children, Duration= 4 min.)

NO.	Time	Number of child	Transcription	Targeted words	Code	C-unit
1	0:00	C1	rainy.	rainy		C-1
2		C4	windy？	/		C-1
3		C8	*banana.*	banana		C-1
4		C4	sh‥, shake.	shave		C-1
5		C5	*toast.*	toast		C-1
6		C2	change‥‥‥.	change	*	C-1
7		C10	⁝ umbrella.	umbrella		C-1
8		C4	shoes.	shoes		C-1
9		C8	sleep.	/		C-1
10		C11	juice.	juice		C-1
11		C3	backpack.	backpack		C-1
12		C9	‥ *rose.*	clothes		C-1
13	2:10	C6	tea. ‥ tea.	teeth		C-1
14	0:00	C4	go‥ school.	go to school	*	C-2
15		C2	butter‥ toast. *bata no.*	buttered toast	*	C-2
16		C3	brush‥‥‥.	brush my teeth	*	C-1
17		C2	brushin(g).	brush my teeth	*	C-1
18		C4	*burashi . brush* my‥.	brush my teeth	*	C-2
19		C7	my tee(th).	brush my teeth		C-2
20		C8	sleepy.	/		C-1
21		C11	*"Itai"wa nani?*	shave		
22	1:50	C9	drink juice.	drink juice	**	C-2

Table 7-16

Children's Imitative Responses (4th Grade, 6 Children, Duration=3min, 50sec.)

NO.	Time	Number of child	Transcription	Targeted words	Code	C-unit
1	0:00	C1	*banana.*	banana		C-1
2		C6	brushing.	brush my teeth	*	C-1
3		C5	brush ‥	brush my teeth	*	C-1
4		C6	training?	/		C-1
5		C1	toast.	toast		C-1
6		C4	Flower	flower		C-1
7		C6	choose, ‥Tuesday.	shoes or change		C-2
8	1:50	C6	shoes.	shoes		C-1
9	0:00	C2	wash‥.	wash my face	*	C-1
10		C2	go‥ school.	go to school	*	C-2
11		C6	orange juice	drink juice		C-2
12		C5	umbrella?	umbrella		C-1

13		C1	*terasu ni kireina hana*	a beautiful flower		
14		C6	sleep. *Nemutai*	/		C-1
15		C1	rainy	rainy		C-1
16		C1	*Ame no naka.*	rainy		
17		C6	buttered toast?	buttered toast	*	C-2
18		C3	Kasa wo sashite kita	need an umbrella		
19		C3	‥face‥.	wash my face	*	C-1
20		C1	wash my face	wash my face	**	C-3
21		C6	*Higesori shita. Sha‥*	shave		
22		C1	*Fuku kiteta.*	change my clothes		
23	2:05	C6	*Change, ‥clothes*	change my clothes	*	C-2

Table 7-17

Children's Imitative Responses (5th Grade, 10 Children, Duration= 3min, 20sec.)

NO.	Time	Number of child	Transcription	Targeted words	Code	C-unit
1	0:00	C1	face.	face		C-1
2		C5	flower‥beautiful.	a beautiful flower	*	C-2
3		C6	*It's rainy.*	rainy	*	C-3
4		C8	ame yakara ‥umbrella.	need an umbrella	*	C-1
5		C6	juice.	juice		C-1
6		C7	banana.	banana		C-1
7		C8	school.	school		C-1
8		C8	butter ‥toast.	buttered toast	*	C-2
9		C5	she‥.	shave		C-1
10		C9	wash my‥.	wash my face	*	C-2
11		C3	ge‥ backpack	get my backpack	*	C-2
12		C1	*backpack*	backpack		C-1
13	2:40	C2	change my *clothes*	change my clothes	**	C-3
14	0:00	C6	*I ‥banana.*	banana	*	C-2
15		C4	butter *toast.*	buttered toast		C-2
16		C3	hit‥‥‥alarm.	hit the snooze button	*	C-1
17		C10	snoo(ze)‥.	snooze		C-1
18	0:40	C5	drink juice.	drink juice	**	C-2

Table 7-18

Children's Imitative Responses (6th Grade, 8 Children, Duration= 3min, 20sec.)

NO.	Time	Number of child	Transcription	Targeted words	Code	C-unit
1	0:00	C5	banana.	banana		C-2
2		C1	cheese	/		C-2
3		C4	teeth.	teeth		C-2
4		C6	It's rainy.	It's rainy.	*	C-3
5		C5	butter toast.	buttered toast	*	C-2
6		C8	beautiful flower.	beautiful flower	*	C-2
7		C7	run.	/		C-2
8		C3	time.	/		C-1
9		C4	change my ‥.	change my clothes	*	C-2
10	1:50	C7	umbrella.	umbrella		C-1
11	0:00	C1	backpack.	backpack		C-1
12		C4	*Sha*‥?	Shave		C-1
13		C6	‥my face.	wash my face	*	C-2
14		C5	*eat*‥banana‥*flake?*	eat a banana, granola cereal	*	C-3
15	1:30	C7	drink juice.	drink juice	**	C-2

Table 7-19

Frequency of Responses (1st&2nd Grade, 8 Children)

		Frequency
Blurry type		0
Verb phrases		0
Total number of verb phrases oriented		0
C-unit	C-1	5
	C-2	2
Total number of responses		17

Table 7-20

Frequency of Responses (3rd Grade, 10 Children)

		Frequency
Blurry type		7
Verb phrases		1
Total number of verb phrases oriented		8
C-unit	C-1	16
	C-2	5
Total number of responses		22

Table 7-21

Frequency of Responses (4th Grade, 6 Children)

		Frequency
Blurry type		7
Verb phrases		1
Total number of verb phrases oriented		8
C-unit	C-1	12
	C-2	5
	C-3	1
Total number of responses		23

Table 7-22

Frequency of Responses (5th Grade, 10 Children)

		Frequency
Blurry type		8
Verb phrases		2
Total number of verb phrases oriented		10
C-unit	C-1	9
	C-2	7
	C-3	2
Total number of responses		18

Table 7-23

Frequency of Responses (6th Grade, 8 Children)

		Frequency
Blurry type		6
Verb phrases		1
Total number of verb phrases oriented		7
C-unit	C-1	4
	C-2	9
	C-3	2
Total number of responses		15

Table 7-24

C2 + C3 Unit Ratio and Verb Phrase Oriented Ratio at Each Grade Level (%: Percentage)

Grade	C2 + C3 unit ratio (%)	Verb phrase oriented ratio (%)
1st & 2nd	11.8	6
3rd	21.7	36.8
4th	21.7	34.8
5th	50	55.6
6th	73.3	46.7

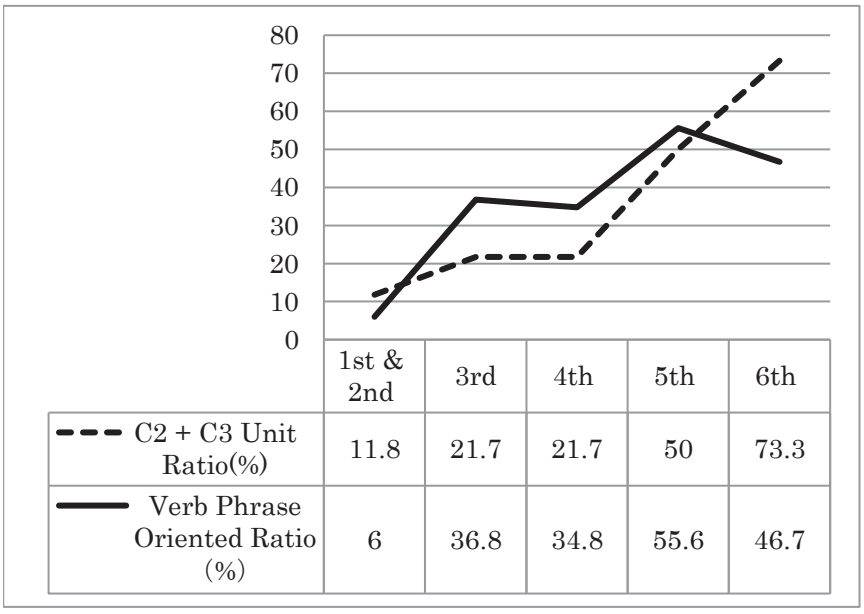


Figure 7-2. C2 + C3 Unit Ratio and Verb-Phrase-Oriented Ratio for Each Grade Level (X Axis: Grades; Y Axis: %)

The results can be summarized as follows:

(1) The first- and second graders tended to rely on scenes or situational contexts to learn new vocabulary but did not yet notice forms. Older children, on the other hand, can

understand contexts and also demonstrate the ability to notice forms. Younger children picked up known words (such as banana from Table 7-14: No.15) and had a tendency to ask questions in both Japanese and English. Interesting and salient contents for these children were their primary focus of attention, so their English expressions did not connect with gestures or the proper meaning (See Table 7-14, No.11: *fuku wo kigaeru*). However, during storytelling, first and second graders were interested by the content, even when there were unknown expressions. The third graders tended to pick up some familiar nouns from everyday expressions (See Table 7-15, No.6: change・・・, No.7, umbrella) and gave responses mostly in English with very little Japanese. The fourth graders tended to murmur Japanese silently to remember a particular scene and recall the targeted English sound (See Table 7-16, No. 22: *fuku kiteta*, No.23: Change・・clothes).

The fifth graders often attempted an output using language slots (See Table 7-17, No.10: wash my・・, No.11, ge・・backpack). The sixth graders appeared to understand nouns and attempted to recall several blurry types and those types' accompanying verbs (See Table 7-18, No.13: ・・my face). They also demonstrated a decreasing output. We surmise that 12-year-old children prefer to produce the sentences that they clearly understand but are reluctant to say unknown phrases.

Pinter(2007) suggested that younger children are interested in the meaning and function of new languages more holistically while older children will develop more awareness of a language, its component parts, separation, a careful analysis of grammar, and accumulation of lexis. The results of the current study largely correspond to Pinter's views.

(2) When analyzing C-units(See Figure 7-2), the younger children tended to repeat the nouns and loan words, so their C-unit value was mostly 1. Older children, meanwhile, tended to produce an output with word combinations, so their C-unit values were mostly 2 or 3. The C2+C3 ratio became greater at higher grade levels (11.8% for the first and second graders and the 21.7% for the third graders). The blurry type output increased from the third grade (See Table 7-15, No.14: go ---school, No.18: brush my ---). The verb-phrase-oriented ratio increased significantly at higher grade levels (6% for the first and second graders, 36.8% for the third graders). The fifth graders, who scored the highest verb-phrase-oriented ratio (55.6%),showed the ability to output verb phrases imitatively and correctly (Table 7-17, No.11: ge ---backpack, No.13: change my clothes ---). These data allude to language slots that may develop at this age range.

(3) Most of the children gave appropriate responses to “change my clothes,” “drink juice,” and “wash my face” following the ALT’s gestures. We can surmise that the method of aiding FMCs for verb phrases through the use of gestures is fairly successful. The verb phrases that children could understand may be a first step to notice verb and verb phrase forms. Ninio (1999) identified that the verb output by 2-year-old children in L1 is initially restricted in volume; they first need to master what he called path-breaking verbs before their ability to use verbs consistently increases (usually within several months). Exemplar-based learning of similar path-breaking verbs in EFL learning may trigger cognitive learning as well.

(4) Overall, the children’s output of whole verb phrases was not high; indicating that verb phrases can be somewhat difficult, particularly when it comes to output performance. As we look at the blurry type output, the children may have been listening to word combinations but seem to need the teacher’s directions to grasp what they were hearing. For instance, the phrases “get *X*,” “see *X*,” “need *X*,” and “put on *X*” that were included in the ALT’s talk did not appear, even among the sixth graders’ outputs. They did not grasp the meanings of these phrases as effectively as other phrases such as “change *X*,” “drink *X*,” or “wash *X*.” Nevertheless, given the fact that the sixth graders managed to produce high scores on even difficult verb

phrases (see-=0.65, need-=1.00, give-=0.95) on Test 2, the sixth graders' scores were remarkably different from third graders (See Table 7-13, need-=third: 0.50, sixth: 1.00; give-=third: 0.20, sixth: 0.95). This phenomenon firmly supports the fact that sixth graders can schematize verb phrases at a receptive level (e.g., "need *X*" or "give *X* to ~"). Otherwise, the unknown verb phrases that include "need" or "give" would not be stored in the children's minds.

(5) Table 7-24 demonstrates the remarkable difference between fourth graders and fifth graders who had 90 to 160 hours of lessons prior to the experiment; this amount of instruction can also lead to higher C2+C3 ratios, as well as a higher verb-phrase-oriented ratio. The rate of C2+C3-unit of fifth graders show 50 %, whilst, one of sixth graders show 73%. The latter children showed impressively high rate. C-unit values of 2 or greater may indicate the children's cognitive learning of verb phrases in a quantifiable way. The results correspond with the statistical results shown in Table 7-12.

(6) The first, second, and third graders often responded to the teacher's queries in Japanese or had some difficulties with the target words after listening to the ALT. In this procedure, children were encouraged to output the sound from their memories and to connect the form with its meaning during the ALT's talk. Although the

younger children could recognize loan words and certain nouns, they struggled to pick up or to clip out word combinations and basic word patterns from the context. At this beginning period of exemplar-based learning, children may listen to each new word with a one-to-one correspondence and may never find similar patterns across the input. On the other hand, the reason why the fourth and fifth graders begin reproducing the formulaic words frequently (e.g., the blurry type and C2+C3-unit) is because they recognize the patterns of the input.

7.2.7 Discussions

7.2.7.1 Impact of Input Frequency on Form-Meaning Connections for Verb Phrases

From the results, we can conclude that the higher scores seen in the older children and the emergence of a blurry type of output and higher verb-phrase-oriented ratios starting in the third and fourth grades suggest that children between the fourth and fifth grades begin developing the ability for analytical learning through their noticing of

FMCs. Thus, these children with a considerable number of hours of instruction may reach a point where they can pay attention to the sound form and its language slot.

The results obtained in this chapter—the development of FMCs for verb phrases between third graders and fifth- and sixth-graders–will likely occur at different points in time for each child. The children attained high C-unit values and verb-phrase-oriented outputs (See Figure 7-2). They also gave a higher proportion of correct answers on both Test 1 and Test 2 when compared with third graders and children in lower grades (See Table 7-7). Furthermore, none of the fourth-sixth graders scored under 60% on either Test 1 or Test 2 (See Tables 7-7, 7-8, and 7-9). We can surmise that children begin to acquire the essential ability to absorb an input cognitively and establish FMCs successfully after a considerable number of hours of instruction (approximately from 90 to 160 hours of lessons). Based on the fact that the fifth and sixth graders demonstrated analytical ability in the FMCs for verb phrases, which may indicate their cognitive ability to find language patterns (e.g., change *X*, drink *X*", "wash *X*", see *X*, give *X* to *Y*), there is room for improvement in EFL lessons in which the teachers can lead the children's attention to the form while they are interested in a meaningful context.

Referring to the children's cognitive development by age (See Table 2-1) once again, to experience sufficient learning with proper input frequency first through third grade

(prior to age 9), similar to what the children at *Elementary School B* experienced, brings them a valuable time for listening to the whole chunks, picking up comprehensible input with less analytical way, and mimicking exemplars unless they understand the meanings. It does not mean that younger is better to start learning L2 language, but does benefit accumulating FS which plays an important role for the future L2 learning prior to recognizing a transition period (approximately age 10-11) in the successive cognitive development. To be more specific, even though a child starts learning L2 at older age, a certain amount of exemplar-based learning should not be dismissed. However, the older learners tend to be analytical and intolerant of contradictions and errors (See Table 2-1), hence, they are prone to make light of the effectiveness of FS.

Afterwards, they should be guided toward a stage where they can develop the ability to establish FMCs. Here, focusing only on the pure meaning is misguided for children's L2 improvement and will fail to grasp an optimal timing to let children experience the cognitive procedural knowledge at the beginning of their exemplar-based learning. To determine whether the input frequency can have a significant impact on the children's cognitive learning abilities, further discussion will focus on a comparative analysis between the fifth-graders at *Elementary School B* and the same graders at *Elementary School A,* who had just begun their EFL learning.

7.2.7.2 Children's Schema Formation of Verbs

We surmise that exemplar-based L2 learning children who had been exposed to the structured input and such environment in *Elementary School B* where the teachers and the children interact in a meaningful way are gradually possible to move forward forming language slots. With an imitative output of blurry type and verb-phrase-oriented expressions, children form word frames as a type of language slot. The verb phrase input is not supposed to be a simple formulaic chunks but rather, it should be considered a blurry frame that is schematized in each individual case. That is, the schema formation of verbs occurs within the input received. For instance, "go ---school" and "brush my ---" uttered by third graders (Table 7-15), "brush my --- " and " go --- school" uttered by fourth graders (Table 7-16), and "wash my face," "ge---backpack," and "change my clothes" uttered by fifth graders (Table 7-17) all represent the schematized frames that are memorized and reproduced when children are able to understand the words' meaning in situational context. Therefore, verb phrases that children can easily identify when gestures are used in the teaching to be expressed frequently in their imitative outputs. Meanwhile, verb phrases whose meanings are difficult to identify even when gestures

are used (e.g., need *X*) or verb phrases with a less salient sound (e.g., get *X*, put on *X*) do not appear in the children's imitative outputs. In the latter case, the children seemed to struggle to establish FMCs and schematize the frames in Phase Ⅲ. However, even these difficult verb phrases became noticeable through FMCs that were on Test 2, which was conducted later in Phase Ⅴ (e.g., see: fifth grade=0.90, sixth grade=0.63; need: fifth grade=0.60, sixth grade =1.00). Comparing the word familiarity of fifth graders before being taught certain verb phrases (e.g., e-wf, see=0.00, need=0.12) and after being instructed the verb phrases, the children demonstrated a greater ability to identify the meanings of verb phrases. The results imply that FMCs at the input processing level are more active than in the children's imitative outputs. In other words, a children's ability to listen to the sound form precedes imitatively uttering the sound form.

We claim that fifth- and sixth graders in L2 learning do not merely memorize or imitate whole verb phrases; instead, they can pick up loan words or familiar nouns and output them. Thus, fourth graders can demonstrate analytical thinking at least to the extent that they can form language slots with salient inputs rather than only remembering whole formulaic chunks. As evidence of this, the children were able to express phrases such as "brush my ---" and "--- my face." In general, children may form schemas where the *"---"* parts must be included in the language slots. Further evidence

is that whole formulaic chunks did not appear frequently (e.g., “get my sauce” in L1 rational). The sixth graders managed an 80% overall score on difficult verb phrases. We consider that fifth- and sixth graders start to form prototypes (“brush my *X*” or “*X* my face”) and establish FMCs successfully when aided by the situational context, perceptually salient words, and language slots that are formed word by word and when utilizing a similar process of L1 verb acquisition, where appropriate.

7 .3 Conclusion

With the results obtained in this chapter, we came to the following conclusion:

The first hypothesis was supported. The more the children experienced exemplar-based learning, the better they could establish the FMCs for verb phrases, even with Degree Ⅲ verb phrases (see Chapter 6). Exemplar-based learning and how often it is instructed as the amount of input significantly influences successful FMCs. Furthermore, there were two major findings in the current experiment. First, each grade and its accumulation of lesson time was not simply proportional to increase of the scores on Test 1 and Test 2, C1＋C2 unit ratio, and verb-phrase-oriented ratio. There was no drastic difference between fifth and sixth graders, and the sixth graders were not superior to

fifth graders all the time. This indicates that fifth graders with 160 hours of lessons or more had reached a ceiling regarding FMCs. We can assume that these children need a trigger to establish FMCs more effectively. Second, exemplar-based learning narrows the gap between children who establish FMCs successfully and those who can not; this type of learning can raise the minimum standard level of FMCs. But here, the older children at *Elementary School B* had narrower deviations compared with the younger children.

The second hypothesis was largely supported. Children's schema formation of verbs occurred through a verb phrase when the children underwent exemplar-based learning with a certain amount of input. We conclude that fifth- and sixth graders with 160 hours of lessons or more can form schematized patterns, rather than merely memorize or imitate whole verb phrases. The present study found a common point in the children's learning process between L1 and L2 learning in the classroom. Fourth graders showed the ability to form transient formulaic chunks. On the other hand, younger children showed that they exclusively were paying attention to the ALT's talk rather than sound forms; however, they tried to pick up a salient part and familiar words within the whole chunks. There was three major pieces of evidence here. First, Degree Ⅲ verb phrases were challenging for the children, but the fourth–sixth-graders could score approximately in the 70–80% range, which was remarkable. The scores of "need *X*" and

"give *X* to *Y*" in Degree Ⅲ for sixth graders were mostly perfect, even though they were unknown phrases for the children. These children were supposed to start hearing the input as schematized patterns (such as need *X*, give *X* to *Y* or --- an umbrella, --- a flower --- *Pukin*) rather than as unanalyzed whole chunks. Second, as shown in the graph in Figure 7-1, we also recognized the difference between third and fourth graders and fifth and sixth graders. Children in the fifth and sixth grades began to notice the FMCs for verb phrases, even with higher word combination levels, when they had been taught a significantly longer time (approximately between 90 to 160 hours), Third, as the graph shows in Figure 7-2, we recognized that older children demonstrated analytical thinking to the point where they could form language slots such as blurry type of output, the C1 ＋C2 units, and the verb-phrase-oriented ratio. According to the transcription of the children's imitative responses, fifth and sixth graders were starting to form prototypes ("brush my *X*" and "*X* my face") and establish FMCs successfully when aided by a situational context, perceptually salient words, and language slots formed word by word.

To summarize how exemplar-based learning works, it can be viewed as a process that occurs in three stages: (1) exemplar-based learning focusing on meaning, (2) exemplar-based learning focusing on establishing FMCs; and (3) exemplar-based learning with schema formations within language slots. The case study conducted at

Elementary School B suggests that a gradual progression to cognitive learning can be possible in *English Activities* by carrying out stages (1) to (3). After these stages, as a stage (4), children may be able to segment the chunks (need/ a *X*) and replace a part of the chunks ("need a handkerchief" instead of "need an umbrella").

To summarize how learning works and benefits EFL learning, it can be viewed as follows: exemplar-based learning gives learners the opportunity to imitate and repeat what they hear and connect its meaning with the corresponding English sounds. Language is learned from examples retrieved when analyzing language slots. These procedures are considered to be fundamental processes of L2 language. Continuing with the results obtained in this chapter, we must analyze the learners at later stages (e.g., junior high school) to observe how the storage of exemplars may help them find language patterns, notice the forms, and understand grammatical constructions when they are assisted by a teaching using explicit grammar in a dual model.

Chapter 8

Amount of Input on Verb Phrases Comparing Verb Phrases

Comparing Two Elementary Schools' EFL Lessons (Age 11)

8.1 Introduction

In Chapter 6, we observed a case study detailing how fifth graders (about 11 years old) at *Elementary School A* could be prompted to notice the FMCs for verb phrases. In Chapter 7, we observed another case study of FMCs, this time with first–sixth graders at *Elementary School B* who had been taking *English Activities* since the inception of the EFL program 5 years earlier. In this chapter, we compare and analyze the results of the fifth graders at *Elementary School A* (25 hours of lessons prior to the experiment: *AES*) with fifth graders at *Elementary School B* (160 hours of lessons prior to the experiment: *BES*) to see how effectively children establish the FMCs for verb phrases. The major difference between *AES* and *BES* is the accumulation of lessons and the amount of input the children received, as we showed in Chapter 7. *AES* is an ordinary

case of Japanese children in their first year of *English Activities*, therefore, the analysis of the results of *AES* is synonymously connected to most other public schools in Japan using a similar curriculum and texts, while *BES* is a far advanced case that is supported by the city board of education. However, the *BES* is not likely to be found in private schools, which have a particular program taught by veteran teachers and ALTs. At the initial stage of examining *AES*, we can identify whether *AES* can find language patterns from the exemplars they hear and whether their schema formations of verbs occur through the FMCs for verb phrases to the extent that *BES* showed in Chapter 7. In this chapter, we will compare and analyze the difference between *AES* and *BES* which may indicate a progressive development or a possible transition depending the learning experience.

In the previous chapter, the more *BES* experienced exemplar-based learning in the amount of input received, the better they could establish the FMCs for verb phrases, in particular with Degree Ⅲ verb phrases（See Chapter 7）. The fact that *BES* was largely successful in establishing the FMCs for verb phrases shows that sufficient accumulated exemplars can help children connect the sound form with its meaning. However, as discussed in Chapter 2, children's cognitive development, which is related to their age, may influence the degree of establishing FMCs. Therefore, we need to create

a hypothesis: *AES* (age 11: fifth grade) children are unsuccessful in establishing FMCs when their number of lessons does not reach the same, sufficient number shown for *BES* (age 11: fifth grade) children. If the hypothesis is supported, the FMCs and schema formation for verbs will be shown to be influenced by the number of lessons and its amount of input rather than the age of the children and vice versa.

8.2 Comparing Two Elementary Schools EFL Lessons at the Fifth Grade

8.2.1 Aims

The aims of the current comparison are to discern to what extent children's FMCs for verb phrases in exemplar-based learning reveals a difference depending on the number of lessons taken and amount of input received (hereafter the amount of input. We will also discern whether the children's age is a factor in exemplar-based learning. Thus, the research hypotheses are the following:

(1) The degree of establishing the FMCs for verb phrase is different depending on the amount of input, even at the same age (fifth grade). The degree of establishing FMCs is influenced by the amount of input rather than age.

The variable here is the amount of input prior to the experiment; therefore, we use the same procedures, a similar level for Test 1 and 2 and the same degrees (Degree Ⅰ-Ⅲ) for the classification of the target verbs. To discern the difference between *AES* and *BES,* we will take a careful look at Degree Ⅲ verb phrases.

(2) Children's schema formation of verb phrases occurs through the FMCs for verb phrase when the children undergo exemplar-based learning with a certain amount of input.

The indicators in the present study are the score for Degree Ⅲ verb phrases and the discourse transcribed in the interactions between an ALT and the children. If the children are successfully able to establish the FMCs for the Degree Ⅲ verb phrases, which are unknown to all children, they are starting to hear the input as schematized patterns (the language slot such as "need *X*", "give *X* to *Y*" or the reverse slot "--- an

umbrella" or "---a flower---Pukin"). However, if the opposite were to occur, the children might be hearing unanalyzed, whole chunks all the time.

Based on the obtained results, we will discuss how children's establishment of FMCs through exemplar-based learning works, moves forward forming language slots and how it benefits EFL learning.

8.2.2 Participants and Procedures

To recap, there were 72 fifth-grade participants at *AES*: *Elementary School A* (25 hours of lessons) and 10 fifth-grade participants at *BES*: *Elementary School B* (160 hours of lessons). Thus, the two groups will be defined throughout this chapter as *AES* and *BES.* The difference in the amount of input is shown in Table 8-1. The regular lessons at *AES* were taught by a Japanese teacher of English (JTE), while at *BES,* the regular teachers were a JTE, a homeroom teacher (HT), and a native assistant language teacher (ALT). The experimental lessons were conducted by this author as a visiting JTE, an ALT visiting at *AES*, a regular at *BES*, and a regular JTE at each school.

Table 8-1

Data of the Participants

	AES:Fifth-25 Fifth grade (age 11), *Elementary School A* Conducted in February	*BES:Fifth-160* Fifth grade (age 11), *Elementary School B* Conducted in March
Number of participants	72	10
Experimental lessons	5	5
Accumulated number of lessons	25	160
Regular instructors	JTE (regular)	JTE (regular) ALT (regular) HRT (regular)
Instructors for case studies	JTE (visitor) ALT (visitor) JTE (regular)	JTE (visitor) ALT (regular) JTE (regular)

Note. The Lessons Conducted in the Year 2009

First, the lesson content, the procedure, and the methodology of the tests were intentionally near identical for the purpose of the current comparative study. The lesson procedure at *AES* is shown in Table 6-1 in Chapter 6, while the one at *BES* is shown in Table 7-2 in Chapter 7. Phase Ⅴ at *BES* incorporated productive activities such as storytelling because the children were accustomed to this type of input. However, Phase Ⅴ had nothing to do with the results of Tests 1 and 2.

Second, the case studies focused on introducing verbs that the children at each school had not yet learned. These verbs and verb phrases did not appear in the texts and curriculum that they had used. The respective ALTs' dialogues used at each school were slightly different. As we showed the Teacher Talk in both schools in Chapter 6 and 7,

however, once again, we demontrated them to confirm the level similarity. The dialogue for the *AES* ALT was a bit shorter than that used by the *BES* ALT, but the content was mostly the same, as shown in the following:

Elementary School A

The alarm clock goes off. I *hit the snooze button* and *sleep* more. I *get up.* I *change my clothes.* I *wash my face* and *shave*. I *eat breakfast.* I *eat a banana and buttered toast*. I *drink juice*. I *brush my teeth.* I *get my backpack*. I see the sky. It's rainy. I *need an umbrella*. I *put on my shoes*. I *say "Hello*" to my dog, and I *go to school* (Teacher Talk used in *A*).

Elementary School B

I *hear the alarm*. I *hit the snooze button* and *sleep* more. I *hit the snooze button* again. I *change my clothes*. I *wash my face* and *shave.* I *eat breakfast*. I *eat a banana*, *granola cereal, and buttered toast.* I *drink juice*. I *brush my teeth.* I *see the flower,* a beautiful flower in my terrace. I *get my backpack*. I see the sky. Oh, no! It's rainy. I *need an umbrella.* I *put on my shoes*. I *say "Hello*" to my dog and *go to school* (Teacher Talk used in *B*).

Some features differentiate the classroom environments at both schools. There is a difference in the number of children and the social surroundings of each school. *AES* is located in the center of an urban area; its overall curriculum is fairly intensive and is intended to prepare children for the entrance exams that many Japanese junior high schools require (which currently do not include English knowledge sections). Class sizes are generally around 40 children. *BES*, meanwhile, is located in a rural area and focuses less on preparing children for entrance examinations. Because of the smaller population of the area, class sizes are normally around 10 children.

8.2.3 Analyses of the Results Between the Two Schools (*A* and *B*)

8.2.3.1 The Degree of Form-Meaning Connections for Verb Phrases

We compare the degree of the FMCs for the verb phrases formed by the children. Tables 8-2 and 8-3 show the proportion of correct answers (0–100%) given on Test 1 and Test 2. Table 8-4 shows a comparison of how Test 2's results differ from the results of Test 1, either by increasing, decreasing, or remaining the same.

Table 8-2

Scores for Test 1 and Test 2 (AES: fifth-25h, 72 Children)

	Correct answers (%)	Test 2		
	Range	–60%	60–80%	80–100%
Test 1	–60%	5	3	3
	60–80%	3	7	20
	80–100%	3	6	22

Table 8-3

Scores for Test 1 and Test 2 (BES: fifth-160h, 10 Children)

	Correct answers (%)	Test 2		
	Range	–60%	60–80%	80–100%
Test 1	–60%	0	0	1
	60–80%	0	0	3
	80–100%	0	3	3

Table 8-4

Comparison Between Test 1 and Test 2

	Number of children (Test1→Test2)					
	Ascending	%	Upkeep	%	Descending	%
AES:fifth-25h 72 Students	26	36.1	34	47.2	12	16.7
BES:fifth-160h 10 Students	4	40.0	3	30.0	3	30.0

According to Tables 8-2 and 8-3, the number of children who had scores under 80% was 18 at *AES*, totaling 25% of the participants, while none at *BES* scored below this score threshold on both Tests 1 and 2. This demonstrates that *BES* was successful at

noticing FMCs. Three-fourths of *AES* were successful at establishing FMCs, but the others struggled; this demonstrates that the amount of input of exemplar-based learning can have a positive influence on FMCs.

Taking a look closer, the table shows that the number of children whose scores improved on Test 2 from Test 1 was 40% at both *AES* and *BES*. Whereas, the decreased scores on Test 2 from Test 1 were 16.7% at *AES*, a relatively low number, and the decreased scores on Test 2 from Test 1 was 30% at *BES*, a relatively high number. This indicates that *BES* had the advantage of being able to establish FMCs because of the amount of input they had received; however, the triggers to establishing FMCs were given during Test 1 to both groups, so *AES* was also able to pay attention to the verb phrases and their meanings on this test.

Tables 8-5 shows the descriptive statistics of *AES* and *BES* on Test 1 and Test 2, (excluding the verb phrase, "*see X*"), respectively. As explained earlier, to properly compare the scores from *BES* with the ones from *AES*, the results of Test 1 and Test 2 are presented in percentages (See Table 8-5). *AES* performed better on Test 1 (*BES*, 66.3%; *AES*, 77.08%), while on Test 2, which excluded the verb phrase "see *X*," *BES* performed better (*BES*: 85%; *AES*: 83.32%). In addition, on Test 2, which included the verb phrase "*see X*", *BES* (87.1%) scored 3.8% higher than *AES* (83.32%). However, we

employed the data that excluded verb phrases when analyzing the results. There were differences in the number of participants between the groups, and hence, the data were not normally distributed. To analyze the score of two items (Test 1 and Test 2), a two-way (Test Timing: Test 1, Test 2) and (Group: *AES: fifth-25h*, *BES: fifth-160h*,) analysis of covariance (*ANOVA*) was conducted for each test result. The results are shown in Table 8-6. The comparison between the groups is represented by a line graph in Figure 8-1.

Table 8-5

Descriptive Statistics of Test 1 and Test 2 (AES and BES) (Excluded the verb phrases "see X")

AES (*N* = 10) and *BES* group (*N* = 72)										
	Test 1					Test 2				
	n	*M*	*SD*	*Min*	*Max*	*n*	*M*	*SD*	*Min*	*Max*
AES	*10*	77.08	21.08	12.5	100	10	83.32	17.13	28.6	100
BES	*72*	66.25	30.05	30.07	100	72	85	11.48	75	100

Note. The score is shown as a percentage of the correct answers.

Table 8-6

Comparison Between AES and BES for Test 1 and Test 2: Results of the ANOVA

ANOVA	*AES*(*N*=10) and *BES*(*N*=72)					
	df	*F*	*p*		*partial* η^2	
Groups	1	0.72	0.4	*n.s.*	. 009	
Error	80	507.88				
Time (Test 1-Test 2)	1	10.39	0.002	**	0.12	Test 1<Test 2
Group × Time	1	10.39	0.002	**		
Error	80	263.74				

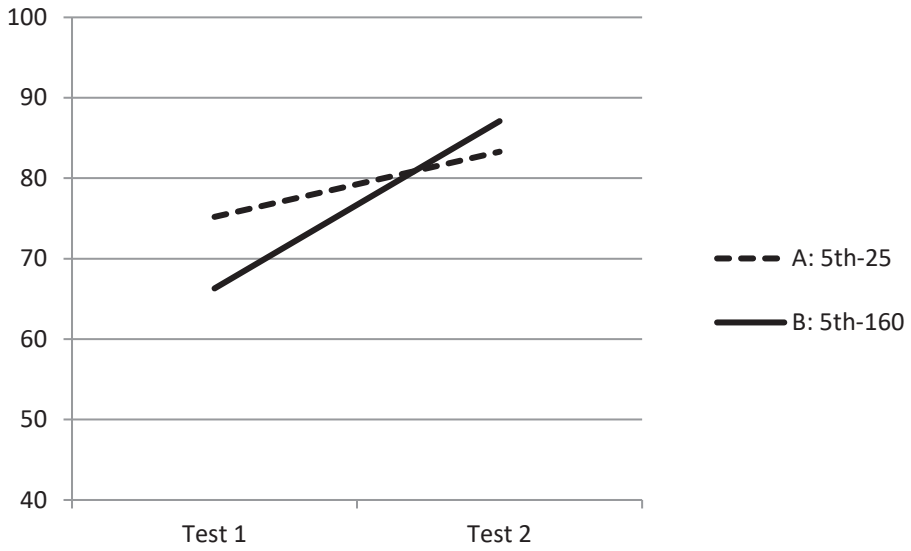


Figure 8-1 .Difference of the Average Scores on Tests 1 and 2 Between the Two Groups

Note. Y Axis: The score is presented in percentages for both *A and B*, Test 2 excluded the verb phrase "see *X*"

According to Table 8-6, the analysis of the total scores revealed that there was no significant main effects between the groups ([*AES=BES*], F [1,80]= .72 , *p*= .4, *partial*

η^2= .009, *n.s.*), whereas there was significant main effects for the test timings ([Test1<Test 2], F[1,80]=10.39, p= .002, *partial* η^2 = .12). The results indicate that both *AES* and *BES* increased their scores on Test 2 and attempted to establish FMCs and find V-O patterns. *BES*, which had more hours of input prior to the experiment, seemed to understand the new formulaic chunks of verbs more than *AES*; however, both groups of fifth graders were likely to improve their form-meaning mapping during the lessons. However, there remained several limitations regarding why the two groups did not demonstrate a large difference of understanding between them: 1) the different number of participants made the analysis difficult, and 2) the reason we chose Test 2 and had it exclude the verb phrase "see *X*" was to adjust the level and make it easier for *AES* because we were not able to choose more difficult quizzes for beginner learners (*AES*). The number of test questions was also limited for this reason. Yet the study implied considerable difference regarding children's FMCs for verb phrases by utilizing the degree of perceptual salience during the same lessons between the two schools.

8.2.3.2 The Results of Form-Meaning Connections Through Perceptual Salience

A comparison between the results for *BES* and *AES* regarding perceptual salience, or Degree Ⅰ-Ⅲ, such as based on the children's word familiarity, is shown in Table 8-7. It shows the proportion of correct answers to verb phrases at Degrees Ⅰ-Ⅲ on Test 2. As shown in Table 8-8, there were no noticeable differences between the two groups for Degree I verbs (drink juice, *AES* 1.00= *BES* 1.00, say "Hello", *AES*, 0.93 < *BES*, 1.00). For Degree Ⅱ verbs, *BES* showed slightly higher scores than *AES* (wash my face, *AES* 0.88 < *BES* 0.90; get a gold medal, *AES* 0.90< *BES* 1.00, change my clothes, *AES,* 0.85< *BES,* 0.90). There were more variations between the groups for Degree Ⅲ verbs. *BES* showed a higher score than *AES* (give a flower to *Pukin, AES*, 0.53<*BES*, 0.70), while *BES* showed a lower score than *AES* (need an umbrella, *AES*, 0.72>*BES*, 0.60), and only *BES* was tested on the phrase (see the flower, *BES*=0.90). Overall, through the proportion of correct answers, *BES* performed better than *AES,* excluding "need an umbrella."

Figure 8-2 shows how the score results of *AES* compare with *BES,* which includes the *BES* third-, fourth-, and sixth graders' scores that were covered in Chapter 7. The graph indicates that *AES* (fifth grade) was less successful than *BES* of the same grade but performed similar to fourth-grade *BES* and better than third-grade *BES*. In other words, the children who have not yet accumulated exemplars are influenced by what

degree the verb phrase falls under (See Figure 8-2 and the circled part). *BES* fifth- and sixth graders clearly demonstrated higher scores, even though the verb phrases were abstract and less influenced by the degree level. Here, the *BES* children have come to possess conscious awareness of linguistic patterns.

Summarizing the results, the average score between *AES* and *BES* showed no significant differences; however, for the proportion of correct answers given, *BES* performed slightly better than *AES*.

Table 8-7

Comparison Between Elementary Schools A and B: Perceptual Salience

A:fifth-25h 72 Children V-O Combination	Ratio of Correct Answers	Degree	B:fifth-160h 10 Children V-O Combination	Ratio of Correct Answers	Degree
drink juice	1.00	I	drink juice	1.00	I
say "Hello."	0.93	I	say "Hello."	1.00	I
wash my face.	0.88	II	wash my face.	0.90	II
get a gold medal	0.90	II	get a gold medal	1.00	II
change my clothes	0.85	II	change my clothes	0.90	II
---	---	---	see the flower	0.90	III
need an umbrella	0.72	III	need an umbrella	0.60	III
give a flower to *Pukin**	0.53	III	give a flower to *Pukin**	0.70	III

Note. Test 2 in *A*：max=7 , Test 2 in *B*: max=8, **Pukin* indicates a proper noun.

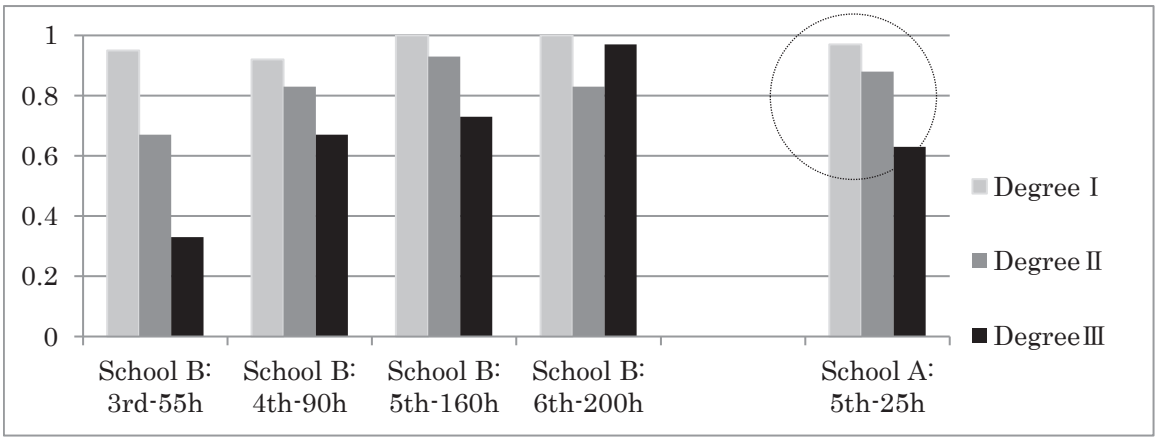


Figure 8-2. Comparison Between Elementary Schools *A* and *B:* Degrees Ⅰ–Ⅲ on Test 2
Figure 8-2. Comparison Between Elementary Schools A and B : Degrees Ⅰ-Ⅲ on Test 2
Note. Test 2 in *A: fifth-25* did not include the phrase "see the flower." The data were compared by referring to Kashiwagi (2011, 2012) . Y Axis: The percentage of correct answers

8.2.3.3 Discourse Analysis

The results of both discourse analyses, along with the qualitative data and the C-Unit quantitative data, are shown, respectively in Tables 8-8 and 8-9 for *AES* and in Tables 8-10 and 8-11 for *BES*. The children's imitative outputs, following the ALTs' short dialogue in Phase Ⅲ, were transcribed and categorized using the C-unit procedure. Table 8-12 shows the proportion of C2 and C3 values from the children's outputs and the proportion of the number of verb-oriented phrases that also include blurry types and verb phrases (refer to Chapter 7 for more details) between *AES* and *BES.* Figure 8-3 is

the same chart found in Chapter 7, with the placement of *AES* identified. From the data, we found two major findings.

First, *AES* were supposed to connect the meanings of verb phrases with the help of words that were familiar to them. Taking a look at the imitative output performance in Table 8-12, their C2 and C3 unit ratio value was 0%, and their verb-phrase-oriented ratio was 8%. Meanwhile, their *BES* counterparts appeared to have focused on whole word chunks or phrases with the help of familiar words because their C2 and C3 unit ratio value was 50%, and their verb-phrase-oriented ratio was 55.6%. *BES* appeared to not only clip the chunks out from the input but also grasped the salient parts; that is, they might have paid attention to not merely the whole chunks but also the language slot and schematized patterns that are accompanied by the salient parts.

Second, for the *AES*, their performance ratings fell below even the *BES* first- and second graders on both the C2 andC3 unit ratio and the verb-phrase-oriented ratio values. This raises the question of why the *AES* gave only imitative outputs despite experiencing the same input frequency as the *BES* first- and second graders. This finding is startling in light of the same group of *AES* (fifth grade) scoring nearly the same level as the *BES* fifth graders on both Tests 1 and 2. The results indicate that learning begins at the listening level; here, the receptive and comprehensible exemplars that children

begin to understand come first, even at the beginning of EFL learning; in contrast, imitative utterances come much later. If children can output imitatively with items such as C2 and C3 units or the verb-phrase-oriented ratio, they come to have schematized patterns (such as give X to Y) in their minds. However, uttering schematized patterns needs longer procedures in which children might have more opportunities to discover exemplars in the classroom. It seems *BES* had reached this stage while *AES* had not.

Table 8-8

Children's Imitative Responses (AES: fifth-25, 35 Children, Duration= 1 min, 38 sec.)

NO.	Time	Number of Children	Transcription	Targeted Words	Coding	C-unit
1	0:00	C9	juice.	juice		C1
2		C8	*bed? bed.*	bed		C1
3		C3	*Hello.*	Hello.		C1
4		C22	shoes.	shoes		C1
5		C5	*toast*	toast		C1
6		C11	sha‥? sha?	shave		C1
7	0:53	C22	face	face		C1
8	0:00	C33	school	school		C1
9		C21	*tokei mitaina ruru*	hear the alarm		
10		C11	*alarm ya‥ alarm*	hear the alarm		C1
11		C7	*change‥*	change my clothes	*	C1
12	0:45	C9	*backpack*	backpack		C1

Table 8-9

Frequency of Responses (AES: fifth-25, 35 Students)

		Frequency
Blurry type		1
Verb phrases		0
Total number of verb phrases oriented		1
C-units	C-1	11
	C-2	0
	C-3	0
Total number of responses		12

Table 8-10

Children's Imitative Responses (BES: fifth-160, 10 Children, Duration= 3 min, 20sec.)

NO.	Time	Number of Children	Transcription	Targeted Words	Coding	C-unit
1	0:00	C1	face.	face		C-1
2		C5	flower‥beautiful.	a beautiful flower	*	C-2
3		C6	*it's rainy.*	rainy	*	C-3
4		C8	ame yakara ‥umbrella.	need an umbrella	*	C-1
5		C6	juice.	juice		C-1
6		C7	banana.	banana		C-1
7		C8	school.	school		C-1
8		C8	butter ‥toast.	buttered toast	*	C-2
9		C5	she‥.	shave		C-1
10		C9	wash my‥.	wash my face.	*	C-2
11		C3	ge‥ backpack	get my backpack.	*	C-2
12		C1	*backpack*	backpack		C-1
13	2:40	C2	change my *clothes*	change my clothes	**	C-3
14	0:00	C6	*I.*	banana	*	C-2
15		C4	butter *toast.*	buttered toast		C-2
16		C3	hit‥‥‥alarm.	hit the snooze button	*	C-1
17		C10	snoo(ze)‥.	snooze		C-1
18	0:40	C5	drink juice.	drink juice	**	C-2

Table 8-11

Frequency of Responses (BES:fifth-160, 10 Children)

		Frequency
Blurry type		8
Verb phrases		2
Total number of verb phrases oriented		10
C-units	C-1	9
	C-2	7
	C-3	2
Total number of responses		18

Table 8-12

Comparison: C2 and C3 Unit Ratio and Verb-phrase-oriented Ratio

	C2 and C3 Unit Ratio (%)	Verb-phrase-oriented ratio (%)
AES: fifth-25 (35 Children)	0	8.0
BES: fifth-160 (10 Children)	50.0	55.6

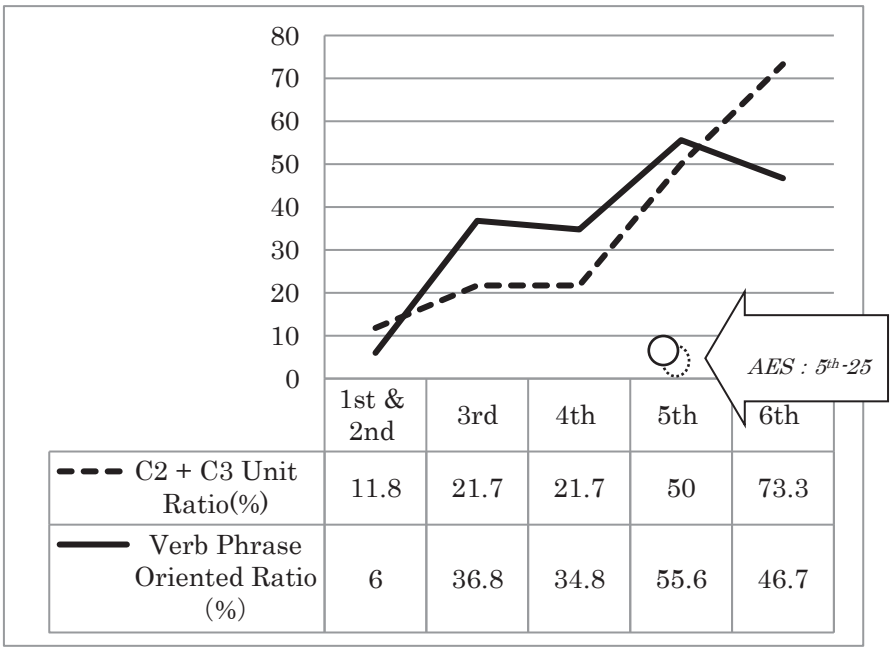


Figure 8-3. C2 and C3 Unit Ratio and Verb-phrase-oriented Ratio: *Elementary School B* (Adapted from Chapter 7, Figure7-2)

Notes. The score of *AES* is indicated(X Axis: Grades; Y Axis: %)

8.3 Conclusion

With the comparison shown in this chapter, we came to the following conclusion.

The hypothesis (1) is partially supported. The results show that the degree to which FMCs can be established is influenced by the amount of input received rather than age. Regarding to what degree children can establish the FMCs for verb phrase, there was no significant difference between the groups, even with the varying amounts of input. Both *BES* and *AES* scored well on Degrees Ⅰ, Ⅱ, and Ⅲ. However, this conclusion is somewhat debatable. For instance, taking a look at the proportion of correct answers, *BES* performed slightly better than *AES* on most of the target phrases, save for "need an umbrella." Furthermore, *BES* did not have a score lower than 80% on Test 2 while *AES* did. This shows that exemplar-based learning can raise the minimum standard level, and children can have a firm foundation of the FMCs of any unfamiliar word chunks. In addition, there is no noticeable difference between the groups regarding their average scores. However, it is presumed that *AES* merely connected the sound form with its meaning by using words that were familiar to them. Here, they may have picked up those keywords and used them as hints. Also, *AES*'s C2 and C3 unit ratio value was 0% and verb-phrase-oriented ratio was 8%; in contrast, *BES's* C2 and C3 unit ratio value

was 50% and verb-phrase-oriented ratio was 55.6%. This phenomenon can be interpreted as follows: exemplar-based leaning on the listening level comes first, and the imitative output level comes later. It is said that *BES* children had been brought up free from the difficulty of listening to English then reached smoothly the stage of producing imitative output. In conclusion, the degree to which children can establish the FMCs for verb phrase differs slightly depending on the amount of input, which plays more of a role than age.

Hypothesis (2) is largely supported based on the proportion of correct answers given for Degree Ⅲ verb phrases and the transcription of the children's imitative outputs. Children's schema formation of verb phrases occurs when the children undergo exemplar-based learning with a certain amount of input. *BES* was able to establish verb phrases with a high proportion, excluding "need an umbrella." They were supposed to have begun hearing the input as schematized patterns (the language slot, such as "need *X*", "give *X* to *Y*" or the reverse slot "--- an umbrella" or "---a flower---*Pukin*"). In addition, the utterance of a blurry type such as "C3: ge---back pack," "C8: butter --- (ed) toast," and "C9: wash my ---" (See Table 8-10) shows that if *BES* (over fourth grade) seemed to be looking for "--- ", that is, something omitted in phrases. In other words, the children's outputs that embraced a blurry type. This tendency was not found in *AES*. However,

AES, which was at the very beginning level, also seemed to have found some schematized patterns or salient part in the slot rather than merely hearing unanalyzed, whole chunks all the time. In this sense, the exemplars with the input frequency may have given the children a fundamental language sample. However, *AES* did not seem to have reached the stage in which the children might have more opportunities for retrieving exemplars. When they had the short dialogues with the ALTs, almost all responses came with just one word, such as "C5: toast," "C9: backpack," and "C22: face" (See Table 8-8), and thus, they were unable to form a phrase or a sentence.

Finally, we want to shift the focus to how the procedures of FMCs and exemplar-based learning can benefit EFL learning. What is the reason behind why the *BES* children could establish FMCs with relatively complex verb phrases such as "see *X*" and "give *X* to *Y*"? This is probably because *BES* had already got a hold of the idea of not only the language slot ("*X* ---" such as "*X* runs"), but also the reverse slots ("---*X*") such as "I like *X*". Elementary school children using "I like *X*" or "Do you have *X*?" without any explanation of the grammatical rules are likely to pay attention to the language slots or the reverse slots, focusing on noticeable words; at least, they have formed schema formations in the block of words they possess. Tomasello called this an "utterance schema" (Tomasello, 2000). Once children come to grasp the schematized pattern, each slot can

be segmented into parts such as "I like/ *X*" or "Do you have/ *X*?" It may lead children to notice the forms and abstract rules, and they may attempt to change the part of language slots or the reverse slots. For instance, "I like oranges" can be replaced by "I like watermelons," or "Do you have a book?" can be replaced by "Do you have a(n) eraser?". However, each original example accumulated from the input firmly remained as a foundation so that the word sequence or the slot filter "see *X*" can be recognized as the minimum units in their mind. A further necessary line of investigation is to conduct direct interviews with the children on how they infer the meaning of "need" or "want" and what part of the phrases they paid attention to first. Taking their age into consideration, qualitative research using an interview technique may have some potential in future research. Applying the finding to the next experiment conducted in Chapter 9, we will examine how children notice these language patterns and how the patterns can be filled by alternative words.

However, in this chapter, there were some limitations when it came to comparing the differences between *AES* and *BES*. First, on Test 2, "see *X*" is used for *BES* but not *AES* although other conditions are strained, and the target verb phrases are precisely the same for both schools. Second, the model talk prepared for the interactions between the ALT and children was similar, but the same word was not used in every sentence.

Therefore, the comparison between *AES* and *BES* must be interpreted considering these limitations.

That being said, the procedures of the lessons were carefully devised by the author based on the concept of exemplar-based learning, which can occur in language use when paid attention to by teachers who can give a comprehensible input with gestures, allowing the children to try to read the teacher's intentions. Their environment in language use is defined as joint attentions (Tomasello, 2003), as we pointed out in Chapter 2. In this sense, the results can be interpreted as the process of fundamental language development in the L2 classroom.

Chapter 9

Children's Noticing of Language Structures: Focus on Token Frequency and Type Frequency of Verbs in Storytelling (Age 11)

9.1 Introduction

In Chapter 6, we observed a case study of how fifth grade children (about 11 years old) at *Elementary School A* could be prompted to establish the FMCs for verb phrases. In Chapter 7, we found first–sixth graders at *Elementary School B* could establishing the FMCs for verb phrases after going through an EFL program that had been established 5 years earlier. In Chapter 8, we compared and analyzed the results of the fifth-grade children at *Elementary School A* (age 11, being given 25 hours of lessons prior to the experiment: *AES*) with the fifth-graders at *Elementary School B* (age 11, being given 160 hours of lessons prior to the experiment: *BES*) regarding how effectively children's FMCs for verb phrases and schema formation of verbs occurred in both schools; however, the amount of accumulation of chunks of language (FS) were considered to be

far more significant than what was apparent at *Elementary School B*. The Degree Ⅲ verb phrases were used for clarifying the significant roles of FS, and the score of the most difficult Degree Ⅲ verb phrases showed varying results.

We can summarize the results of Chapters 6, 7, and 8: children at this age (age 11, fifth grade) will vary in degree depending on perceptual salience, such as English word familiarity within the verb phrases. When teachers incorporated perceptually salient words when teaching verb phrases, they were able to draw children's attention toward establishing FMCs more effectively. This stresses the importance of a teacher's verbal structured input in the classroom. Furthermore, the more children were given increasing levels of input, the more they were likely to imitate and output more than two or three words units in the interactions between the teacher and children; thus, the children came to form schematized patterns of verbs in exemplar-based learning, showing that the noticing of language patterns and schema formation of verbs could be brought out by the teachers' structured input.

Therefore, in this chapter, we exclusively focus on the extent to which children can notice the language patterns depending on whether the trigger of noticing was provided in the classroom. The trigger—FonF—using a structured input and providing token frequency combinced with type frequency will be effectively used in this chapter. If the

trigger affects the result positively, the children are supposed to notice the language patterns and start to segment the whole chunks successfully; then, they will be able to successfully schematize language patterns.

9.2 Development of the Story (Token Frequency Combined With Type Frequency)

Because structured input can be realized by teachers, for the current study, to boost and refine such input and support the teachers, the author developed an original teaching resource entitled “The Story of the Zodiac” in 2012. “The Story of the Zodiac” is based on an ancient tale and was created as a digital story with the goal of familiarizing children with verb phrases. A recording of the story was made by native speakers and was supplemented with sound effects. The purpose of this teaching material was to achieve a language environment in which children would be able to delightfully listen to the verbal input, particularly verb phrases with both token and type frequencies, through storytelling.

In the present study, language instruction where the teacher provides token frequency first and then adds type frequency is termed token frequency combined with

type frequency. Lieven& Tomasello (2008, p. 172) stated that the "order of emergence of particular verbs is significantly correlated with the frequency of use in language addressed to the children." Therefore, the author of the current study retold the story and added some parts containing the target verb phrases. Using this story, the teacher repeatedly had children listen to verbal input with token frequency and then with type frequency. In the story, the focus was primarily on "Verbs+Objects"; however, language slots (e.g., "Verbs+Objects," "Pronouns+Nouns," "Verbs+Adverbs," and so on) used in the digital story were also added. Pre- and postactivities in which children were able to touch the pictures displayed on a digital monitor were also developed. This research also examined how the digital story was used to gain both token and type frequency with meaningful story in the *T Pilot Elementary School* (hereafter *T*). The digital story was distributed to more than 200 public elementary schools in the *N* Prefecture and had been used as materials for drama lessons (Appendix 9-A). The materials were also adopted as a digital story in an authorized textbook later on (Kairyudo, 2018, in press).

9.3 Focusing on VOO Constructions

A focus was placed on the ditransitive (verb-object-object [VOO]) constructions of "give," which is repeated in the story so that how the children processed the schema formation of verbs (e.g., "I give the third year, Tiger") could be observed. The focus was also placed on VOO constructions to examine the extent to which VOO elicits children's schema formation of verbs. Goldberg (1995) also claimed that VOO was a focus of the current study because of its schematized construction, or in other words, "give *X* the *Y*" implies "give caused *Y* to move to *X*". Recent studies have shown that adult L2 learners develop schemas and learn abstract constructions regarding give OO (Ellis & Larsen-Freeman, 2009; Manzanares & Rojo Lopez, 2008). N.C.Ellis and Ferreira-Junior (2009a, 2009b) pointed out that the verb object locative (VOL; e.g., put it in) and verb argument construction (VAC; e.g., "give *X* the *Y*") are highly formulaic and might be positively influenced by the input frequency. Accordingly, it has been hypothesized that the construction of "give *X* the *Y*" might allow the schema formation of verbs to be elicited if the *X* and *Y* parts can be replaced with alternative words (e.g., "give you the ball")

However, very little research has been conducted using classroom experiments that apply formulaic sequences to L2 learning (N. C. Ellis & Robinson, 2008). Furthermore, even though the transition to *instance to rule* is expected, no studies have

been conducted on prepubescent children in the EFL classroom. Therefore, the current study was conducted to answer the following two questions:

(1)To what extent do 11-year-old children establish the FMCs for verb phrases and find language patterns within FS?

(2)Does token frequency combined with type frequency using a structured input trigger the recognition of language patterns in children and prompt the process of schema formation of verbs, such as VOO constructions and other verb phrases?

9.4 Experiment in *Elementary School T* (Age 11)

9.4.1 Aims

Based on the research questions above, first, a process in which children went through token frequency in storytelling activities (including type frequency incorporated in the original story) was observed. Then, it was compared with the process in which children underwent a token frequency technique with an increasing type frequency

through both the teachers' input and the storytelling activities. A comparison between the two groups is as follows:

(1)Story-based token and type enhancement (*SBE*): Token frequency combined with type frequency is used exclusively and is based solely on the story, and the teacher does not use any structured input.

(2)FonF-based token and type enhancement (*FBE*): "Token frequency combined with type frequency" is used in both the story and through the teachers' structured input which is one of options of FonF approach.

9.4.2 Procedures

The participants were fifth-graders in *Elementary School T*. They started learning English in the first grade and participated in approximately 110 units (45min. for each unit) before taking part in the current study. The English activities were taught by a homeroom teacher and an assistant native speaker of English. The textbook typically used was *Hi, Friends! 1 & 2.* The teachers mostly use only English in the classroom,

and while speaking in English, the children actively participate in communicative activities.

The author conducted this experiment in coordination with the teachers. The children listened to "The Story of the Zodiac" and learned the content with pre- and postactivities and role-playing. All procedures were performed eight times (each unit was 45 minutes) and divided into four phases; Tests 1, 2, and 3 were given for each of the first three phases, and the fourth phase was used for acting out a drama (Table 9-1).

To observe the children's FMCs for the verb phrases, they were given listening tests that connected the English sound with the story's pictures that represented the meaning. The pictures for the tests were captured from the digital story. In the tests, the children attempted to connect the picture with the sound of FS. Following the national course of study in Japan, which focused exclusively on teaching English with a sound input (MEXT, 2008a) up to 2013 when the experiment was conducted, no alphabet letters were used, and no literacy skills were taught.

The participants of fifth graders in *Elementary School T* was divided into two groups. Children in A(*FBE*) were instructed in the same way as those in B(*SBE*). However, after Phase 1, children in A(*FBE*) began to listen to chant No.4 and No.5 (Appendix 9-A-preactivity), which included type frequency, role-playing, and

postactivities in which the teacher increased the type frequency. In contrast, children in B(*SBE*) were instructed in the same way as those in A(*FBE*), excluding chant No.4 and role-play using No.5 after Phase 1. So the difference between the two groups came in the instruction for A(*FBE*) including a structured input and increased type frequency after Phase 1. Only A(*FBE*) learned verbs with chant No.4 and had the teacher giving increased type frequency (such as "I give X to Y"), along with role-play in the postactivity, which included repeating the serifs with both token and type frequencies (Appendix 9-A-post-activity). After all instruction was complete, Tests 1 to 3 were analyzed (Table 9-1).

Table 9-1

Procedures of "The Story of the Zodiac" (45 min × 8)

Phases	Group A(*FBE)* (Experimental Group)	Group B(*SBE)* (Control Group)	Tests and content
Phase 1	Teacher Talk 1	Teacher Talk 1	Listening Test 1
(45 min × 1)	Pre-Activity 1 Song and Chant 1-3	Pre-Activity 1 Song and Chant 1-3	(to test the equality between two groups)
	(e.g., ordinal numbers, animals)	(e.g., ordinal numbers, animals)	e.g., I am long. I am green.
	Pre-Activities 2	Pre-Activities 2	Groups A and B are determined
	(e.g., shuffle game, matching game)	(e.g., shuffle game, matching game)	
Phase 2	Listening to "The Story of the Zodiac"	Listening to "The Story of the Zodiac"	Listening Test 2
(45 min × 2)	Storytelling	Storytelling	(to test speech forms with the scenes)
	Chant No.4 and Karuta game	Chant excluding No.4 and Karuta game	e.g., Rat jumped down and ran to God.
Phase 3 (45 min × 3)	Teacher Talk 2 (type frequency)	Teacher Talk 2 (token frequency)	Listening Test 3
	Chant No.4 and three hints quizzes	Chant excluding No.4 and Karuta game	(The picture cards with speech forms)
	Post-Activities Role-playing	(excluding role playing and Post-Activities)	e.g., I can give you the ball.
	Listening to "The Story of the Zodiac"	Listening to "The Story of the Zodiac"	Focusing on verb phrases
Phase 4 (45 min × 2)	Role-playing and acting out a drama	Role-playing and acting out a drama	

Note. Teacher Talk 2 for Group A(*FBE*), Chant No.4, and role-playing included a type frequency (e.g., a serif, "I give you the third year, Tiger" can be taught in another's way: "I give *X* the ball," and "Come with me" can be taught in another way: "Come with X").

First, the listening abilities of two groups was statistically validated with the results of Test 1 (Appendix 9-B, the statistical value is shown later) to ensure they were

relatively equal. This study used the pre-test-post-test control group design [A(*FBE*): Experimental group, *N*=30; B(*SBE*): Control group, *N*=32].

The maximum scores were 8, 8, and 10 on Tests 1, 2, and 3, respectively. Cronbach's α was used to assess the reliability, and the results were as follows: Test 1, α = .60 (mid-level); Test 2, α = .63 (mid-level); and Test 3, α = .70 (high level). Cronbach's α was not relatively high for Tests 1 and 2 because of the small number of items on each test and because of considering the difficulty in elevating the ability of beginner learners; however, a mid-level correlation was detected.

Examples of the particular word-units are shown in Tables 9-2 and 9-3. Both token and type frequencies were carefully incorporated into a meaningful context. The fifth graders in *Elementary School T* were familiar with the verb phrases and could express what sports or hobbies they liked (e.g., play baseball, like music, etc.); however, they were not used to hearing the verb phrases introduced in the story (e.g., "I give you the third year," "come with me," "run fast," and so on). Prior to Phase 3, the both two groups listened to the story at least once every lesson (approximately six times or more). Since two PCs were set for the two groups while acting out a drama, they clicked and rewound the digital story whenever they wanted to learn how to act out the scenes in groups.

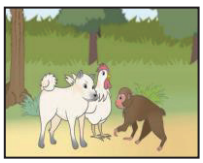
Table 9-2

Contents of "The Story of the Zodiac" With Examples of the Verbs and Verb Phrases That the Children Heard in the Lessons (the Scene Mainly Includes Token Frequency)

Digital Video Story (Audio Voice Language)		
Scenes	Dialogue	Verbs
Scene 1 All of the animals get started. 	God: Faster is better. Rabbit: I want to be the first. I can jump. Dragon: I want to be the first. I can fly. Turtle: I want to be the first. I can swim. All animals: Really?	Jump Fly Swim Want to
Scene 2 Mouse jumps on Ox's back. 	Then, the mouse jumped on the Ox's back. Rat: Here we go. The gate opened with the creek. Ox: I'm number one. Yahoo! Rat jumped down and ran to God.	Jumped on Jumped down Open
Scene 3 Dragon calls Snake 	Dragon: Hello, Snake, come with me. Snake: No, thank you. I don't like flying, but I like sneaking up.	Come with X Like *X*-ing Sneaking up

Table 9-3

Contents of "The Story of the Zodiac" With Examples of the Verbs and Verb Phrases That the Children Heard in the Lessons (the Scene Mainly Includes Token Frequency +Type Frequency)

Digital video story (audio voice language)		
Scenes	Dialogue	Verbs
Scene 4 Dog and Monkey are fighting. 	Dog: You often scratch me. Monkey: You often bite me. Dog and Monkey were fighting. So Rooster stepped in between them.	Scratch X Bite X Fighting Stepped in
Scene 5 God gives each animal	God: You are the third. I give you the third year, Tiger.	Give X the Y

a year.  Tiger: I'm Tiger. Thank you, God. Roar. Roar.

9.5 Results and Discussions

9.5.1 Connecting Nouns With the Sound (Test 1)

Three quizzes with hints were used in Test 1 to gauge to what extent the children were able to guess the meaning of the simple sentences used in the story at the end of the first lesson (Table 9-4, Appendix 9-B). A comparison of the two groups did not show equal variance (F=2.52, $p < .05$, *n.s.*); therefore, Welch's t-test was used. The scripts for Tests 1, 2, and 3 are shown in Tables 9-4, 9-5, and 9-6, respectively (Test sheets 1, 2, and 3 are shown in Appendices 9-B, 9-C, and 9-D, respectively). A comparison between the two groups for the percentage of correct answers for each verb and verb phrase is also shown in Table 9-7. The descriptive statistics for Tests 1, 2, and 3 are also summarized in Table 9-7, and a comparison between A(*FBE*) and B(*SBE*) is shown in Table 9-8.

At the starting point of the current study, as shown in Table 9-8, no significant differences were detected between the two groups in the test results, but a small size

effect was present ($t(60)$= -0.152, p = .4408, *n.s.*, r = .02, small). Based on the results, both groups were considered as being at the same level. Table 9-7 (Test 1) also shows that both groups had a score of approximately 6.7 (84%). This suggests that the fifth graders were generally successful regarding the FMCs of the first lesson. The standard deviation (*SD*) in A(*FBE*) was larger than that in B(*SBE*) (A: 1.63; B:1.02) at the beginning of the experment. This indicates that A(*FBE*) had more variation than B(*SBE*) in the FMCs for nouns elicited from the context. Next, the changes in Tests 2 and 3 throughout all phrases were examined.

Table 9-4

Script for Test 1 (Three Hints Quizzes on the Story)

"What am I?"			
No.1	I am brown.	I am strong.	I can run fast.
No.2	I am gray.	I am small.	I say squeak-squeak.
No.3	I am black and white.	I am from China.	I have a baby.
No.4	I am long.	I am green.	I cannot fly.
No.5	I am white.	I get up early.	I say “Cock-a-doodle-do.”
No.6	I am white.	I can jump.	I have long ears.
No.7	I am white.	I can run.	I say bow-bow.
No.8	I am gray.	I am big.	I can walk slowly.

Note. Each quiz was read only once with no gestures and no changes in pitch.(See Appendix 9-B)

9.5.2 Form-Meaning Connections Related to the Scenes in the Story (Test 2)

Test 2 was conducted at the end of the fourth lesson to observe to what extent children could connect each English sentence with the related scenes after listening to the story and participating in the pre- and postactivities (Table 9-5, Appendix 9-C). A comparison of the two groups did not show equal variance (F=2.1. p > .05, *n.s.*); therefore, Welch's t-test was used. As shown in Table 9-8, no significant differences were found between the two groups when it came to the test results, but a small size effect was detected ($t(60)$= -0.193, p = .4280, *n.s.*, r = .03, small). The effect sizes for the comparative effect of two variables were estimated using the correlation coefficient (effect size r). The effect size was interpreted as small = .1, medium = .3, and large = .5, as suggested by Cohen (1988; Table 9-8). Both groups showed a lower average score of approximately 3.7 (46%), as shown in Table 9-7. Therefore, we utilized the results of Test 2 to investigate whether there was a significant difference between the two groups. Overall, Test 2 was difficult in answering the questions due to the following assumptions. Children were deemed to grasp the meaning of a story by being able to pick up somewhat salient words and phrases and compiling the features and rhythm of the English sounds, the visual animation, and the flow of the context. They may have masterly skipped the small parts or the unmarked language structures. If they had been given more time, they

may have been able to map the meanings to the salient phrases; however, a considerable number of children demonstrated good scores on Test 2 (A: 6 out of 30, 20%; B: 8 out of 32, 25%). This result leads to the assumption that one-fifth of the children in the classroom were markedly sensitive to speech forms and thereby likely to be aware of and able to categorize language patterns.

Table 9-5

Scripts for Test 2 (Connecting a Few Sentences With Their Scene)

Test 2: Connecting a few sentences with their scene	
No.1	When is New Year's Day? It's January 2nd.
No.2	Who are you? I am Cat. You are too late.
No.3	The gate closed.
No.4	Dog and Monkey were fighting. So Rooster stepped in between them.
No.5	I ran fast, but I'm the last.
No.6	They bumped against each other again and again.
No.7	Rat jumped down and ran to God.
No.8	You are the fifth. I give you the fifth year, Dragon.

Note. Each quiz was read only once with no gestures and no changes in pitch.(See Appendix 9-C)

9.5.3 Children's Establishing of the Form Meaning Connections for Verb Phrases (Test 3)

Finally, Test 3 was conducted at the end of the sixth lesson to examine the differences between A (*FBE*) and B(*SBE*). It was then observed to what extent the

children could connect the verb phrases (stop-motion pictures of verb phrases that express their meaning) with the recorded sounds (Table 9-6, Appendix 9-D). A comparison of the two groups showed equal variance (F=1.28. *p < .05); therefore, a t-test was used. As shown in Table 9-8, significant differences were found between the two groups, and there was a medium-sized effect (t(60)=2.76, **p = .0038, r = .34, medium).

Table 9-6

Script for Test 3 (A Verb Phrase With Its Meaning Presented by a Picture)

Test 3: Targeted verbs and verb phrases				
	Scripts	Targeted verbs and verb phrases	Correct answers (%)	
			A(*FBE*)	B(*SBE*)
No.1	Fly	Fly	94%	76%
No.2	Run	Run	96%	65%
No.3	Fight	Fight	100%	85%
No.4	I give you the ball.	Give X the Y	68%	35%
No.5	Come with me.	Come with X	64%	50%
No.6	I can run fast.	Run fast/slowly	71%	70%
No.7	Dog and Monkey were fighting.	X were fighting	90%	91%
No.8	Rat jumped on Ox's back.	Jumped on/down	84%	59%
No.9	I give you the third year, Tiger.	Give X the Y	80%	76%
No.10	I can jump.	Jump	84%	76%

Note. Each quiz was read only once with no gestures and no changes in pitch.(See Appendix 9-D)

Table 9-7

Descriptive Statistics for Tests 1, 2, and 3

Test 1	*N*	*Mean*	*SD*	*Min.*	*Max.*
A(*FBE*)	30	6.67 (83.4%)	1.63 (1.63)	2	8
B(*SBE*)	32	6.72 (84.0%)	1.02 (1.02)	3	8
Test 2	*N*	*Mean*	*SD*	*Min.*	*Max.*
A(*FBE*)	30	3.67 (45.9%)	1.5 (1.5)	1	7
B(*SBE*)	32	3.69 (46.1%)	2.17 (2.17)	1	8
Test 3	*N*	*Mean*	*SD*	*Min.*	*Max.*
A(*FBE*)	30	8.36 (83.6%)	3.46 (2.77)	2	10
B(*SBE*)	32	6.96 (69.6%)	4.41 (3.53)	1	10

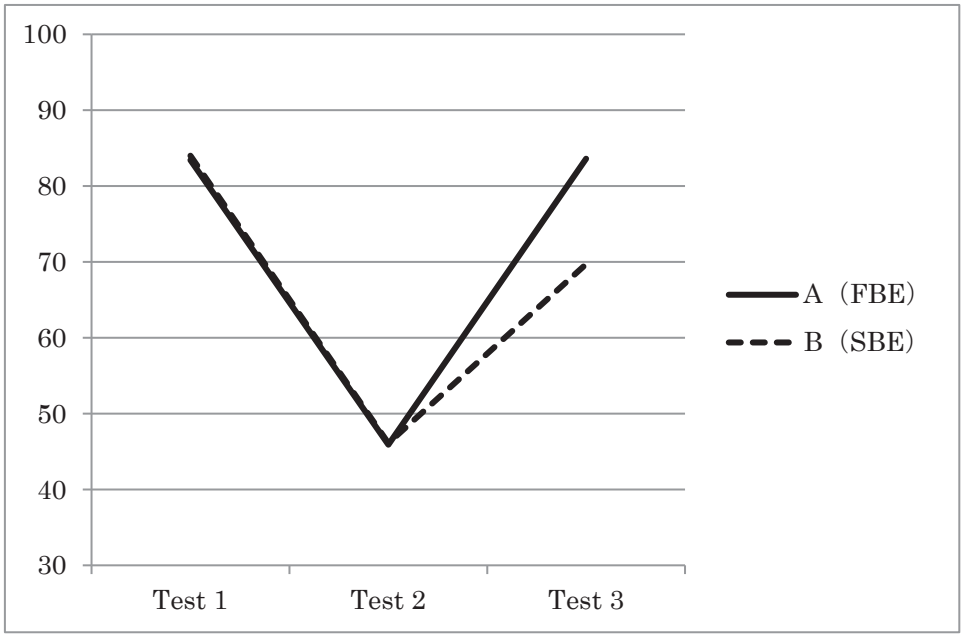
Note. The values in parentheses in the first column represent the percentages for the mean. The values in parentheses in the second column represent the *SD* converted using 8 as the maximum score. Tests 1 and 2 had 8 questions while Test 3 had 10 questions.

Table 9-8.

Comparison Between A(FBE) and B(SBE) Using Welch's t-test for Tests 1 and 2, along with the t-test for Test 3

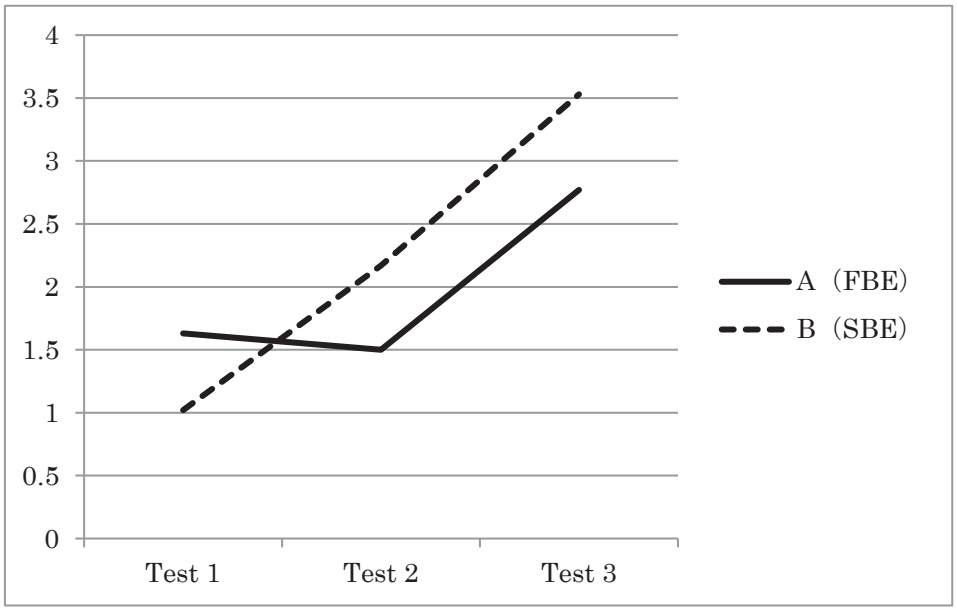
Comparison	*df*	*t-value*	*p*	*r*	
Test 1 (A(*FBE*)-B(*SBE*))	60	-0.152	0.4408	0.02	Small
Test 2 (A(*FBE*)-B(*SBE*))	60	-0.193	0.4240	0.03	Small
Test 3 (A(*FBE*)-B(*SBE*))	60	2.759	0.0038**	0.34	Medium

Note. r=effect size. *p< .05; **p< .01



Note. The vertical axis shows the mean test scores in terms of percentage.

Figure 9-1. A Comparison Between the Groups for the Mean Test Scores for Tests 1, 2, and 3



Note. The Vertical Axis Shows the SD of the Text Scores.

Figure 9-2. A Comparison Between the Groups for the Standard Deviation of Scores for Tests 1, 2, and 3

9.6 Analyses of the Results

The scores for Tests 1, 2, and 3 were compared by converting the overall scores in terms of their percentage (Figure 9-1). The children in A(*FBE*) showed higher average scores on Test 3 (the sixth lesson), in which they had some opportunities to connect meanings with the sounds related to the verb phrases. For instance, in A(*FBE*), the teacher increased the type frequency (e.g., "I give you this pen" or "I give *X* the ball") and combined it with the token frequency (e.g., "I give you the ball"). Meanwhile, in B(*SBE*), the teacher used only a token frequency (e.g., "I give you the ball"). In addition, in A(*FBE*),

the teacher used not only “come with me,” but also “I will come with you,” and not only “jumped on,” but also “jumped down.” As shown in Table 9-6, A(*FBE*) had a higher percentage of correct answers for No.1 (“fly,” intransitive verb; A: 94%, B: 76%, A>B), No.2 (“run,” intransitive verb; A: 96%, B: 65%, A>B), No.4 (“give X the Y,” ditransitive verb; A: 68%. B: 35%, A>B), and No.5 (“jump on,” verb + particle: A: 84%, B: 59%, A>B). Overall, A(*FBE*) had higher scores than B(*SBE*), and in particular, No.4 showed notable differences. On the other hand, although No.9 also contained “give *X* the *Y*,” which is similar to No.4, no large differences were found between the groups (A: 80%, B: 76%). This may be because the sentence for No.9 (“I give you the third year, Tiger”) could be memorized as a whole chunk but not categorized as “give *X* the *Y*” like for No.4.

In summary, Group A(*FBE*) was considered to be more successful when it came to establish FMCs. Furthermore, when a structured input was adequately provided, such as in A (*FBE*), the children showed considerably higher scores. Verb phrases such as “give *X* the *Y*,” “come with *X*,” and “jumped on *X*” were assumed to be categorized by children as opposed to being memorized as a whole chunk. Therefore, it can be concluded that increasing the type frequency promotes schema formation of verbs and the combination of the verb and its object in the language slot.

In looking at changes in the *SD* of the scores for Tests 1 to 3 (Figure 9-2), a wider range was observed among the children in A(*FBE*) on Test 1 (*SD*=1.63); however, this difference became narrower on Test 2 (*SD*=1.5). A wider range of *SD* scores (converted *SD*=2.77) was also seen on Test 3, but this was not as wide as the one among the children in B (converted *SD*=3.53). Furthermore, according to the obtained scores, only one out of 32 children in A(*FBE*) scored below a 6 on Test 3. On the contrary, even though children in B(*SBE*) had a narrower range of differences on Test 1 (*SD*=1.02), this difference became wider on Test 2 (*SD*=2.17) and wider again on Test 3 (converted *SD*=3.53). Furthermore, according to the obtained scores, nine out of 30 of the children in B (*SBE*) scored below a 6 on Test 3.

Considering the procedures conducted and the data obtained in the current research, the following conclusion was reached: Test 1 was conducted by having the children guess the answer on the three hints quizzes (adjectives, nouns, and simple verbs; e.g., long ears, run fast, etc.). Test 2 was conducted by having the children connect the sounds of whole chunks with the scenes. On Tests 1 and 2, the children seemed to guess the answer by picking up some keywords. At this phase, the range of differences among the children in A(*FBE*) was wider than that among children in B(*SBE*). Test 3 was conducted by having the children focus on intransitive verbs and other verb phrases

in the language slots (e.g., “I give you the ball,” “Rat jumped on the cow’s back,” etc.). At this phase, the range of differences among the children in A(*FBE*) was narrower than that among the children in B(*SBE*). On Test 3, even though it may have been difficult to guess the answer by only picking up keywords, children in A(*FBE*) performed better than children in B(*SBE*) when it came to the FMCs for verb phrases.

9.7 Conclusion

The current study demonstrated that the children came to notice language patterns when the “token frequency combined with type frequency” of verb phrases was intentionally taught. In this condition, the children were able to find language slots as opposed to memorizing unanalyzed chunks. This result corresponds to the theory of schema formation of verbs. In particular, the fact that the scores were twice as high for children in A(*FBE*) as those for children in B(*SBE*) on “give *X* the *Y*” is significant. A(*FBE*) children became better at finding the “give *X* the *Y*” pattern through the structured input they received from their teacher. The difference in the SD between A(*FBE*) and B(*SBE*) on Test 3 during the final phrase suggests that the children in A(*FBE*) became more sensitive to linguistic features while being taught with a FonF

method using token frequency combined with type frequency. Paradoxically, being exposed to formulaic chunks without accessing the type frequency, which was the case for B(*SBE*), may limit children from successfully establishing FMCs, leaving them unable to form grammatical schemes in language slots and thereby making English leaning more difficult.

These findings are consistent with those reported by Bybee (2008), N. C. Ellis (2008) and N. C. Ellis, O'Donnell., & Romer.(2014) and Myles (2004), who suggested that the frequency of input affects language processing. The 11-year-old children (prepubescent age) in the current study significantly demonstrated their analytical cognitive processes by recognizing that different actual forms occur in the same language slot (Bybee, 1995). These findings are also consistent with other research on FonF (Gass, 1997; Harley, 1998), which have shown an increase in children's analytical abilities when hearing the same exemplars.

Regarding the pedagogical implications of the current study, as hypothesized, teachers should consider the importance of exemplar-based learning and FS in language processing. Based on the fundamental exemplars given, teachers should elicit category learning using a structured input, as observed through the process of *instance to rule* in A(*FBE*). The fact that children in A(*FBE*) scored higher for both FS (e.g., "I give you the

third year, Tiger") and modified linguistic structure (e.g., "I give you the ball") and that the children in B(*SBE*) scored lower in the latter confirms category learning as *instance to rule*. Therefore, the following three modified processes were developed: 1) exemplar-based learning for successful FMCs, (2) a structured input for recognizing language patterns, and (3) token frequency combined with type frequency for schematizing formulaic sequences.

The current study did have some limitations. First, a significant difference was detected between the groups on Test 3 after the type frequency was increased in A(*FBE*), and the percentage of correct answers among the children in A(*FBE*) was clearly higher than that among the children in B(*SBE*); however, this only had a medium-size effect so that we are not able to designate the results firmly. Second, in total, the current study lasted 8 hours, which was considered insufficient to observe changes in the recognition of linguistic patterns and shifts from item to category learning. For this reason, on Test 3, the presence of category learning was confirmed; however, the children's development had been ongoing.

In conclusion, the children were able to start noticing linguistic patterns earlier and more skillfully when the teachers utilized token frequency combined with type frequency in the EFL classroom. Using a token frequency provides children with a firm

foundation to map sounds with meanings, whereas token frequency combined with type frequency through the structured input improved their ability to notice linguistic structures within language slots. Furthermore, regarding the focused construction of "give *X* the *Y*," it may be possible to elicit the schema formation of verbs if the *X* and *Y* parts can be replaced with alternative words (e.g., "give you the ball"). As Goldberg (1995) suggested, "give *X* the *Y*" implies that "give caused Y to move to X"; therefore, it is possible that children might come to schematize a structure that would "remain grammatically advanced until the grammar catches up" (Myles, 2004) and to be oriented toward acquiring grammatical sensitivity.

The results obtained in the current study reflect exemplar-based learning and the way it proceeds in the L2 EFL classroom in Japanese elementary schools for children with little prior L2 experience. The results confirm presence of category learning; however, this had been ongoing. The results obtained in this chapter leave room for further exploration of the subsequent ages and levels in which FS might be applied for L2 learning in junior high school. Therefore, it is presumed that these results could be applied to all levels of L2 learning, and an *instance to rule* shift from item to category learning might be observed among children both at a prepubescent age and early adolescent age. By enabling children to pay attention to language patterns, it is possible

for them to feel unique when learning English, helping promote future autonomous learning in which children can comprehend and produce new expressions while acting on their own cognitive initiative.

Chapter 10

EFL Learners' Grammatical Awareness through their Accumulation of the Formulaic Sequences of Morphological Structure (*-ing*) (Age 13)

10.1 Introduction

In a previous study conducted by Kashiwagi (2012), which was described in Chapter 6, we investigated the extent to which young adolescent learners notice linguistic patterns when acquiring multi word expressions (MWEs), which in this instance are defined as formulaic sequences (FS). In Chapters 7 and 8, we found that 90% of fifth- and sixth-grade children were able to establish FMCs when they had accumulated a certain amount of verb phrases. In Chapter 9, the children who had accumulated a certain amount of input started to notice linguistic patterns. Token frequency combined with type frequency through a structured input improved the children's ability to notice linguistic structures within language slots. It is premised that children might be able to schematize a structure that would remain grammatically

advanced until the grammar catches up (Myles, 2004; Myles & Cordier, 2017) and to be oriented toward acquiring grammatical sensitivity. Accordingly, this chapter will seek if it is possible to create a way for the children's ability to schematize a structure and their grammatical sensitivities to the linguistic patterns to be boosted at the introductory period in Japanese junior high school.

In the successive previous study of Urata, Kashiwagi, Nakata, and Ide (2014), we specifically investigated to what extent adolescent learners (age 13) retained FS and whether FS would be transferred to English lessons at the next stage (first grade of junior high school; 4 hours per week during the first half year). The study examined how existing FS effectively supported subsequent English learning; it was expected that being exposed to more FS would develop learners' sensitivity to linguistic patterns when distinguishing spoken sentences as grammatical or ungrammatical. The theoretical framework (elaborated in more detail later) is based on FS and the UBM, which has been improved by several linguists (Ellis, 2008; Ellis & Larsen-Freeman, 2009; Logan, 1988; Nakamori, 2009; Skehan, 1998; Tomasello, 2003).

Prior to 2011, English education in Japan commonly began in the first year of junior high school; however, English lessons have recently been introduced in elementary schools. English language teaching in Japan is at a turning point. All public elementary

school children are expected to listen to English and use it more often in the classroom. At the end of the sixth grade, children are likely to have acquired many exemplars through imitation and repetition because of communicating with each other, even though they have not been taught grammar explicitly. These changes indicate that the children now have a different language experience and can hear, imitate, repeat, and replace parts of chunks (e.g., draw a circle, draw a square) as needed, even before they enroll in junior high school.

In light of the above changes, it seems necessary to modify the teaching approach for first-year junior high school students. Under current teaching procedures, elementary school children learn new linguistic properties in a different way; whole prefabricated patterns are taught in a meaningful context and are then imitated and repeated by the students (e.g., "I can play baseball," or "Draw a circle on the whiteboard"); linguistic rules are not explicitly taught. However, the process by which students should access the meaning-bearing form during foreign language activities has not been clearly stated. From the viewpoint of language learning, meaningful input is essential, and the students are encouraged to use chunks, where they replace parts of sentences naturally in an interactive classroom ("I can play *dodge ball*," or "Draw *a rectangle on the paper*"). The italicized parts would be newly created by the teacher and

students while engaging naturally in the activities. These phenomena are superficially captured from the viewpoint of junior high school English teachers, such as teachers saying, "the students' listening abilities have improved," or "the students seem to already know some words." On the other hand, English teachers who use an oral introduction in an interactive way from the outset are prone to report more precisely that "I only used a picture card to teach a word, morning, but the students reacted by saying in the morning," or "I only told the students to create a skit, self-introduction, in pairs, but the students added a simple expression such as 'I live in *X*,' 'I don't like *X*,' or 'Go shopping.'" The students seem to be able to recall chunks in context. These phenomena seem to be grasped differently by English teachers who have not yet noticed the transition of FS and others who have already acknowledged it as linguistic properties that the students come to store. The latter linguistic phenomena are stated as form-meaning connections (FMCs). VanPatten et al. (2004) suggested FMCs are the act of imitating and repeating; in particular, they embrace a negotiation of meaning and connect with linguistic patterns.

Although this procedure seems simple, it is significant for language development in FS. However, the importance of cognitive procedures and the developmental mechanisms for later learning have not been clarified and are occasionally misunderstood by instructors. As a result, students' existing FS stocks have been

neglected and often ignored in English lessons at the beginning of junior high school. It is difficult for junior high school teachers to assess accumulated FS and FMCs established in elementary school, and because this depends on aural inputs rather than written texts, it remains obscured. If the assumption that the current junior high school students (age 13) develop grammatical sensitivity by receiving an instructional medium using FS, then their process of understanding FMCs and accessing linguistic patterns naturally by themselves should be illuminated and built upon in the next learning stage.

10.2 Previous Study Regarding EFL Learners' Grammatical Awareness

There is a scarcity of empirical classroom research regarding the early adolescent age. Therefore, to clarify children and students' established FMCs and their grammatical sensitivity to linguistic patterns, Urata et al. (2014) conducted research to the extent that students notice linguistic patterns; here, the sound-grammaticality judgement test (S-GJTs) was used. A higher score indicated grammatical sensitivities because of the accumulation of FS. Participants included 41 elementary school children (mean age: 12.5) and 40 junior high school students (mean age: 13.5).

The elementary school children were tested after approximately 50 hours of English Activities (taught once a week for a year and a half). S-GJTs were conducted; the results, which was reported by Urata et al. (2014), are presented in Table 10-1. Based on a test that was sound recorded by a native speaker and read twice at intervals of 2 seconds, students were required to find linguistic patterns, and then, the results showed as follows (See Table 10-1): 1) correct word order (NO.1; 97.6%, NO.4; 92.7%, NO.7; 73.2%), 2) ungrammatical sentences, such as incorrect word order negation (NO.8; 87.8%), 3) insertion between V and O (NO.5; 85.4%), 4) incorrect VO (NO.3; 75.6%); and 5) omission-verb (NO.2; 56.1%).

The results above indicated that these students could judge both sentence correctness and the awkwardness of ungrammatical sentences, and they retained FS (Table 10-1). When tested, the junior high school students had completed approximately 80 hours of English lessons. The students had previously experienced English activities for 2 years in elementary school. On enrolling in junior high school, they learned English with four skills and learned basic English grammar skills: copula -be, present form, present progressive form, and third person singular -s, as well as nouns, adjectives adverbs, and VO, (but not can and VO). As for elementary school chidlren, the same S-GJTs was conducted prior to the lesson titled the use of auxiliary 'can' (Kairyudo, 2014).

The results of the S-GJTs are presented in Table 10-1. Junior high school students' results showed as follows (See Table 10-1): 1) correct word order (NO.1; 98%, NO.4; 95.4%, NO.7; 77.2%), 2) ungrammatical items such as incorrect word order negation(NO.8; 85.2%), 3) insertion between V and O (NO.5; 86.1%), and 4) Omission verb (NO.2; 58.2%). In summary, the junior high school students' scores were similar to or slightly better than elementary school children's scores. Surprisingly, although the score for omission-the was higher (NO. 6; 56.3%) than the one of elementary school (NO.6; 26.8%), in contrast, the score for incorrect VO remained lower (NO.3; 21.5 %) than the one of elementary school (NO.3; 75.6%).

Both groups of children and students could find linguistic patterns and performed well in their sense of sentence correctness and awkwardness (for incorrect word order, insertion, and incorrect VO although not for omission). Overall, elementary school children achieved good scores, even though they had learned English only aurally, without being taught grammar explicitly. The junior high school students showed good retention of FS but showed unremarkable in S-GJT scores compared to elementary school children. This indicates that the elementary school children were stronger in detecting incorrect prefabricated patterns, such as "I can play swim" and that they may

retain FS as the continuity between words. The results indicated that chunks, FS as cognitive procedures, and their use in the interactive classroom should not be discarded.

Table 10-1

S-GJT Scores for Can + VO

No.	S-GJTs	Correct or Incorrect (VO phrases)(can +VO)	Correct answers (%)	
			Age 12.5 (*N*= 41)	Age 13.5 (*N*= 40)
1	I can cook.	✗	97.6	98
2	I can soccer.	✓Omission-Verb	56.1	58.2
3	I can play swim.	✓Incorrect VO	75.6	21.5
4	I can play table tennis.	✗	92.7	95.4
5	I play can *Kendama*.	✓Insertion between V&O	85.4	86.1
6	I can play piano.	✓Omission- the	26.8	56.3
7	I can't play the recorder.	✗	73.2	77.2
8	I play can't basketball.	✓Incorrect word order-negation	87.8	85.2

Note. *Italic*: Japanese words; V: verb; O: object, ✗ :correct sentences ✓ :incorrect sentences, Age 12.5: Elementary school children; Age 13.5: Junior high school students.

(Adapted and rewritten from Urata et al., 2014)

Subsequently, to address the next learning stage, the present study targeted FS (grammar structures VO in the present progressive and collocation of foregoing and subsequent VO). This included the morphological structure *-ing* that students frequently hear in storytelling or in a teacher's oral introduction.

Overview of Teaching English Grammar in Japan was detailed in Chapter 3 (2.5), this chapter will promote option (4) suggested by Nakamori (2009) based on UBM approach, for young adolescent learners (ages 12 and 13) taking the FS that the students

come to possess into consideration. The instructional medium of FonF is also integrated into the present study. Using an explicit grammar explanation is not avoided strongly, preferably, heightened by eliciting the students' noticing the patterns after they accumulated certain amount of FS. Accordingly, for the most part, we take into account the *instance to rule* As we discussed in Chapter 3 (2.5), the teacher must ensure that students do not rely on the rule but that they instead use imitating, repeating, borrowing, and replacing parts of chunks (increasing both token and type frequency) to form language slots that students can access rapidly.

10.3 Experiment in *Junior High School K* (Age 13)

10.3. 1. Aims

The present study aims to investigate the effectiveness of FS in a classroom setting. The research objectives are as follows:

(1)To develop and conduct an English class based on FS, activating students' FS that they come to possess using sound (imitating, repeating, and replacing parts of the

language slot), encouraging students to establish form-meaning connections (FMCs) and notice linguistic patterns.

(2)To investigate the extent to which students pay attention to these patterns (here, the morphosyntactic structure *-ing*) using pre- and post-sound grammaticality judgement tests (S-GJTs); to assess students' grammatical sensitivity to each item (including linguistic patterns such as morphemes and word order); and to examine how each item changes during experimental practice between the Pre- and Post-Test.

(3)To consider whether FS and detection of linguistic patterns impacts positively on students' language learning and their development of procedural knowledge.

Considering the introductory period in the first year of *Junior High School K*, the present study will utilize the morphosyntactic structure *-ing*, which is considered to be comparatively feasible to access both the meaning and form according to natural acquisition order that we discussed in Chapter 3 (2.5).

10.3. 2 Procedures

10.3.2.1 Participants and the Procedures

The participants were first-grade *Junior High School K*'s students (*Mean Age* = 13.7; *N* = 95). Their English proficiencies, as measured by self-recognized *EIKEN* grade levels, were Grade 5, with roughly 60% of students within Grade 5 and 30% within Grade 4. A JET (Y) taught the English lessons in all these classes using the same FS procedures (8 hours in total). Prior to the present study, the students had experienced English activities for 2 years (twice a week in fifth and sixth grade) when they were in elementary school. Students began learning phonics in the fifth grade (age 11), paying attention to the initial sound and phonemes within the word by learning the concept of onset and rhyme (e.g., f・ox, c・at).

However, they were not yet at the decoding stage when they enrolled in *Junior High School K*. They continued to learn decoding by listening to stories from more than 20 books in the Oxford Reading Tree; the book we used was from this collection (Hunt, 2003), and the JET (Y) posed some questions about the story in an interactive style. JET (Y) taught all the English lessons for participants. The lessons were taught in English, and the flow of the lesson was rule to instance. The grammar items that students had already learned before the experimental practice were copula-be, verbs, third person singular-s, and auxiliary can. The present study did not employ a comparison or control

group; instead, a one-group, pre- and post-test design was used, taking into account the students' introductory learning stage.

The lesson was instructed using *instance to rule* which differed from the existing approach. Conducted in January in the first grade of junior high school, the total duration of the lessons was 8 hours. Prior to the first lesson in the year 2015, the Pre-Test, S-GJTs was conducted as follows:

(1)First lesson: FS focusing on exemplar-based learning

Following the FS procedure, the teacher first elicited existing FS (present progressive *-ing*) interactively by showing picture cards: "Hi, Friends! 2": "What is *X* ~ ing?" "*X* is ~ ing." The lesson used verb phrases that students had already learned (e.g., swim, play soccer, study math, cook dinner).

(2)Second and third lessons: FS focusing on FMCs, FonF, accumulation, and schema formation

The teacher introduced storytelling to draw the students' attention to the present progressive *-ing* in the context, using only sound and asking questions using gestures.

The students were then challenged to retell the story in groups (dictogloss from the sound called S-dictogloss in the study).

(3)Fourth and fifth lessons: FS focusing on teaching grammar in an inductive way

The students opened their textbooks and listened to the content before reading the text and practicing exercises orally using the present progressive *-ing*. The teacher then explained the grammar explicitly, using the chart and asking the students in Japanese (for 10 minutes) what sentence patterns they noticed (1: be＋---ing; 2: Are you ---ing? 3: What are you ---ing?). Inverted VO and *-ing* after a verb (e.g., changing clothes now) was also taught using VO combinations.

(4)Sixth, seventh, and eighth lessons: FS focusing on imitating, repeating, borrowing FS, and token combinec with type frequency)

The teacher again used storytelling and S-dictogloss before asking the students to create a skit in groups. The production replaced the FS part and added some sentences rather than creating a new story.

Then, the Post-Test, S-GJTs, was conducted.

The examples used in the story and the model sentences used in the textbook are shown in Appendix 10-A and Appendix 10-3, respectively. For instance, the students encountered exemplars of the present progressive, such as “A magic key is glowing now” more than six times through S-dictogloss, storytelling. To draw the students’ attention to the sound form, storytelling did not include any alphabet letters or pictures.

10.3.2.2 The Data Analysis Procedures

To evaluate the gain of procedural knowledge, timed sound-grammaticality judgement tests: S-GJTs were elaborated and performed. In this test, the examinees had to judge intuitively whether a sentence was grammatically correct or incorrect in a limited time. S-GJTs measure three main processing operations: (a) semantic processing, (b) noticing, and (c) reflecting. Although (a) and (b) reflect the learner’s procedural knowledge, (c) reflects one’s declarative knowledge (R. Ellis, 2005, Loewen, 2009). Investigating what kind of knowledge was involved in judgements of correctness and incorrectness of GJTs, Xavier (2013) reported, “The learners judged grammatical sentences significantly more accurately than ungrammatical ones in both timed and the

untimed GJTs. This ability might be due to the learners' implicit knowledge. Discriminating ungrammatical sentences might be due to the learners' explicit knowledge" (p. 442).

The tests employed sound recorded by a native speaker; to observe participants' grammatical sensitivity through learning FS using mainly input and interaction, written sentences were not shown. We characterized these tests as S-GJTs which is considered to demand greater attention to the sound form. In the test, the first example was used to practice and demonstrate the test procedure. Each test sentence was repeated twice at intervals of 2 seconds. The tests consisted of 10 items (10 points in total), including omission-copula-be, incorrect insertion, subject–verb (SV) disagreement, incorrect word order and inverted VO, and incorrect insertion between Vi and preposition (see Tables 10-2 and 10-3). Scores were compared between the Pre-Test and Post-Test. For the Pre-Test, we used verb phrases that were familiar to participants from *English Lessons* (e.g., I am listening to music). For the Post-Test, we used verb phrases (e.g., Are you cleaning your own room now?) in the storytelling and textbook stories the participants listened to (see Appendix 10-A and Appendix 10-B).

10.3.2.3 Reliability and Validity of S-GJTs

Although there is no preceding study of S-GJTs conducted with sound, some previous studies have used text-based GJTs, including Ellis (2005) and Shimada (2014), who sought to measure explicit and implicit knowledge. In the present study, the reliability of the Post-Test was measured using a repeated test (Post-Test α) for the same participants a year later. If the Post-Test itself and Post-Testα showed a positive correlation, the test's reliability would be confirmed. The validity of the Post-Test was also measured using Post-Testβ, a listening proficiency test addressing the participants' FS and detection of linguistic patterns in parallel. We observed participants' time-restricted grammatical judgment, requiring them to pay attention both to meaning and form. Post-Test β contained (a) agreement of a story with the illustration; (b) selection of a correct answer to a question about a long skit; and (c) agreement of a question in a speech with the speech context. Post-Test β was conducted a year later; if both Post-Test and Post-Testβ showed a positive correlation, the test's validity would be confirmed. We examined the correlation between Pre-Test and Post-Test to assess whether the two tests measured the same grammaticality judgement ability, confirming an indirect connection with Post-Testβ as well.

The Post-Test and Post-Testα revealed a positive correlation (Post-Test, *N* = 95, *Mean* = 6.97, *SD* = 1.77; Post-Test, *N* = 95, *Mean* = 7.82, *SD* = 1.90). Between the tests, it was shown that *N* = 95; *r* = .55; **p< .01; the reliability of the Post-Test was proved. Both the Post-Test and Post-Testβ also revealed a positive correlation (Post-Test, *N* = 95, *Mean* = 6.97, *SD* = 1.77; Post-Testβ, *N* = 95, *Mean* = 82.3, *SD* = 20.3, *Max.* = 100, *Min.*= 34). Between the tests, the results were *N* = 95; *r* = .63; **p< .01; the validity of the Post-Test was proved. The Pre-Test and Post-Test revealed a positive correlation (Pre-Test, *N* = 95, *Mean* = 5.9, *SD* = 1.63; Post-Test, *N* = 95, *Mean* = 6.97, *SD* = 1.77. Between the tests, *N* = 95, *r* = .46; **p<. 01). Both the Pre-Test and Post-Test can be considered as validly measuring the same grammaticality judgement ability. Posterior to the Post-Test, the class had been taught by the same JET(Y) and FS because instructional medium was mostly used after the current study. Between the Post-Test and Post-Testβ, the students learned a past tense, a future tense, an infinitive, and a comparison through the same procedure *instance to rule*. Present progressive had not been taught specifically once again; however, they had seen the morphological structure *-ing* in their production when they created the skit. The storytelling the teacher instructed often embraced the form-ing naturally. Considering the students who are at the introductory period, the number of test items needed to be limited. Therefore, 10 items in each test consisted of a variety

of grammar items, such as omission, insertion, and word orders. On this account, the tests did not presume consistency, and the Cronbach α of each test was not relatively high (Pre-Test, α =.44, Post-Test, α =.60, Post-Test α =.63).

10.4 Results and Discussions

10.4.1 Reporting on the Practice

In the practice round, S-dictogloss was instructed the teacher first had performed storytelling using only sound. The students paid close attention to the story, even though the teacher told it without showing the illustration. They recalled the story in groups and reconstructed it, taking notes and writing down the fragments they recalled (Figure 10-1). Their notes revealed the extent to which they used chunks, such as copula-be, verbs, adverbs, and prepositions. Words were not isolated but were collocated instead. The students' collaborative learning while reconstructing the story in groups is shown in Figure 10-2. It became clear that although no written present progressive *-ing* appeared in their notes, they imitated the chunks with or without *-ing* when the teacher elicited orally what they had retained. In S-dictogloss, the participants had many opportunities

to connect FS and its meaning, and they came to understand what the present-progressive *-ing* meant in the context of the story's plot.

In the story, the students burst into laughter because of a funny mismatch between their image of the story and the story shown with the illustration—for example, the scene entitled, "The witch is thrown away" was shown only in the illustration. After using S-dictogloss, the teacher gave the students an explicit grammar explanation in only 10 minutes. Before this, the students had already grasped when *-ing* is used and how it should be placed after verbs. The teacher did not need long for the explanation, and the students moved on to the practice and production activities. Some students told the teacher, "We understood the grammatical structure firmly in this way." Finally, the teacher asked the students to make a skit using the story's plot or the textbook's script. They seemed to know many FS and replaced parts of the FS they knew, adding in some terms they have already knew to areas that were new.

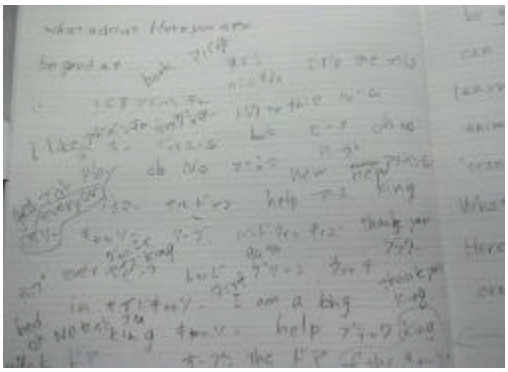


Figure 10-1. Notes Reconstructed Through S-dictogloss (in Groups).

Figure 10-2. Recalling the Story Through S-dictogloss (in Groups).

10.4.2 Analyses of the Results of the S-GJTs

The Pre-Test and Post-Test results for each test item (percentage of correct answers displayed as a decimal value) are shown in Tables 10-2 and 10-3, respectively; the scores for each item are represented graphically in Figure 10-3. Total score, descriptive statistics, and the *t*-values for the repeated tests are shown in Table 10-4. The change from Pre-Test to Post-Test is presented as a box plot graph in Figure 10-4. Pre-Test and Post-Test data are displayed as a histogram to visualize the classroom distribution (See Figures 10-5 and 10-6).

Summarizing the results of the Pre-Test for correct word order, participants returned approximately 80% correct answers (No. 1: 0.85; No. 2: 0.81; No. 3: 0.64). For omission -ing, participants returned approximately 60% correct answers (No. 4: 0.66; No.

5: 0.56). Participants readily grasped linguistic patterns such as “Are you X *-ing*?” and “I am X *-ing*.” Regarding incorrect word order, incorrect insertion between Vi and preposition, and inverted VO, participants achieved lower scores, less than 50% (No. 9: 0.31; No. 10: 0.46). However, regarding omission copula-be, participants scored relatively higher at above 50% (No. 7: 0.69). Although it seems to have proved difficult for these students to judge omission, they were familiar with FS such as “she is,” where the is was omitted, and they sensed this awkwardness. Regarding SV disagreement (No.8: 0.41), participants scored lower; this was not judged in the Pre-Test. For incorrect insertion after Vi, participants achieved a reasonable score of approximately 50% (No. 6: 0.56).

Overall, the ability to judge correctness was higher, and participants could identify awkwardness when part of the FS was omitted. However, their ability to judge incorrectness of word order or SV disagreement was lower. Even though participants had not been taught about the present progressive *-ing*, they could detect the structure and sufficiently judge its correctness. The learning experience of establishing FMCs and accumulation a repertoire of FS can be a predictor for the next learning stage.

Table 10-2

Pre-Test: S-GJTs

NO.	Pre-Test: S-GJTs	Target grammatical item	% (d)
1	Mr. Y and Ms. I are teaching English now.	✗	0.85
2	I am making sushi now.	✗	0.81
3	They are studying math now.	✗	0.64
4	Are you clean your room now?	✓Omission *-ing*	0.66
5	I am listen to music now.	✓Omission *-ing*	0.56
6	Ken is playing skate now.	✓Insertion after Vi	0.56
7	She helping your friend now.	✓Omission copula-be	0.69
8	Y and T is cooking dinner now.	✓SV disagreement	0.41
9	I am coming school to now.	✓Insertion between Vi and preposition	0.31
10	He is the door painting now.	✓Inverted VO	0.46

Note. The subject in Nos. 1 and 8 is a proper noun written as an initial. *Italics* in S-GJTs indicate errors. % (d): Percentage of correct answers displayed as decimal values.

Table 10-3

Post-Test: S-GJTs

NO.	Post-Test : S-GJTs	Target grammatical item	% (d)
1	A red witch is coming now.	✗	0.70
2	I am cooking breakfast now.	✗	0.87
3	A magic key is glowing now.	✗	0.73
4	Are you dry your hair now?	✓Omission *-ing*	0.67
5	I am change my clothes now.	✓Omission *-ing*	0.79
6	Mr. Y is playing ski now.	✓Insertion after Vi	0.78
7	She using her computer now.	✓Omission copula-be	0.69
8	B and K is jumping on the bed now.	✓SV disagreement	0.63
9	They are swimming the pool in now.	✓Insertion between Vi and preposition	0.59
10	Grandpa is *ozoni* making for us now.	✓Inverted VO	0.51

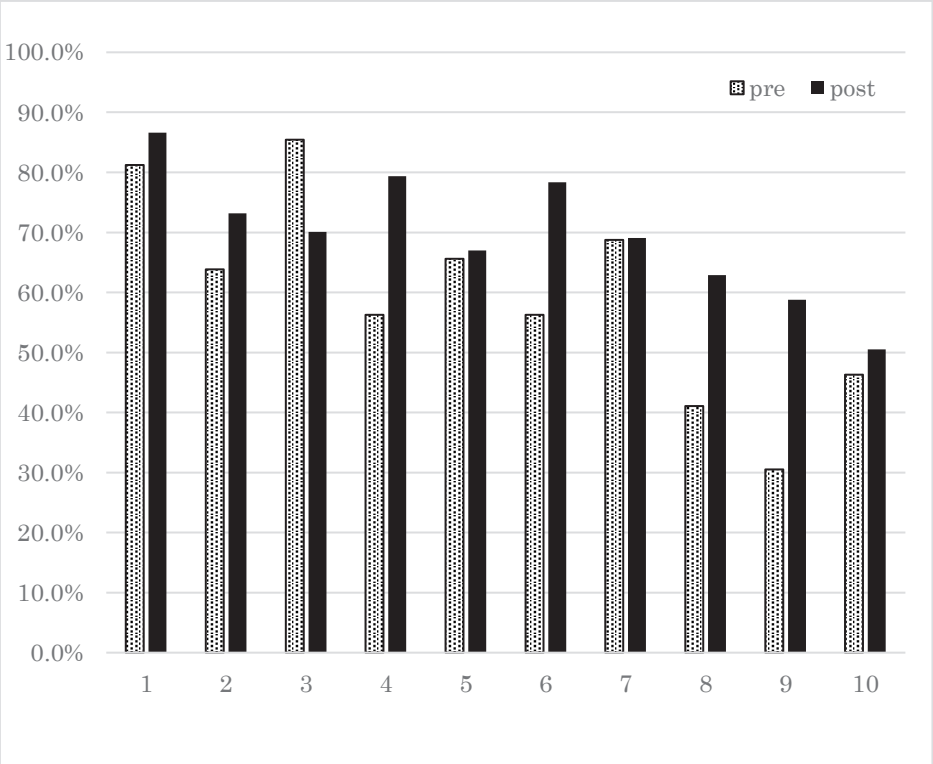
Note. The subject in Nos. 6 and 8 is a proper noun written as an initial. Italics in S-GJT indicate errors. %(d): Percentage of correct answers displayed as decimal values.

Turning to the results of the Post-Test(See Table 10-3), participants achieved 70% to 80% correct answers for correct word order (No. 1: 0.7; No. 2: 0.87; No. 3: 0.73). Regarding omission *-ing*, participants again returned approximately 70% to 80% correct answers (No. 4: 0.67; No. 5: 0.79). Participants readily grasped linguistic patterns such as "Are you *X -ing*?" and "I am *X -ing*." Regarding incorrect word order: incorrect insertion between Vi and preposition and inverted VO, the participants scored better than in the Pre-Test although this score remained at around 50% (No. 9: 0.59; No. 10: 0.51). More than half of the participants predicted what would come after a verb (cf. *ozoni* making and making ozoni) and felt the awkwardness of the pool after swimming (cf. swimming

the pool in and swimming in the pool). An explicit grammar explanation may clarify that "swim" is an intransitive verb and does not connect with an object. However, the students' accumulated FS enabled them to judge the incorrectness of what comes after the verb "swim" using minimum cognitive processing operations rather than relying on the rules. Regarding omission-copula-be and SV disagreement, the participants scored higher (No. 7: 0.69; No. 8: 0.63). For incorrect insertion after Vi, participants scored much higher (No. 6: 0.78). Overall, the ability to judge correct word order, omission, and insertion proved to be higher, and they were able to detect awkwardness when part of the FS was missing or when the whole FS was divided unreasonably. Because the present progressive *-ing* and SV agreement were explicitly taught for 10 minutes in the lesson, these items may have been positively influenced by explicit knowledge of grammar as well. For incorrect word order, incorrect insertion between Vi and preposition, and inverted VO, the scores were higher, indicating that these items had been positively influenced by FS.

On the whole, as seen in Table 10-4 and in the difference between the Pre- and Post-Test in Figure 10-3, the overall score improved significantly from Pre-Test to Post-Test (Pre-Test: $df = 94$, $Mean = 5.9$, $SD = 1.63$; Post-Test: $df = 94$, $Mean = 6.97$, $SD = 1.765$; $t = 5.873$, $^{**}p = .000$, $r = .52$, large effect size). Overall, FS had a positive influence on the ability to judge both correctness and incorrectness in the limited available time,

and there was greater retention and demonstration of grammatical sensitivity to linguistic patterns.



Note. Horizontal axis: Number of the test items; Vertical axis: The percentage of correct answers.

Figure 10-3. Comparison of Post-Test With Pre-Test (*N* = 95)

Table 10-4

Descriptive Statistics and t-test Comparing Pre-Test and Post- Test (N = 95)

	df	*Ave.*	*SD*	*Min.*	*Max.*	*t-value*	*p-value*	*Effect Size r*
Pre-Test	94	5.9	1.63	2	9	5.873	.000**	0.52 (Large)
Post-Test	94	6.97	1.765	3	10			

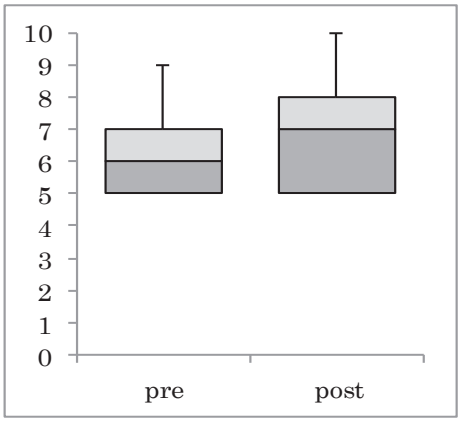


Figure 10-4. Graphic Comparison of Post-Test With Pre-Test

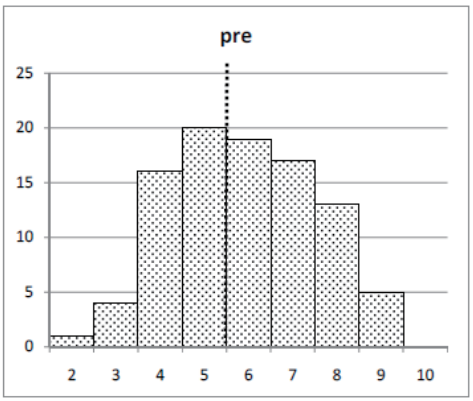


Figure 10-5. Histogram, Pre-Test (N = 95)

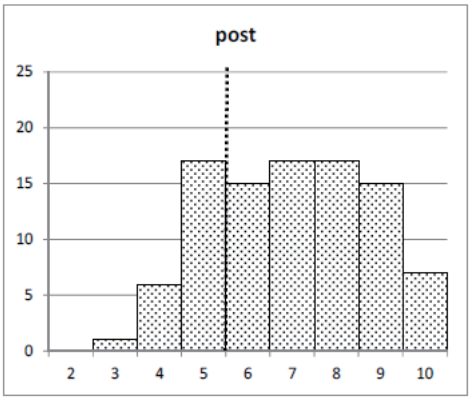


Figure 10-6. Histogram, Post-Test (N = 95)

Figure 10-4 shows a clear increase from Pre-Test to Post-Test and that a ceiling effect is present in the Post-Test. Figures 10-5 and 10-6 show a shift from Pre-Test to Post-Test. For instance, the number of low-proficiency students to the left of the dotted

vertical line (representing a score of less than half) decreased, and the number of medium-proficiency students (to the right of the dotted vertical line) increased. The overall level of grammatical sensitivity in the class improved.

10.5 Conclusion

The current study implemented and then investigated the proposed teaching procedure: combining FS with FonF. From observing the classes, the students had many opportunities to accumulate FS and to notice linguistic patterns in an interactive learning. Throughout the storytelling, dictogloss, and making skits they could act out, the students imitated, repeated, and used parts of the FS. The results showed how much students paid attention to the patterns. The increase in their scores between the Pre- and Post-Test S-GJTs can be summarized as follows:

(1)Incorrect insertion between Vi and preposition (31% to 59%, increased by 28%)

(2)Incorrect insertion between Vi and preposition (56% to 78%, increased by 22%)

(3)SV disagreement (41% to 63%, increased by 22%)

(4)Omission *-ing* (70% to 85%, increased by 15%)

(5)Incorrect word order: Inverted VO (46% to 51%, increased by 5%)

In summary, we observed clear improvements for all grammar items, except for omission copula-be and inverted VO, which was taught using both FS and explicit grammar explanation. Regarding the grammar items that were inverted, this may be acoustically less salient for these students, and the items may differ from Japanese (L1). On the other hand, correctness and incorrectness (insertion and agreement) may be more salient and easier to learn through FS. For these grammar items, FS may support language use until declarative knowledge catches up to and then coexists with procedural knowledge.

In conclusion, FS can enhance students' grammatical sensitivity to linguistic patterns and can exert a positive influence on language acquisition in terms of finding linguistic patterns, as well as developing procedural knowledge, in which students learn a new language through *instance to rule*. In the current study, the students had not been mature enough to process the abstract rule beforehand when they encountered a particular target structure in a conceivable context. They were given opportunities to repeat and imitate what they heard and work together to reconstruct the story in dictogloss. They attempted to establish FMCs and may have noticed the verb ending -

ing, analyzed the form, and made their own hypotheses. The teacher also gave a grammar explanation, eliciting their hypotheses that the students came to possess as a new language property. All these procedures might be fundamental language experiences. However, we should also note that the procedures for learning FS are ongoing in classroom interactions, and language is learned from the participatory experiences of processing an input and producing language during interactions in social contexts (N. C. Ellis, 2008; Larsen-Freeman, 2015), as the UBM emphasized. This may explain why the present study found an improvement in the whole classroom, in which both fast and slow learners moved forward. The number of students who had higher scores increased. In terms of this outcome, students might also have gone over their collaborative tasks and shared what they had learned. In other words, FS needs to be realized in this kind of interactive classroom where students compare current consequences with antecedents they have previously learned.

One of the limitations of the current study was that we did not compare a treatment group with a contrast group because the students were at the beginning of the introductory period of their English education. Second, the research focused on the students' receptive ability (listening) in establishing FMCs. Although students' production was observed in the classroom, production through FS should be subjected to

a closer empirical study. Additionally, other grammar items require further study, which could be done by regarding the degree of difficulty of grammar items for Japanese students.

By 2020, regulated elementary school English activities will take upwards of 70 hours of classroom time each year, and children will start learning English at the age of 9. The findings were significant in providing data for how important it is for teachers to understand the students' procedural knowledge, which helps them access a minimum processing unit before shifting to English lessons in junior high school.

Chapter 11

Effectiveness of Formulaic Sequences on Morphological Structure (*-ed*): Using Dictogloss Tasks in Form-Focused Instruction (Age 14)

11.1 Introduction

The chapter describes formulaic sequences' effects on learning the English passive voice, *-ed*, which is mainly used in the EFL classroom (age 14) in *Junior High School S*. In Chapter 10, the study clarified that a lesson based on *instance to rule* combining FS with FonF created many opportunities to accumulate FS and to notice linguistic patterns in an interactive classroom. Through the storytelling, the students imitated, repeated, and made a skit using FS. FS may support language use until declarative knowledge catches up and coexists with procedural knowledge. However, Chapter 10's study in *Junior High School K* had some limitations: (1) There was no comparison between a treatment group and a contrast group because of the students' introductory period of English education (age 13), (2) the research focused on the students' receptive ability

(listening) and did not focus on their production through FS, and (3) according to the acquisition order for Japanese learners, the present progressive *-ing* is considered to be less difficult because no change of word order occurs between the learners' L1 and L2 (e.g., I walk—I *am* walk*ing*; Watashi wa aruku—Watshi wa Aruit*eitu*). Therefore, the current chapter focuses on the comparison between groups, the students' productive ability (improvised writing), and passive voice *-ed*, which changes the word order and might be a more difficult grammar item for Japanese students (e.g., I cook *lunch—Lunch* is cooked by me; *Watashi* wa *ranchi* wo ryori *suru—Ranchi* wa ryouri *sareru*.)

11.2 Instance to rule and Dictogloss

The instructive way of the current experiment follows the experiment conducted in the chapter 10 and promotes the last option *instance to rule* for adolescent learners (age 14). The approach taken here could be confirmed once again. The instructive ways used for this current study are (a) to provide exemplars as linguistic property (FS-exemplars) using teacher talk; (b) to elicit FS that has been accumulated by students prior to the lesson, providing an opportunity to access a rule based on their own FS-accumulation; (c) to provide an explicit grammar explanation using the chart after

students have formed a schema of the structure (FS-schema formation), and (d) to encourage students to imitate and repeat, borrowing the exemplars for production (FS-borrowing). With the exception of (c), all these procedures should be taught in English, and the teacher should encourage students to replace the FS part by borrowing the given exemplars rather than by creating new sentences. FS exemplars written on teachers' handouts can also be borrowed. For instance, between (b) and (c), the teacher encourages students to find linguistic patterns using dictogloss (Wajnryb, 1990) with a sound and structured input (FS-FonF). The grammar image acquired by the student is drawn on the chart (fewer grammar terms means less tedious explanations). In (d), the teacher must ensure that students do not rely on the rule but rather that they use imitating, repeating, borrowing, and replacing parts of chunks (increasing both token and type frequency) to form language slots that can be accessed rapidly. In (d), the grammar rule learned in (c) can be used by students to express their own ideas.

Therefore, the current study intends to use dictogloss and sound, putting the students in groups, which is an effective way to lead the learners to establish FMCs and absorb the language patterns collaboratively, which can be seen as recalling the story from the sound and reconstructing the sentences and the story plot (sound-dictogloss: S-dictogloss). The original idea of dictogloss, which uses not only the sound but the written

text at the same time, is a teaching procedure that involves the speedy dictation of a short text to a group of language students (Wajnryb, 1988,1990). Through this classroom activity, students practice listening, speaking, reading, and writing skills (Someya, 2011). Wajnryb (1990) introduced the dictogloss method as follows:

(1)Warm-up: Learners are introduced to the topic and do relevant vocabulary work.

(2)Dictation: Learners listen to the text read at a normal speed by their instructor.

(3)Reconstruction: Learners work together in small groups to reconstruct a version of the text.

(4)Analysis and correction: Learners analyze and compare their text with those of the other groups and the original text and make the necessary corrections.

Vasiljevic (2010) suggested that a class utilizing dictogloss integrates and embodies several important principles of language learning: learner autonomy, co-operation within and between groups, focus on meaning, and self- and peer assessment. Jacobs and Small (2003) emphasized that dictogloss is well suited to co-operative learning environment. Lapkin and Swain (2000) proposed that dictogloss focuses students' attention on form and makes formal features of the target language the substantive content of the task.

The reason why the current study utilizes sound to the extent that it does is that the students need to be exposed to the oral input and intake oral language forms at the very beginning level of English learning.

The present study emphasizes that the accumulation of chunks of language can induce learners' noticing of language patterns. However, we must question where the critical importance of the current study lies. Swan (2006) critically analyzed formulaic sequences, such as (1) "the sentence can be produced with minimal computation-hardly any reference to general grammatical rules is required" (p. 2), (2) "the storage of FS may be cheap in terms of mental resources, but putting materials into store is extremely time-consuming" (p.3), and (3) "whether classroom learners are able to generalize the rules from FS without explicit instruction has scarcely been investigated" (p. 3). Thus, regarding language teaching, Swain (1985, 2005) claimed that chunks might be less effective for the systematic teaching of new language. He also stated that grammar rules are psychologically valuable: they make students feel that they can understand and control the very complex materials that they are faced with.

The current study, which focuses on *instance to rule*, entails explicit grammar teaching by using an inductive approach rather than teaching "rules." Finding an optimal time to teach grammar explicitly, the teacher can induce students' noticing of

grammatical formations and then only briefly touch on the grammatical rules. However, our hypothesis might be partially opposed to Swan's claim, which disregards the cognitive process of FS. Accordingly, we did not deprive learners of an important opportunity to find linguistic patterns autonomously and instead attempted to prove the extent to which learners could increase their procedural knowledge while accumulating FS in the EFL classroom.

11.3 Experiment in *Junior High School S* (Age 14)

11.3.1 Aims

The purpose of the current study is to identify the role of FS in UBM and investigate the extent to which Japanese EFL students (age 14) notice a morphosyntactic structure *-ed*, the word order, and acquire the passive voice (*X* is cooked by *Y*). The research objectives are as follows:

(1)To develop and conduct English teaching based on FS and FonF to enhance students' procedural knowledge using dictogloss, which may enable them to find linguistic

patterns (the passive voice) while engaged in story-based content. The original digital story was retold and developed by the authors so that the students could accumulate chunks (e.g., *X* is cooked by *Y*), after which the parts of the chunks borrowing the language slot will be exchanged (e.g., *The box* is opened by *her*. *A tomato* is taken from *the box*).

(2)To investigate the extent to which students pay attention to patterns, specifically the morphosyntactic structure *-ed*; for this, we use pre-test and post-test control group designs to evaluate a possible increase of procedural knowledge within both the receptive and productive domains. The former is quantitatively verified with S-GJTs, while the latter is both quantitatively and qualitatively observed by analyzing the students' writing of improvised essays in a limited time.

11.3.2 Procedures

11.3.2.1 Participants

The participants were second-year junior high school students (*Mean age* = 14.8; *N* = 134). Their average English proficiency, as measured by self-recognized *EIKEN* grade levels, was Grade 4, with roughly 60% of the students within Grade 4, 30% within Grade 3, and 10% within pre-Grade 2. JTE-S taught each English lesson. The students were divided into two groups: *FS* and *Non-FS*. An achievement test conducted prior to the experiment revealed no statistically significant differences (*FS* group: *Mean* = 63.6, *SD* = 23.84, *Max* = 98, *Min* = 8; *Non-FS* group: *Mean* = 57.52, *SD* = 27.3, *Max* = 98, *Min* = 0; $t = 1.437$, $df = 145$, $p > .05$, *n.s.*). The test ranged from 0 to 100. The FS group used *instance to rule*, which focused on (1) a retelling of the story, "*Sarada de Genki*" by which the students were exposed to the story's content and frequent use of passive voice, (2) eliciting the students' notice of linguistic patterns (*X* is cooked by *Y*) using FS and FonF (digtogloss in groups), (3) creating a menu using chunks (language slots) without grammatical instruction, and (4) producing a group presentation about the topic. A brief explanation on the use of grammar was provided before Phase 4. The Non-FS group used *rule to instance*, which focused on (1) using oral introduction, (2) explaining the rules of grammar, (3) practicing dialogue in pairs, and (4) making a presentation about the topic See Table 11-1). The final phase, preparing a presentation, was similar in both groups and allowed for a more meaningful input. Therefore, the *Non-FS* group was considered

to be using a presentation-practice-production (PPP) approach rather than a traditional approach, which would rely more on grammar translation. The students were receiving English lessons once a week and were receiving total 70 hours of English instruction from age 11 to age 12. After entering the junior high school, they would increase to 230 hours (four times a week) in junior high school up to the present experiment. In their regular classes, the teachers had provided abundant inputs in English; however, *rule to instance* was exclusively used, primarily through a PPP approach. Prior to the experiment, the students had learned grammatical rules using an authorized textbook (copula-be, verbs, third-person singular, auxiliary verbs, past tense, future tense, infinitive). The passive voice was a new construction for these participants; and generally, it is considered difficult to learn for Japanese speakers.

11.3.2.2 Instruction

For the FS group, the lesson was based on *instance to rule* and incorporated teacher talk (using structured input) and the digital story "Salad," which was repeatedly retold by the authors so that the students could experience exemplar-based learning (See

Appendix 11-A). The original story, "*Sarada de Genki*," was written in Japanese by Kadono (1992) and retold as "Salad" for this study. The lesson was designed to focus on students' collaborative learning and their mutual joint attention was intentionally elicited, hence increasing the input frequency of the target structure (e.g., *X* is cooked by *Y*), to prompt the students' noticing of linguistic patterns and to teach grammar in an inductive way. The detailed procedures are shown in Table 11-1 (Experimental group: *FS* group; contrasting group: *Non-FS* group). As shown in Table 11-1, the total duration of the lesson was approximately four hours. Additional hours were used for the pre- and posttests. The experiment used the authorized textbook, *New Crown English Series 2*, Lesson 8, "India, My Country." The primary grammar goal was learning the passive voice, such as copula-be-past participle *-ed* or *-en* and prepositions by or at (e.g., English is spoken in India., or Rupee notes are used in India., It is sold at supermarket.).

Table 11-1

Lesson Procedures (50 min x 4 and, Pre- and Post-Tests)

Phases	*FS* group (Experimental Group)	*Non-FS* group (Contrasting Group)	Tests
Phase 1 (50 min)	Teacher Talk 1 Storytelling, "Salad" Sound dictogloss Quizzes on the content Listen to the passive voice included in the story in an interactive way.	Teacher Talk 1 Oral introduction using the passive voice Topic: "English is spoken in India." Grammar Explanation in Japanese Summarize the content of the workbook Grammar translation Reading practice	Pre-Test: S-GJTs Test 2 Fill-in-the-blank in a dialogue Pre-Essay
Phase 2 (50min)	Review Teacher Talk 2 Introduction of the task "Let's make your own menu" Group Activity 1 "Our original menu"	Review Teacher Talk 2 Oral introduction on the content of the textbook Practice new words Grammar translation Listening exercise	
Phase 3 (50min)	Group Activity 2 "Preparation for the presentation" Group Presentation using an overhead camera: OHC	Textbook exercise Verb conjugations (e.g., eat, ate, eaten) Group Activity 1 "Preparation for the presentation"	
Phase 4 (50min)	Teacher Talk 3 Picture explanation using the passive voice Grammar explanation using PowerPoint slides: PPT Rhythm chant in the passive voice (e.g., cook, be cooked, the dinner was cooked by me.)	Reading aloud using the textbook Group Presentation "Introducing the country using the passive voice"	Post-Test: S-GJTs Fill-in-the-blank in a dialogue Test 3 Post-Essay

Note. Pre-Tests were conducted before Phase 1. Post-Tests were conducted after Phase 4.

FS group *(instance to rule)*

The first lesson:

The teacher first elicited exiting FS that the students had already familiarized themselves with (e.g., the active voice: *Y* cooked dinner), retelling the digital story "Salad" （See Appendix 11-A） and then asked questions using the new construction, that is, the passive voice (e.g., Who cooked dinner? Yes, *Y* did. Dinner was cooked by *Y*.). After listening to the story, the students were put into groups and helped each other place illustrations from the story in order by recalling sentences and remembering the story's plot (S-dictogloss). They then listened to the same story and performed S-dictogloss again. The teacher and students checked the order of the illustrations by using questioning and answering.

The second lesson:

The teacher reviewed what the students learned from the story before giving them a worksheet and a supermarket leaflet. The students chose foods pictured on the leaflet, and they came up with an idea about creating the menu looking at the supermarket leaflet in an authentic way. They prepared a presentation of their menu using the worksheet（Appendix 11-B）.

The third lesson:

In groups of four, the students gave their presentations and commented on the strengths of each. They were given the opportunity to incorporate new words into the presentation before it. No grammar explanation was given before this lesson.

The fourth lesson:

The teacher asked which language patterns the students had found during the activities. The teacher then demonstrated the word order of the passive voice (e.g., "*X* cooks dinner; Dinner is cooked by *X*") and had the students connect the meaning with the form using true-or-false questions (e.g., "Dried bonito is made from fish: True; Dried bonito is made from meat: False"). Vocabulary was taught by using several chunks in rhythm (e.g., cook—be cooked, take—is taken by) rather than copying each piece of word separately; however, no explicit explanation of the verb's conjugation was provided.

Non-FS group *(rule to instance)*

The first lesson:

The teacher gave an oral introduction of the topic, "Which language is spoken in various countries?" She then explained the sentence structure of the passive voice and provided examples, such as "*X* cooks dinner; Dinner is cooked by *X*." The students took notes and

copied the sentences written on the chalkboard, after which they participated in a mechanical drill to change the active voice into the passive voice (e.g., “People speak English in India. English is spoken in India.”) and vice versa.

The second lesson:

The teacher reviewed what the students had learned by showing pictures of countries, asking the students to talk about the mother tongues or official languages spoken there. The students were then given a worksheet of new words and instructed to translate the English sentences. They participated in listening activities focused on the passive voice before answering multiple-choice questions about the content and how it connects with the form.

The third lesson:

The students completed textbook exercises and worksheets of verb conjugations (e.g., eat-ate-eaten). They prepared group presentations on the topic, “A country we want to visit,” where they intentional used the passive voice.

The fourth lesson:

The teacher reviewed sentences in the textbook and conducted reading and shadowing exercises. Each student gave a presentation about the topic.

Overall, the *FS* group was instructed using five major points; (1) being engaged with the content, (2) accumulating chunks of the content, (3) connecting the meaning with the form in the content interactively, (4) imitating and borrowing sentences from the story, and (5) increasing the opportunity to listen to the token frequency and changing part of the chunks, particularly the verbs. As a result, they became familiar with producing new chunks by themselves to create their narrative story (e.g., *X* is cooked by *Y*; *X* is taken from *Y*; *X* is cut by *Y*).

11.3.2.3 Data Analysis Procedures

We employed S-GJTs elaborated for the present study (Test 1: See Tables 11-3 and 11-4) and fill-in-the-blank in an interactive dialogue (Test 2: Appendix 11-C) to assess the students' grammatical sensitivity to each item (including linguistic patterns such as morphemes and word order) and to examine how each item (in Test 1) changes during

experimental practice from the Pre-Test to Post-Test. The tests are another means by which to determine if students' receptive knowledge has increased. In addition, we also used a Timed- Essay to evaluate the extent to which students use and borrow the FS they were exposed to during teaching. The essay was analyzed using criteria formulated by the authors, including word count, number of verbs used, the appearance of passive voice -*ed*, and an increase of story-based narrative descriptions. To verify the increase in students' receptive knowledge, S-GJTs (Test 1) and a fill-in-the-blank in an interactive dialogue (Test 2) were used. The total number of questions across both tests was 16. In Test 1, each grammar item was analyzed using the extent to which grammar errors are sensibly judged. The reliability of the test is described later.

On the other hand, to verify the transition of students' productive knowledge, a Timed-Essay (completed within 7 minutes) was used. The students in the both *FS* group and *Non-FS* group were requested to write a narrative story that continued the opening paragraph, "When I got home, I was very hungry. So I opened the fridge and I cooked." for Pre-Essay, and then, after the treatment, another opening paragraph, "When I got home, the birthday party was ready. The salad was prepared." For Post-Essay. Using the rubric shown in Table 11-2, the results were analyzed by the number

of words, the appearance of verbs, the appearance of the passive voice, and the quality of the content.

Table 11-2

Rubric for Evaluating Timed-Essay

Items	Criteria	Scores
Number of words	over 30 words	3
	from 15–30 words	2
	from 1–14 words	1
	none	0
Appearance of verbs	over 5 times	3
	3 or 4 times	2
	1 or 2 times	1
	none	0
Appearance of the passive voice	over 3 times	3
	twice	2
	once	1
	none	0
Content (story plot, narrative, borrowing the sentences from the story)	excellent	3
	good	2
	fair	1
	no words	0

Notes. The essays were written in 7 minutes.

11.3.2.4 Measurement of L2 Writing Development

Because we employed the measurement for writing shown in Table 11-2, we made sure to have tested this analysis technique; this was done in a situation within the same 7-minute time limit in a previous study that also employed the total number of words

(Henry, 1996; Storch, 2005), along with the total number of clauses (Robb, Ross, & Shortreed, 1986). T-units and C-units have also been examined in previous studies (See Chapter 7). However, considering the students were at the very beginning level in the current study, simple sentences made up most of the productions, so the number of clauses was not an appropriate evaluation method. Furthermore, we aimed to observe the students' improvement, such as FS-exemplars, FS schema formations, and FS-borrowing during the lessons. Supposing that the students could form a slot-filter category in the verb phrases and could begin to change the part of chunking, we needed to see their lexical richness and the variation of the language properties they attempted to use.

In order to see their language properties the students may possess, the present study employed a type-token ratio, or TTR (i.e., the total number of word types divided by the total number of word tokens). However, Ellis and Barkhuizen (2005) pointed out that a TTR is affected by text length. Therefore, we attempted to employ the Guiraud index (the number of word types divided by the square root of the number of word tokens, or word types $\sqrt{}$ word tokens). The examples of calculating the TTR are shown below (T.

Kashiwagi, 2005, p.36). The Guiraud index is also calculated using the type frequency and token frequency. *G* was calculated by AntConc[12] (2012) version 3.3.1.

Examples:

(a). I like tennis very much and my friend likes tennis very much, so we play tennis together. (type 11/ token 17: 11/17=0.647 ; Guiraud index: G=11$\sqrt{}$ 17=2.67)

(b). I like playing tennis very much with a friend of mine who is interested in it, too. (type 17/type 17: 17/17=1; Guiraud index; G=17$\sqrt{}$ 17=4.12)

Example (a) has the word type (11) and word token (17), accordingly, with TTR=0.647 and G= 2.67. Whereas, Example (b) has the word type (17) and word token (17), accordingly, with TTR=1 and G=4.12. Therefore, it is proved that the latter sentences show lexical richness better than the former one.

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[12] AntConc (Version 3.3.1) is a freeware corpus analysis toolkit for concordancing and text analysis developed by Anthony (2012). Retrieved on June 30, 2016 from http://www.laurenceanthony.net/software/antconc/

11.4 Results

11.4.1 Results of the S-GJTs and Analyses

Test 1 (S-GJTs) included 12 items. The Pre-Test, S-GJTs results of the *FS* group and *Non-FS* group are shown in Table 11-3 while the Post-Test, S-GJTs results of the *FS* group and *Non-FS* group are shown in Table 11-4 (the proportion of correct answers is displayed as a decimal value). The tables show that each item embraces the target structure by judging them to be grammatically correct or not. The growth of the *FS* group's S-GJTs score, showing the proportion of correct answers shifting from the Pre-Test to the Post-Test, is shown in Figure 11-1, while the shift in the *Non-FS* group's scores is shown in Figure 11-2. In addition, Test 2 (fill-in-the-blank in context) includes four items, and the score is included in the total score of 16. The total score and descriptive statistics are shown in Table 11-5, and the *t*-values for the repeated test are shown in Table 11-6. The change from Pre-Test to Post-Test is presented as a box plot graph in Figures 11-3.

Table 11-3

Pre-Test: S-GJTs Scores (FS group and Non-FS group)

No.	Pre-test:S-GJTs	Target grammatical items	FS Group % (*d*)	Non-FS Group % (*d*)
1	She opened the fridge.	✘	0.28	0.32
2	*X a* salad for her mother.	✓Omission verbs	0.49	0.6
3	Euro is used in France.	✘	0.51	0.61
4	This T-shirt is sold at the department store.	✘	0.78	0.67
5	My mother *dinner cooks* every day.	✓VO inverted	0.78	0.61
6	She put ham on her salad.	✘	0.51	0.43
7	The small bike *used* by *Y*.	✓Omission copula-be(Passive-V)	0.41	0.46
8	The classroom is cleaned every day.	✘	0.82	0.76
9	A big cat *into* the kitchen.	✓Omission verbs	0.59	0.58
10	Z wants to be a teacher in the future.	✘	0.78	0.71
11	A man *a nice car* made last year.	✓VO inverted	0.6	0.72
12	She wanted something to eat.	✘	0.59	0.6
		Average score	7.15	7.07

Note. The subject in Nos.2, 7 and 10 is a proper noun written as an initial.

Italics in S-GJTs indicaete errors.

%(d):Percentage of correct answers displayed as decimal values.

Table 11-4

Post-Test: S-GJTs Scores (FS Group and Non-FS Group)

No.	Post-test : S-GJTs	Target grammatical items	FS Group % (d)	Non-FS Group % (*d*)
1	This Salad is made by *X*.	✗	0.9	0.69
2	Tomato soup *cooked* by my mother.	✓Omission copula-be (Passive-V)	0.45	0.49
3	The bike is used by *X*.	✗	0.58	0.66
4	This car is washed every day.	✗	0.78	0.89
5	Hindi is *in India spoken* .	✓Insertion between Copula-be and verbs(-ed)	0.87	0.6
6	This chocolate is sold at the cake shop.	✗	0.64	0.51
7	English *spoken* in Canada.	✓Omission copula-be (Passsive-V)	0.58	0.41
8	Dollar is used in America.	✗	0.66	0.7
9	This jacket *sold* at the department store.	✓Omission copula-be (Passsive-V)	0.42	0.53
10	This bag is made in Japan.	✗	0.88	0.75
11	My mother *kitchen cleans* every day.	✓VO inverted	0.67	0.55
12	The fridge was opened by *Y*.	✗	0.54	0.48
		Average score	7.96	7.26

Note. The subject in Nos. 3 and 12 is a proper noun written as an initial.

Italics in S-GJT indicate errors.

%(d): Percentage of correct answers displayed as decimal values.

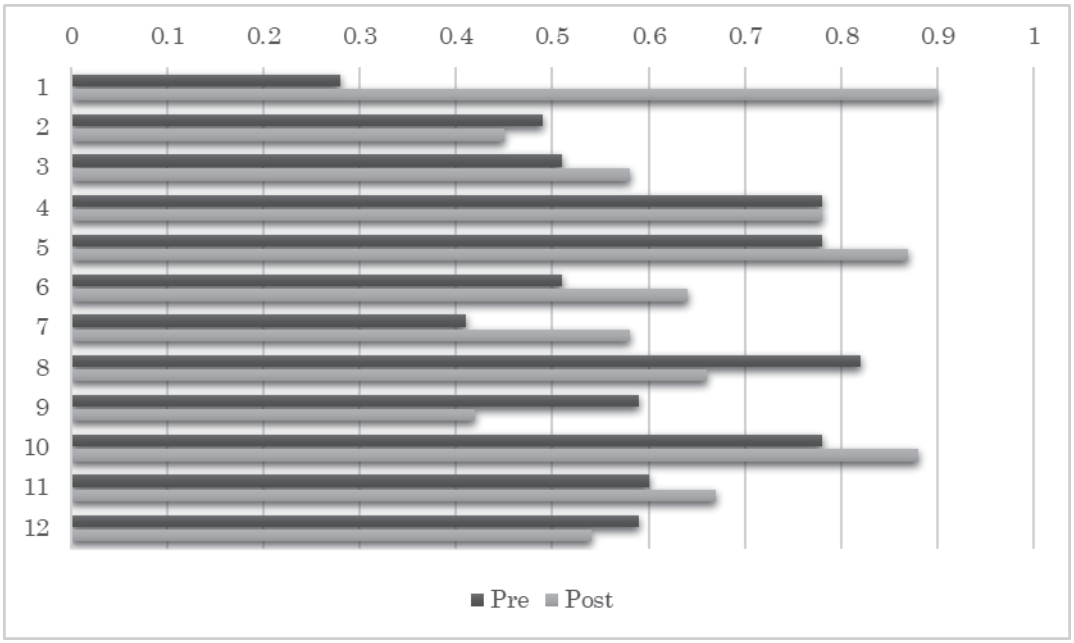

Figure 11-1. S-GJTs Scores for the *FS* group (Pre and Post)
X Axis: Proportion of correct answers; Y Axis: Nos.1–12

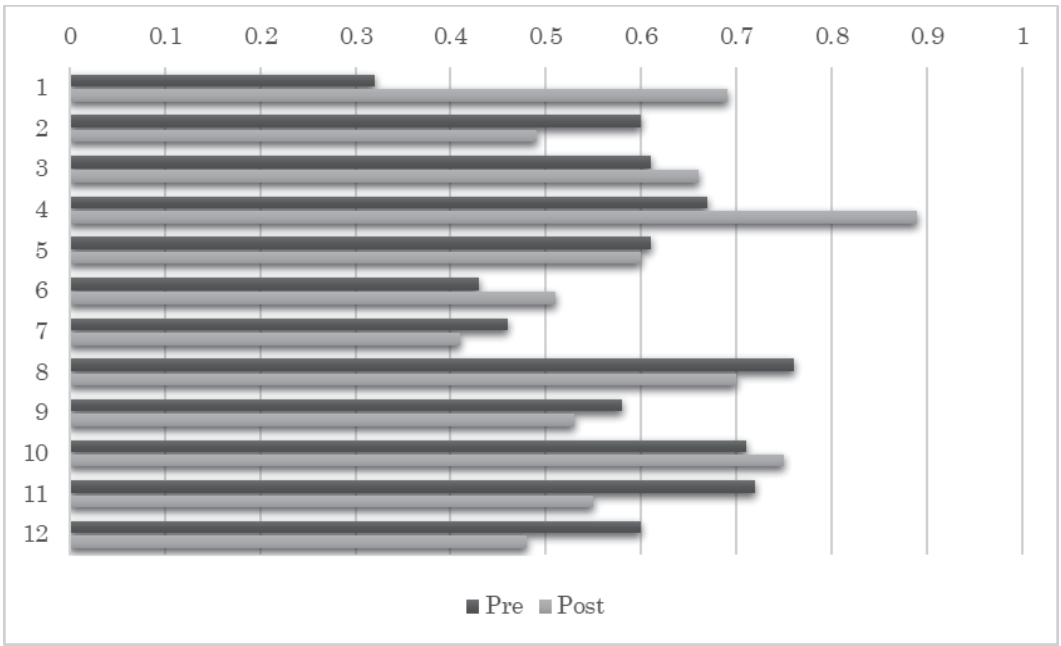

Figure 11-2. S-GJTs Scores for the *Non-FS* group (Pre and Post)
X Axis: Proportion of correct answers; Y Axis: Nos.1–12

The *FS* group showed a larger increase in scores (total S-GJTs score, pre and post: 7.15–7.96) from the Pre-Test to Post-Test than the *Non-FS* group (total S-GJTs score, pre and post: 7.07–7.26). Both groups demonstrated increased overall scores for *correct order* (Nos. 1, 3, 4, 6, 8, 10, and 12); however, occasionally, the *FS* group's scores were markedly higher (e.g., "Salad was made by *X*": *FS* group's *d*-value = 0.9; *Non-FS* group's *d*-value = 0.69). On the other hand, for *omission copula-b*e or verbs (the passive voice, Nos. 2, 7, and 9), neither group's scores clearly increased. However, the *FS* group's test scores for insertion *between copula-be and verbs -ed* rose dramatically (pre and post: No. 5, 0.78–0.87). For *V-O inverted,* the *FS* group showed a significant increase (pre and post: No. 11, 0.6–.067), while the *Non-FS* group showed a decrease on No. 5 (pre and post: No.5, 0.61–0.6) and No. 11 (pre and post: No. 11, 0.72–0.55). These results provide evidence that the *FS* group paid more attention to morphological structures *-ed*, enhancing their grammatical sensitivity to the passive voice and its word order.

An unpaired *t*-test was performed, and the Statistical Package for the Social Sciences (IBM SPSS, version 21) was used to analyze the results of the total scores of Tests 1 and 2. No significant difference between the groups was found on the Pre-Test (*FS* group [$N = 63$]: *Mean* = 8.9, *SD* = 1.88; *Non-FS* group [$N = 71$]: *Mean* = 8.53, *SD* = 2.43; $t = -1.044$, $p > .29$, *n.s.*) However, as seen in Tables 11-5 and 11-6, the overall S-

GJTs scores for the *FS* group distinctly improved from the Pre-Test to Post-Test. A significant difference was found between the *FS* group and the *Non-FS* Group (*FS* group [$N = 63$]: *Mean* = 9.7, *SD* = 3.34; *Non-FS* group [$N = 71$]: *Mean* = 8.42, *SD* = 3.43; $t = -2.176$, $*p < .031$, medium–small effect size). Meanwhile, in the *Non-FS* group, the S-GJTs scores did not show any improvement. The *Non-FS* group had a widely scattered standard deviation (*SD* = 3.43), meaning that many of the students were not able to judge whether the targeted structures were incorrect. It can be inferred that the procedures used in the *FS* group had a positive influence on the students' grammatical sensitivity to linguistic patterns or word orders, enabling them to judge both the correctness and incorrectness in the limited time. This indicates that the study significantly increased the learners' procedural knowledge.

Table 11-5

Descriptive Statistics of the S-GJTs Scores (FS group and Non-FS group)

FS group ($N = 63$) and *Non-FS* group ($N = 71$)								
	Pre-Test				Post-Test			
	M	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*
FS group	8.9	1.88	4	15	9.7	3.34	2	16
Non-FS group	8.53	2.34	4	14	8.42	3.43	3	16

Table 11-6

Difference Between the FS group and Non-FS group on the S-GJTs Scores (Unpaired t-test)

FS group (*N =63*) and *Non-FS* group (*N* = 71)					
	Pre-Test		Post-Test		Effect size
FS group and	*t-value*	*p-value*	*t-value*	*p-value*	*d*
Non-FS group	-1.044	.29 *n.s.*	-2.176	.031*	.36 Medium-Small

Note. **p* < .05, ***p* <. 01, *d*: effect size

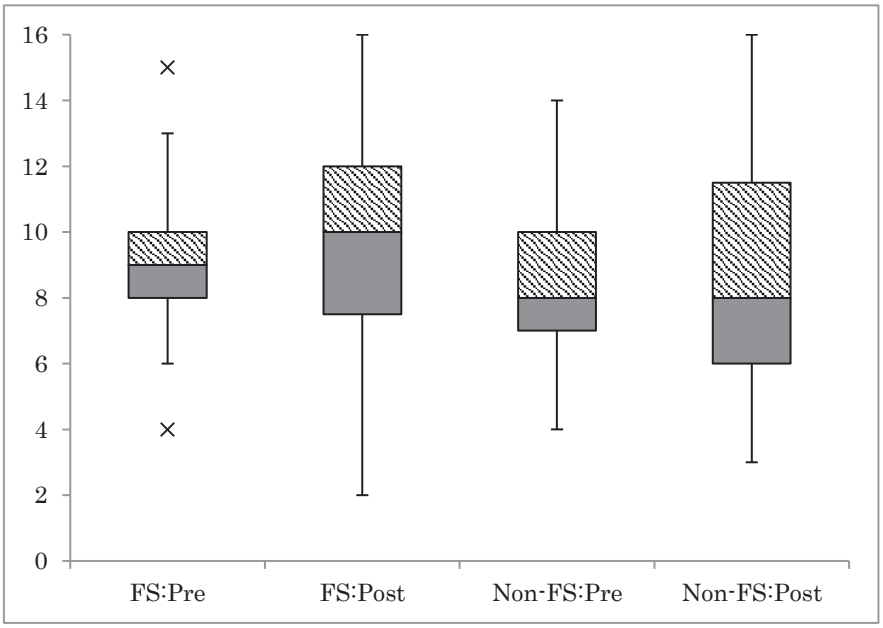

Figure 11-3. Graphic Comparison of the *FS* group and *Non-FS* group

X: Pre-Test and Post-Test, Y: S-GJTs scores (0–16)

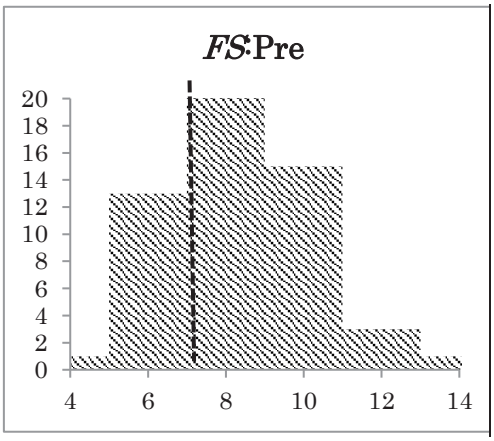

Figure 11-4. Histogram, *FS* group Pre-Test (*N* = 63)

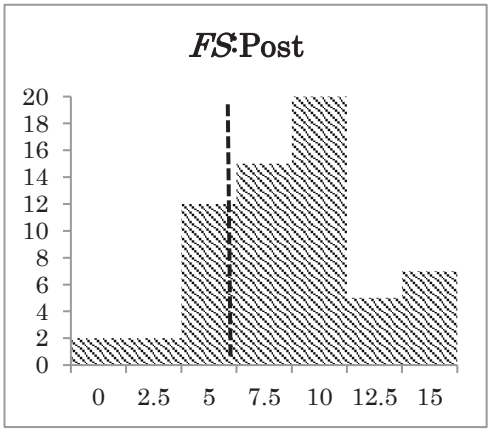

Figure 11-5. Histogram, *FS* group Post-Test (*N* = 71)

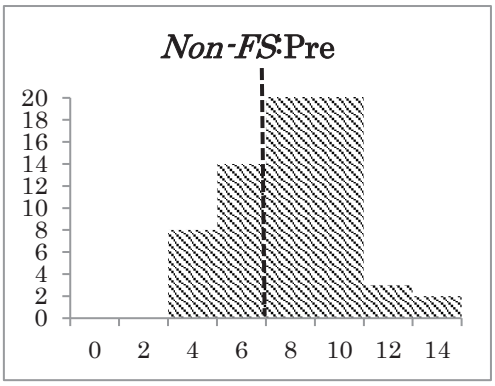

Figure 11-6. Histogram, *Non-FS* group Pre-Test (*N* = 63)

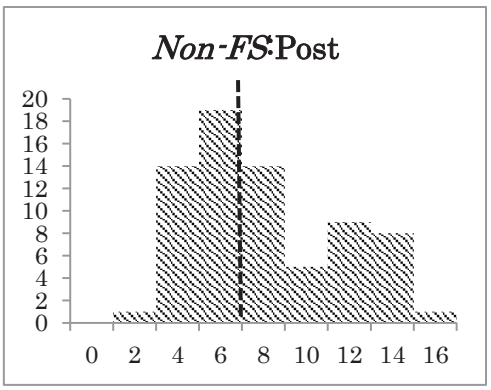

Figure 11-7. Histogram, *Non-FS* group Post-Test (*N* = 71)

Figures 11-3, 11-4, 11-5, 11-6, and 11-7 show a shift from the Pre-Test to Post-Test. For instance, the number of students to the left of the dotted vertical line (representing a score of less than half) decreased, and the number of medium-proficiency students (to the right of the dotted vertical line) increased. The overall level of grammatical

sensitivity improved. The results were similar to those in Chapter 10 (morphological structure *-ing*).

11.4.2 Results of Writing Using a Rubric and Analyses

To verify the increase in the students' productive knowledge, the total score of the timed essay was analyzed using the rubric shown in Table 11-2. Each category and criterion is shown in Table 11-7 (Pre-Timed-Essay) and Table 11-8 (Post-Essay). The descriptive statistics and the comparison between the two groups were statistically analyzed using a *Mann-Whitney U test.* The mean score for each category comparing the Pre-Essay and the Post-Essay in the *FS* group and the *Non-FS* group, respectively, are shown in Figure 11-4 and Figure 11-5.

A significant difference was found between the groups at the beginning of the lessons (*FS* group: $df = 62$, $Mean = 4.62$, $SD = 2.2$, $Min = 0$, $Max = 9$; *Non-FS* group: $df = 70$, $Mean = 3.32$, $SD = 2.48$, $Min = 0$, $Max = 9$, $z = 3.05$, $p = .0023$, $r = .26$, small effect size). The current study divided the students into two groups based on an achievement test conducted prior to the experiment, and their S-GJTs for the Pre-Test scores showed no significant difference; however, their writing and essays were not taken into

consideration when grouping the students. As the lessons proceeded, the current study found a difference in the students' writing abilities over the 7 minutes. However, because the effect size *r* was small (*r* = .26, see Table 11-7), we considered there to be no significant difference between the groups. On the contrary, a larger significant difference was identified between the groups at the end of the lessons (*FS* group: *df* = 62, *Mean* = 7.41, *SD* = 2.75, *Min* = 0, *Max* = 12; *Non-FS* group: *df* = 70, *Mean* = 4.51, *SD* = 3.04, *Min* = 0, *Max* = 11, *z* = 5.25, ***p* = .0000, *r* = .45, medium effect size, see Table 11-8). The *FS* group showed a greater increase than the *Non-FS* group on the total scores, the appearance of passive voice, the number of words, and the quality of the content.

Table 11-7

Descriptive Statistics and the Difference Between the FS group and Non-FS group on the Pre-Essay (Mann-Whitney U-test was Used)

	Group	*df*	*M*	*SD*	*Min.*	*Max.*	*Z*	*p-value*	****	*effect size r*
Number of words	FS	62	1.59	0.78	0	3	3.78	.0002	**	.33 medium
	Non-FS	70	1.01	0.87	0	3				
Verbs	FS	62	1.83	1.04	0	3	3.26	.0011	**	.28 small
	Non-FS	70	1.18	1.16	0	3				
Passive voice	FS	62	0.02	0.13	0	1	1.06	.2884	*n.s.*	.09 none
	Non-FS	70	0	0	0	0				
Content	FS	62	1.2	0.64	0	3	0.64	.5254	*n.s.*	.64 none
	Non-FS	70	1.13	0.7	0	3				
Total	FS	62	4.62	2.2	0	9	3.05	.0023	**	.26 small
	Non-FS	70	3.32	2.48	0	9				

Note. **p* < .05, ***p* < .01, *r* = effect size

Table 11-8

Descriptive Statistics and the Difference Between the FS group and Non-FS group on the Post-Essay

	Group	*df*	*M*	*SD*	*Min.*	*Max.*	*Z*	*p-value*	**	*effect size r*
Number of words	*FS*	62	2.3	0.85	0	3	5.4	0	**	.47 medium
	Non-FS	70	1.37	0.9	0	3				
Verbs	*FS*	62	2.3	0.82	0	3	4.52	0	**	.39 medium
	Non-FS	70	1.44	1.12	0	3				
Passive voice	*FS*	62	0.98	1.1	0	3	3.21	.0013	**	.28 small
	Non-FS	70	0.41	0.69	0	3				
Content	*FS*	62	1.84	0.72	0	3	4.02	.0001	**	.35 medium
	Non-FS	70	1.3	0.78	0	3				
Total	*FS*	62	7.41	2.75	0	12	5.25	0	**	.45 medium
	Non-FS	70	4.51	3.04	0	11				

Note. *$p < .05$, **$p < .01$, r = effect size

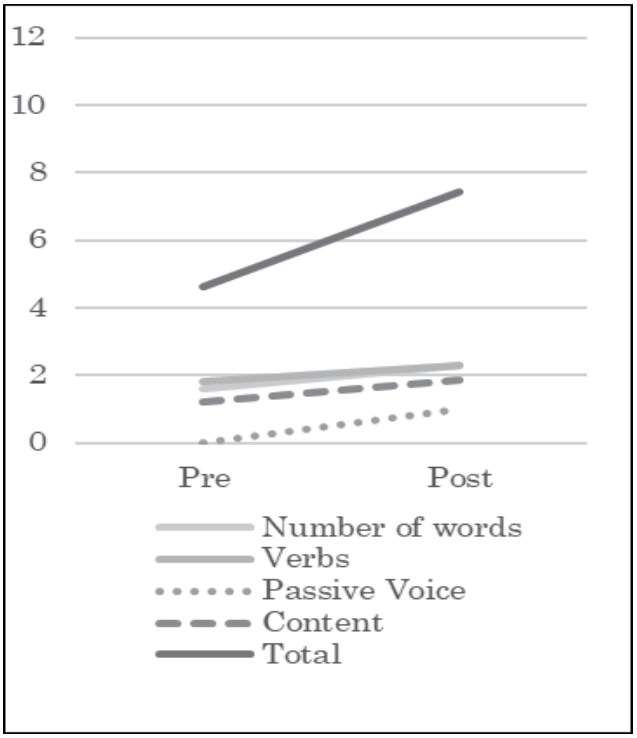

Figure 11-8. Mean Score of the *FS* Group on the Pre- and Post-Essay

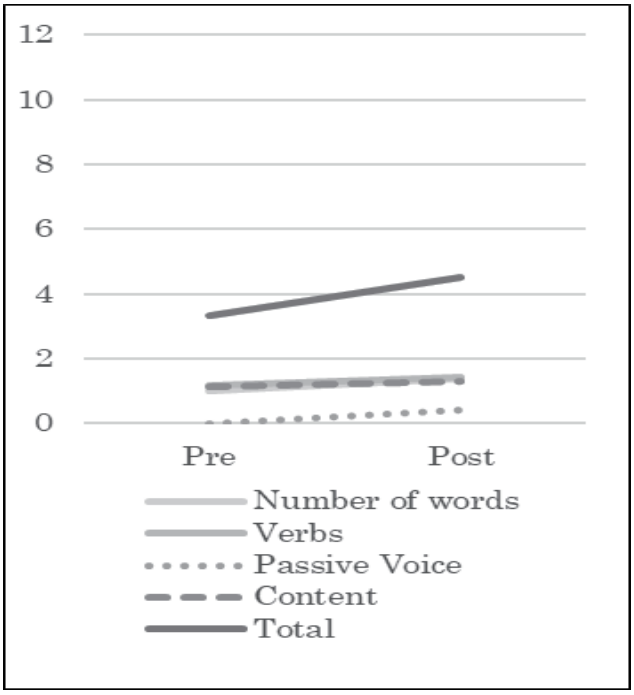

Figure 11-9. Mean Score of *Non-FS* Group on the Pre- and Post-Essay

The results indicate that FS had a positive influence on the students' ability to effectively convey their ideas in writing in the limited time available. Furthermore, the students in this group tended to use narrative stories, which may have been the result of a cognitive process learned from the S-dictogloss, the sounds the students heard, the teacher's structured input, and being under the positive influence of their L2 peers.

11.4.3 Results of Writing Using Token-Type Frequency and Analyses

FS were featured in repetitive sentences first, and then, the students had to find patterns and borrow the exemplars from the model sentences or the S-dictogloss. This section quotes three types of student essays: (1) an essay written by a student with a high S-GJTs score; (2) an essay written by a student with middle S-GJTs score; and (3) an essay written by a student with a low S-GJTs score when comparing the FS group with *Non-FS* group respectively. The improvements of in the essays for both groups written from the Pre-Essay to Post-Essay are shown in Tables 11-9 and 11-10, respectively.

The results were extracted using the following rubric: (1) the *FS* group tended to demonstrate longer sentences and a growth in the number of words that the students wrote (e.g., a low-level student in the *FS* group increased the number of words from 0 to 30), (2) the number of verbs and copula-be increased in the *FS* group, (3) the *FS* group's essays demonstrated more narrative descriptions (e.g., *X* wanted to get it; was cooked by), which may have been borrowed from the model sentences, teacher talk, and dictogloss, and (4) less grammar errors were found. On the other hand, the *Non-FS* group did not use the borrowed exemplars or phrases in their essays. The *Non-FS* group tended to use a limited number of phrases repeatedly (e.g., and had a great time; *X* is very delicious.), to use Japanese words, and showed grammar errors when using the passive

voice (e.g., The birthday cake was cooked *brother*.). It can be seen that the fewer errors in the *FS* group occurred because of the students borrowing the whole chunks successfully. The implication here demonstrates some features of the UBM.

We also further the results in Tables 11-9 and 11-10 by adding the *Guiraud Index*(*G*) above, and the statistical analysis is shown in Table 11-11 to identify the extent to which the students attempted to borrow some examples (token words) from the inputs that they were exposed to in the lesson to change the part of the language slot (the way of calculating: token words minus type words equals the frequency of changed slots), in which the students' procedural knowledge is on the edge of proceedings, as proposed by the author. The value is defined as edge of proceedings (*EP)* in the current study. Finally, as a result of their schema formation, the lexical complexity is noted using *G* during the lessons. In short, it is supposed to show that the more the students demonstrate the *EP* value, the more frequently they have borrowed the exemplars and proceeded to the schema formation. The higher the students demonstrate *G*, the more they have used a variety of language showing the lexical richness within the context. However, note that the value may indicate not only the verb phrases (*X* is cooked by; *X* is given by) but any other types of slot (It's *X*) .

Table 11-9

FS group: Three Students' Timed-Essay Within 7 min (Pre-Essay and Post-Essay)

Students (S)	Timed Essay （7 min.） without using any dictionaries	Overall Words	Verbs& Copula-be	Passive Voice	S-GJTs	Guiraud Index: *G*
		Pre-Post	Pre-Post	Pre-Post	Pre-Post	Pre-Post
Essay 2 High-Level S-1	Pre-Essay: Cup noodle. I didn't eat any lunch. It's very delicious. But, I can't be full. So, I ate chocolate, when I started to eat it, my brother came home. He wanted to eat it, too. Eat it with him.	40＜67	0＜12	0＝0	8＝8	3.9＜6.5
	Post Essay: By my mother, today is my *brother* birthday. I *taked* the plate, and *bring* his favorite orange juice. Then, he got home. We said "Happy birthday to you!" He said "Thank you . Let's eat that cake." We ate it. It's delicious. After eating, I gave him present. It's video game. He wanted to get it. So he was very happy. We had a very good time yesterday.					
Essay 3 Mid-Level S-3	Pre-Essay: Something hot to eat. Well.... Oh, this is UDON. I cook UDON today! But I don't have a big DONBURI. So I cook YAKIUDON today.	25＜51	0＜8	0＜10	8＜11	4.2<7.8
	Post-Essay: The salad was cooked by my brother. This salad is delicious, but really *large*. So we can't finish to eat salad. Suddenly, my father came home, and he ate the salad! And he said "Happy birthday." *with* eating salad. After party, I opened the present. "Oh? It is salad." Oh No!. I don't want salad!"					
Essay 5 Low-Level S-2	Pre-Essay: No words	0＜33	0＜5	0＝0	8＝8	*n.w.* <4.1
	Post-Essay By my mother. My mother *cook* very well. This *present* the video game. I like video game. And, *birthday* cake was cooked by my mother. *Birthday* cake is very delicious! I'm so happy!					
Note. *Italic* letters represent errors while learning L2.						
* Underlined Parts are borrowed from the teacher or the story.						
* Capital letters: Japanese words						

Table 11-10

Non-FS group: Three Students' Timed-Essay Within 7 min. (Pre-Essay and Post-Essay)

Students (S)	Timed Essay (7min) without using any dictionaries	Overall Words	Verbs& Copula-be	Passive Voice	S-GJTs	Guiraud Index: *G*
		Pre-Post	Pre-Post	Pre-Post	Pre-Post	Pre-Post
Essay 2 High-Level S-4	Pre-Essay: I cook pizza. Because I like pizza. But I cook it first time. I could cook pizza. It's very delicious. I had a good time. Post Essay: ・・・by my father. The present *is gaven* by my brothers. TV game is in *the present*. I *hope to want* it. I had a good time.	23＜26	6=6	0＜2	7＜12	3.6<4.7
Essay 3 Mid-Level S-5	Pre-Essay: *SARADA*. I use vegetables and *mayonese*. It's very delicious. Next, I cook *surp.* Post Essay: ・・・by my mother. The presnet *is by* his father. The birthday cake is made by his uncle. He looks so happy. *Because,* every one *say* "Congratulation!" for him, They had a great time.	13＜33	3＜5	0＜1	7＞6	3.3<5.6
Essay 5 Low-Level S-6	Pre-Essay: I cook is UDON. UDON is very delicous. I cook egg. Post Essay: ・・・by sisiter. This salad is delicious. The birthday cake was cooked *brother.* They *looks* happy. HAPPY BIRTHDAY.	8＜17	0＜3	0＜1	9＜10	2.4＜3.9
Note. *Italic* letters represent errors while learning L2.						
* Underlined Parts are borrowed from the teacher or the story.						
* Capital letters: Japanese words						

Table 11-11

Analysis of Timed Essay using Token and Type Frequency, Edge of Proceedings (EP) and Guraud Index(G): Comparing the FS group With Non-FS group (Pre-Essay and Post-Essay).

FS group (N = 63) and *Non-FS* group (N = 71)									
		Pre-Essay				Post-Essay			
		Token	*Type*	*EP*	*G*	*Token*	*Type*	*EP*	*G*
FS group	*Mean*	17.76	13.68	3.80	3.19	27.83	24.75	3.08	4.55
	(SD)	(11.32)	(8.78)	(4.86)	(1.23)	(13.88)	(12,43)	(4.26)	(1.27)
	min.	2	2	2	0.73	2	2	0	1.41
	max.	60	37	30	5.85	69	67	30	8.07
Non-FS group	*Mean*	12.17	10.28	1.89	2.71	16.42	15.04	1.38	3.40
	(SD)	(11.27)	(8.82)	(4.34)	(1.28)	(12.63)	(11.44)	(1.90)	(1.53)
	min.	1	1	0	1	1	1	0	1
	max.	52	34	34	5.59	52	47	10	6.52

G: Guiraud Index; *EP*: Edge of Proceedings (times)

Table 11-12

Edge of Proceedings (EP)Values: Results of the ANOVA

	ANOVA					
Source	*df*	*F*	*p*		partial η^2	
Groups	1	6.57	0.011	*	0.047	Non-FS<FS
Error	132	(21.24)	0.01	*	0.1	
Time(Pre/post)	1	0.417	0.52	*n.s*	0.003	
Groups×Time	1	0.417	0.52	*n.s*	0.003	
Error	132	(10.29)				

Note. *p < .05, **p <. 01, partial η^2: effect size

Table 11-13

Guiraud Index(G): Results of the ANOVA

	ANOVA					
Source	*df*	*F*	*p*		partial η^2	
Groups	1	14.98	0	**	0.102	Non-FS<FS
Error	132	(21.24)			0.1	
Time(Pre/post)	1	119.21	0	**	0.48	Pre<Post
Groups×Time	1	13.03	0	**	0.09	
Error	132	(0.59)				

Note. *p < .05, **p <. 01, partial η^2: effect size

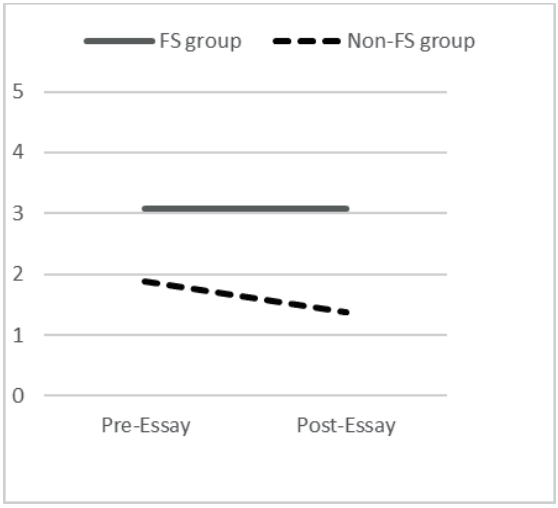

Figure 11-10. Edge of Proceedings Value Between the *FS* group and *Non-FS* group (Comparison Between Pre-Essay and Post-Essay)

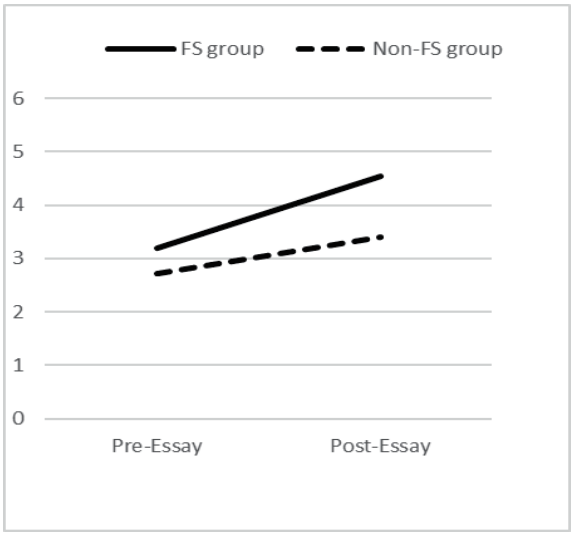

Figure 11-11. Guiraud Index Value Between *FS* Group and *Non-FS* Group (Comparison between the Pre-Essay and Post-Essay)

To analyze the scores of the two items (Edge of proceedings value: *EP*, Guraud Index value: *G*), a 2 (Test timing: Pre-Essay and Post-Essay)×2 (Group: FS group and *Non-FS* group, two-way analysis of covariance(*ANOVA*) was conducted for each test result. The results are shown in Tables 11-11, 11-12, and 11-13. The comparison between the groups and test timings is illustrated by a line graph in Figures 11-10 and 11-11.

First, regarding the *EP* values: the analysis revealed significant main effects between the groups (*Non-FS*<*FS*), $F(1,132)=6.57$, $^{*}p=.011$, partial $\eta^2=.047$), whereas there was no significant main effects for test timings (Pre-Essay=Post-Essay), $F(1,132)=6.57$, $p=.52$, partial $\eta^2=.003$, *n.s.*). There was no interaction between the groups and test timings, $F(1,132)=6.57$, $p=.52$, partial $\eta^2=.003$, *n.s.*). The results

indicate that the *FS* group maintained the scores (*EP*), showing a borrowing of the exemplars and proceeding schema formation; on the other hand, the *Non-FS* group did not and declined, as shown in the graph in Figure 11-10.

Second, regarding the *G* values: the analysis revealed significant main effects for both groups (Pre-Essay<Post-Essay) and test timing (pre<post), $F(1,132)=14.98$, $^{**}p=.000$, partial $\eta^2=.102$; $F(1,132)=119.21$, $^{**}p=.000$, partial $\eta^2=.48$). There was an interaction between the groups and test timings ($F(1,132)=13.03$, $^{**}p=.000$, partial $\eta^2=.09$). The results indicate that the *FS* group showed a significant increase of scores (*G*), which marked the lexical complexity and richness arising from frequent proceedings of the schema formation during the lessons. In other words, the FS approach had better effects on the increase of procedural knowledge not only in receptive domains, as we proved in S-GJTs, but in productive ones as well.

11.5 Discussions and Conclusion

The purpose of the current study was to examine the role of FS in UBM and to investigate the extent to which Japanese EFL students (junior high school students, age 14) were able to notice morphological patterns (-ed) or (-en) and acquired the use of the passive voice (*X* is cooked by *Y*; *X* is spoken by *Y*). Although the passive voice using morphemes *-ed* or *-en* was considered to be difficult for Japanese learners due to their L1 negative transfer, the frequency of morphemes in English promoted the learners procedural knowledge regarding how it could be used in the meaningful context. The sum of procedures led the learners to become aware of linguistic patterns. As a result, it is assumed that the language patterns of use (*X* is cooked by *Y*) emerged in their productions.

We developed and conducted an English lesson based on FS and FonF using dictogloss from sounds. As Vasiljevic (2010) proposed, dictogloss can encourage learner autonomy and cooperation within groups, helping them focus on meaning and form at the same time. In this learning environment, the students were engaged in the content and increased their procedural knowledge.

Other additional findings should be noted. First, the FS was featured in distinguishing grammatical incorrectness regarding *word order (inverted V-O)* and gaining a grammatical sensitivity and in finding an awkward insertion *between copula-be and verbs -ed.* It is believed that the lexical chunks used in the FS approach prompted the students to be conscious of grammatical errors. It can be said that FS is an effective way to support early adolescent students to have schematic knowledge and grammatical sensitivities to any of the auditory inputs given during the lessons. Second, both fast and slow learners increased their scores, and the gap between them narrowed, signaling that the number of students who understood the content grew. This indicates that activities such as S-dictogloss in groups, in which the students borrow and use the exemplars in a joint attentional classroom while feeling relaxed and less pressure of making mistakes in grammar, can be useful. In contrast, in the *Non-FS* group, the *SD* value increased, and the students' learning outcomes showed a larger disparity. They did not benefit from learning processes such as *rule to instance*, in which they may have had anxiety about using a new form of grammar correctly. Third, one of the most telling observations in favor of the FS approach is the fact that their impromptu output in writing drastically increased. The students in the FS group actively borrowed the exemplars and changed the part or slots, and then, as a result, their essays embraced

verb phrases, correct use of passive voice in chunked language, and showed lexical richness. On the other hand, the *Non-FS* group seemed to demonstrate less variety of verb phrases and incorrect use of passive voice because they had to make the sentences according to the grammar rules which they had not yet understood. There was a tendency to repeat the same simple patterns (See Table 11-11 showing that the value of *G* remained low (G value, *FS* group: G=4.55; Non-FS group: G=3.40) even after their lessons.

One of the limitations of the current study was that we focused on receptive knowledge (listening) and productive knowledge (writing); reading and speaking remain areas for future research.

The students' language learning process might improve further in a joint attentional environment, such as one that adheres to UBM standards. Considering that the UBM derives from mother language acquisition, this type of learning environment is similar to everyday parent–child talk, which is how the child acquires L1. Therefore, English teachers, when teaching L2, need to be conscious of the extent to which junior high school students perform better using an FS approach and *instance to rule* and must determine how it can best be used in their classrooms.

Chapter 12

Discussions and Conclusion

12.1 Findings and Discussions

This dissertation has analyzed the different ways that early adolescent learners ranging from the age of 11–14 were exposed to English and whether they were able to establish FMCs for verb phrases in the EFL classroom. The current study is based on the assumption that early adolescent learners do not merely imitate chunks of words; they are able to find patterns in verb phrases the more they experience exemplar-based learning. After a certain number of hours of exemplar-based learning (learning item by item), our hypothesis was that EFL learners, as well as mother language learners, might be able to form the schema formations for verbs, extending the ability to use a specific language slot (such as want *X*, give *XY*; *X* is cooked by *Y*). The hypotheses were tested throughout several empirical studies and substantively and positively supported. The results draw some important implications; here, early adolescent learners were able to

learn better in an inductive way through *instance to rule* and demonstrated unconstrained performance in impromptu writing production using the UBM approach.

As the first step (Chapters 1, 2, and 3) and prior to the series of experiments, the role of introducing verb phrases that may influence the learners' language acquisition at a beginning stage was carefully considered. According to the literature review, the process of exemplar-based learning based on UBM has also been discussed in past studies. In *English Activities*, learning is exemplar based; that is, learners imitate and repeat the formulaic chunks in a meaningful context in every lesson. Accordingly, learners attempt to discover language patterns (by noticing language slots) and categorize these patterns before undergoing rule-based learning. It is assumed that learners' proceduralization may actively occur when they retrieve exemplars. The procedure includes categorization and schematization in an implicit way; such procedures may have a large influence on learning. Our research on the variable rationale of SLA is as follows:

(1)Learners are able to establish FMCs successfully at the first encounter of a foreign language when they are exposed to many exemplars and are given the opportunity to imitate and repeat what they hear.

(2)Learners' finding of linguistic patterns can be promoted by providing formulaic chunks that have input salience. Language learning is exemplar based, and the accumulation of exemplars serves as the database for the acquisition of language grammar.

(3)Learners' finding of linguistic patterns is facilitated by teachers providing structured input (implicit FonF) with token frequency to gain a type frequency. Learners pay attention to both meaning and form in dual mode. Detecting and analyzing the patterns, the schema formation for verbs occur without disrupting the interactive learning.

(4)According to FS, *instance to rule* is a suitable option for teaching grammar to early adolescent learners rather than using presentation-practice-production (PPP). It does not deny teaching declarative knowledge but induces noticing the structure and forming schematic knowledge first during language usage.

(5)When gaining procedural knowledge of language, basic forms and patterns should be explained briefly, asking interactively how the learners found the structures.

As the second step (Chapter 4), the verb phrases used in the experiments were selected by referring to the rank of verbs most frequently used in *English Notebook 1 and 2* (such as do, go, have, like, make, play, and say) and in the language corpora (get,

give, know, take, think, etc.). The author's analysis of *English Notebook 1 and 2* led to the conclusion that the verbs in the former list were essential in the children's interaction with others. The verbs in the latter list were essential for communication. The latter verbs (e.g., get, give, know, take, think, etcetera) are called obtaining verbs or perception verbs, whose meanings are abstract and difficult to express with gestures or pictures. However, to observe the cognitive proceduralization of the children, it is also necessary to examine how children successfully notice the FMCs for abstract verb phrases. Hence, we still had to overcome various difficulties in assessing the children's invisible cognitive procedures by hearing the auditory input before we could conduct the experiment.

As the third step (Chapter 5), to address the continuous research, the *ATM-V* (Audio-Visual Teaching Materials for Verbs) was developed as an assessment tool and promoter to force the children pay attention to the motion and its syntax (e.g., get *X*). *ATM-V* was used to assist children in learning abstract verb concepts through language slots within verb phrases by simulating the process of L1 verb acquisition. It was also used to observe the children's development of verb phrases in the experiment conducted at *Elementary School M* and served as a trigger for raising their ability to understand the abstract concepts of verbs. Throughout the experiment (Kashiwagi, 2007), the *ATM-V* had a positive effect in helping children learn abstract verbs such as need or smell,

whose meaning could not be conveyed through gestures alone. However, the children's inferencing ability for these verb phrases was as effective as using the *ATM-V* with other types of verbs such as drink, wash, and break. This means that it was possible for the children to guess the meaning of the verb phrases without using the *ATM-V.* The results show that the *ATM-V* can help increase the children's overall English and could be a trigger, as well as a kind of picture cards of verbs and showing their gestures.

For the next part of the dissertation (Chapters 6, 7, and 8) and after carefully preparing, the practical lessons were conducted, and the data on noticing the FMCs for verb phrases were collected. The procedures for teaching the children used English sounds without showing any alphabet letters. A FonF approach (mainly, structured input from teachers) was actively integrated into the lessons.

The first experiment conducted with fifth-grade children in *Elementary School A*, which had a lower amount of input (25 h) compared with all grades in *Elementary School B,* had the following results:

(1) Fifth-grade children (age 11) in *Elementary School A*, who were experiencing their initial introduction to English, were observed to have considerably noticed Degree I and Degree Ⅱ verb phrases (the correct answers were around 80–90%). However,

for Degree Ⅲ, the correct answers were around 50–70%. This demonstrated that the higher the degree of word familiarity in the verb phrases, the better the children were able to identify the proper meaning of the phrases. This suggests that children were more likely to extablish FMCs if a given verb phrase included words they already knew (or were familiar with). The children grasped the meaning of phrases with the help of a language slot (e.g., wash *my face*, change *my clothes*, give *a flower* to~).If the children were familiar with the sound of "my face," then the unknown part "---" from "--- my face" could often be guessed correctly. With this type of processing, it is said that children may be able to solve the language puzzle

(2) finding the words to fit the spaces and attempt to find a prototype (I change *X*), However, at the stage of *Elementary School A* did not reach the next stage of forming language slots. The results of experiments obtained from *Elementary School A* showed that no C-units or blurry type outputs appeared in the children's response to the ALT's talk. The children could only pick up a few loan words from the ALT's talk at this stage.

(3) Compared with this, the second experiment among children from first through sixth grade (ages 7–12) in *Elementary School B* had a much higher amount of input (10 h and up to 200 h). In *Elementary School B*, in terms of the scores on both Degree Ⅱ

and Degree Ⅲ verb phrase, significant differences were found between the third and fourth graders (age 9–10). By the time they had reached the fourth grade (age 10), the children began developing the ability for analytical learning by noticing FMCs. We might surmise that fourth grade is an optimal time in EFL learning to focus the children's attention toward verb phrases through structured input with FonF. In addition, the fourth graders underwent approximately 90 lessons (45 min for one lesson) of exemplar-based learning. However, the optimal time may differ depending on the children's degree of exposure to the input and the kind of instruction used. The results showed that noticing the linguistic patterns are incidental; however, the time at which learners start to notice these patterns might depend on the extent to which the learners had been exposed to the input beforehand.

(4) In *Elementary School B*, children in the lower grade levels tended to focus on meaning. They also repeated only the nouns and loan words, so they had quite a few C-units in their responses to the ALT's talk. The children in the upper grades, meanwhile, showed a tendency to establish FMCs successfully and could give word combinations and C-units. The C2+C3 ratio became greater at the higher grade levels (first and second grade: 11.8 %; third grade: 21.7%). The blurry type output increases from the third grade on (See Table 14, No.14: *go*・・*school*, No.18: *brush my*・・).

Verb-phrase-oriented ratios increased significantly at higher grade levels (first and second grade: 6% ; third grade: 36.8%). The fifth graders, who had the highest verb-phrase-oriented ratio (55.6%), could imitatively output verb phrases imitatively and correctly (*ge(t)*・・*backpack*, *change my clothes*・・). The data alluded to the children being able to formulate language slots and schematize frames that might have developed among the fifth graders (160 hours of lessons). In particular, many types of word combinations (e.g., *brush my teeth, change my clothes*) emerged. Fifth graders were able to find the language slot with longer units and reproduce these longer units; that is, they did not just pick up familiar words.

(5) To summarize, children's learning can be viewed as having three stages: 1) exemplar-based learning that focuses on meaning, 2) exemplar-based learning accompanied by the noticing of FMCs, and 3) exemplar-based learning with schema formations within language slots.

A comparison of the fifth graders from *Elementary School A* with those from *Elementary School B* gave the following findings:

(5) The remarkable difference in score between *Elementary School A* and *Elementary School B* on Degree Ⅱ and Ⅲ verb phrases suggested that the accumulation of exemplar-based learning in *Elementary School B* helped the children recall the correct verb of verb phrases, even if the target verb phrases were unfamiliar to them. However, in *Elementary School A*, three-fourths of the children were fairly successful in establishing FMCs, while one-fourth struggled with establishing FMCs. The former groups also did not find language slots; rather, they obtained the correct answers through the help of recognition activities, such as a language puzzle. This is based on the author's observation of the children's responses to the ALT's talk. Here, exemplar-based learning may have a positive influence on even the slow learners' cognitive proceduralization, which includes categorization and schematization in an implicit way.

(6) The fifth-grade children in *Elementary School B* could give word combinations and C-units, and they seemed to catch the English sounds for many kinds of word combinations (e.g., brush my teeth, change my clothes). They were also able to search for the salient parts of sentences, such as the loan words or familiar words, and were able to pay attention to the accompanying language slot. By observing the children's responses to the ALT, if the children heard formulaic chunks, they could act on their

language slot by supporting either the salient V-part (where verbs are more salient) or N-part (where nouns are more salient). This procedure resembled a language puzzle, as was seen among the fifth-grade children at *Elementary School A*. However, it was remarkable that the fifth graders at *Elementary School B* were able to grasp the longer word combinations, which include known and unknown parts. They were also able to pay attention to the slots and schematize them (e.g., *brush my---, ge(t)---backpack)*. In Figures 12-3, 12-4, and 12-5, where the V-part can trigger the noticing of FMCs within the language slot and where the N-part can trigger the noticing of FMCs within the language slot in an implicit way, both the V-part and N-part are abstract but can be grasped by the whole language slot, respectively. These results may be compared with those from the fifth graders at *Elementary School A* in Figures 12-1 and 12-2. The latter picked up only a few loan words, which they had already heard in Japanese. If they heard formulaic chunks, they memorized only the salient part. These chunks were not yet accompanied by active language slots (see Figures 12-1 and 12-2).

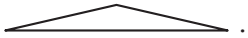 . get my backpack	N-part my backpack
formulaic chunks	e-wf, 0.8 e-wf, loan word

Figure 12-1. A Language Slot of the Children at *Elementary School A* (No slot)

 change my clothes	V-part change
formulaic chunks	e-wf, 0.92 e-wf, 0.12

Figure 12-2. A Language Slot of the Children at *Elementary School A* (No slot)

 change my clothes	V-part N-part change my ---
formulaic chunks	e-wf, 0.92 e-wf, 0.12

Figure 12-3. A Language Slot of the Children at *Elementary School B* (V-part slot)

 get my backpack	V-part N-part ge(t)---? my backpack
formulaic chunks	e-wf, 0.8 e-wf, Japanese loan word

Figure 12-4. A Language Slot of the Children at *Elementary School B* (N-part slot)

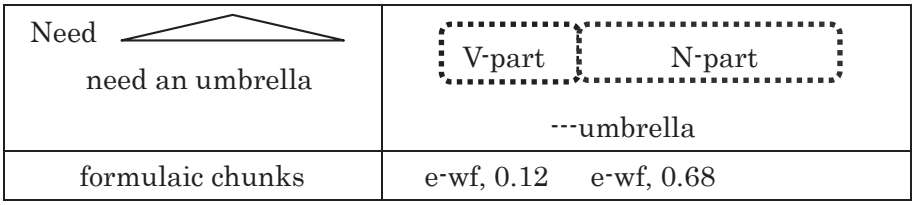

Figure 12-5. A Language Slot of the Children at *Elementary School B* (VN-blurry type in an implicit way)

As the fifth step (Chapter 9), a digital story was developed by the author; the goal here was to have the fifth-grade children be exposed to the structured input repeatedly while they imitated this input, repeating and acting it out. The children started noticing linguistic patterns earlier and more skillfully when the teachers utilized token frequency combined with type frequency in the EFL classroom. Token frequency can provide children with a firm foundation to map sounds with meanings, whereas token frequency combined with type frequency through structured input can improve their ability to notice linguistic structures within language slots. Furthermore, regarding the focused construction of "give *X* the *Y*," it was able to elicit the schema formation of verbs if the *X* and *Y* parts can be replaced with alternative words (e.g., "give you the ball"). As Goldberg (1995) suggested, "give *X* the *Y*" implies that "caused *Y* to move to *X*"; therefore, the children might come to schematize a structure that would remain grammatically advanced until the grammar catches up (Myles, 2004) . Thus, the current study brought the following certain verifications:

(1) The effectiveness of the UBM approach in an EFL classroom was proved.

(2) The dynamic input-driven approach (Ortega, 2015) when using the story with a token frequency combined with type frequency through a structured input was more effective than pure meaning-focused approach using exclusively token frequency.

(3) This approach, *instance to rule* as the sequence of instructions and FonF as a trigger of noticing patterns narrowed the gap among the children's degree of acquiring FMCs.

Goldberg and Casenhiser (2008) added that "there are other factors that play a role in a classroom setting."(p.210). Ortega (2015) also implied the possibility of UBM as follows:

"Language is ontologically understood from within a usage-based perspective as a tool for communication and for social and interpersonal action." (p.361). Therefore, to promote the procedures, *instance to rule*, effectively, communicative environment in the classroom is conducive.

As the sixth step (Chapter 10), an *instance to rule* shift from item to category learning was conducted among the adolescent learners at *Junior High School K*. FS can

enhance students' grammatical sensitivity to linguistic patterns and exert a positive influence on language acquisition in terms of students' ability to find linguistic patterns, infer meanings, and develop procedural knowledge. The effectiveness of using S-dictogloss in groups was confirmed as one of the embodiments of the UBM. The students (age 13) were given opportunities to repeat and imitate what they had heard and then work together; they attempted to establish FMCs and noticed the *-ing* part of the verb, analyzed the form, and made their own hypotheses of morphological structures. The teacher also demonstrated a grammar explanation, eliciting their hypotheses the students came to possess. Afterwards, the students told the J-JTE (Y), "We understood the grammatical structure firmly in this way." These results regarding UBM led the following statements:

(1) We identified the strength of the UBM regarding how the students came to be sensitive when it came to feeling the awkwardness of grammar errors, such as wrong word order, inserted words between the verbs and objectives, word omissions, and so forth.

(2) The UBM approach using dictogloss in groups naturally held collaborative learning, so it also narrowed the gap among the students' grammatical sensitivities to morphological structures *-ed*.

(3) A brief explicit grammar explanation provided by the teacher in the latter half in the experiments should not be overlooked in *instance to rule* learning. However, we suggest that the teacher should elicit what the students found out the linguistic patterns and return them to the communicative tasks once again.

To be summarized, in the following Figure 12-6, the author proposes a model of *instance to rule* based on the four main components (input, intake, interlanguage development and output) which were originally explored by Gass (1997, p.3) and the Figure adapted from VanPatten and Cadierno (See Chapter 2, Figure 2-1).

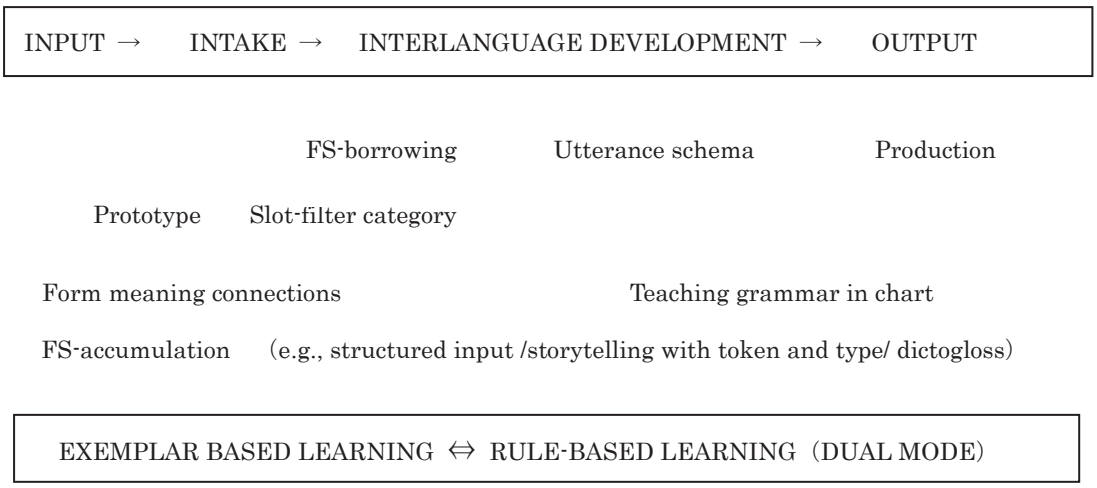

Figure 12-6. A Model of Instance to Rule

As the seventh step (Chapter 11), it was verified that FS is an effective way to support early adolescent students in *Junior High School S* in their developing of schematic knowledge and grammatical sensitivities to auditory inputs during a lesson. One of the most telling observations in favor of the FS approach is the fact that the children's impromptu output in writing drastically improved. In particular, the treatment group (*FS* group) demonstrated a significant difference in their impromptu writing. On the other hand, *rule to instance* (defined as PPP in the current study) did not demonstrate better scores regarding S-GJTs, *EP,* and *G*-value. Thus, the study's results indicated several points:

(1)The outstanding point of FS was featured in its ability to help the students distinguish grammatical correctness (passive voice *-ed*) regarding *word order* (Inverted VO) and in gaining a grammatical sensitivity and noting the awkwardness of inserting between Copula-be and Verbs *-ed.*

(2)In the UBM approach, the students borrowed the exemplars and changed the part or slots in S-dictogloss tasks. As a result, their essays embraced verb phrases, correct use of passive voice in chunked language, and lexical richness according to *EP* and *G*-value.

(3)In addition, the UBM approach upwardly narrowed the gap among the students' grammatical sensitivities to morphological structures *-ed*.

12.2 Implications of the UBM Approach for EFL Learning

From the findings of this dissertation, there are developmental discussions regarding FMCs and exemplar-based learning that can be applied to L2 language learning. One of implications for EFL language learning is that the UBM approach plays an important role in teaching grammar for early adolescent learners in EFL classrooms. In recent years, a certain number of UBM studies have been conducted in L1 and L2 settings; the experiment results for these studies have shown statistically significantly larger gains than the control conditions when it comes to the grammar learned and improvement in speaking for motion verbs (Eskildsen, Cadierno, & Li, 2015; Ortega, 2015). Eskildsen et al. (2015) found that the development of *come* patterns yields an increase in the degree of productivity. For example, "pivot verbs (come, go patterns) became concrete path lexicalizations, in particular for *to*" (p. 227). Our 10-year research (the year from 2008 to 2017) also found that the development of V-O combinations, give OO patterns and morphological patterns *-ing, and -ed*, fruitfully helping the students

judge the degree of correctness and incorrectness of grammatical sentences and improve their productivity. However, EFL language learning often tends to use a structural approach or the PPP approach, using the textbook and following the order of grammar items in which the rules are explained in the learners' L1 and where the target grammar is displayed prior to being involved in the meaningful context. The students soon come to know what will be taught for the class at the beginning and tend to lose the motivation to write a story as an exercise. The approach lowers the students' attention to the meaning-bearing form and takes away a unique moment of representation, establishing FMCs, finding prototypes, being able to form a slot filter and categorization, and schema, all of which may contribute to subsequent language processing and can speed up their learning later on. Thus, the implications here are as follows:

(1) The *instance to rule* of instructing with the UBM approach is a fundamental principle.

(2) Production at these ages is merely a reflection of the extent to which learners are exposed to the target languages; accordingly, it is also a principle that provides the opportunities and approaches in which the learners can borrow a focused FS and write or speak about the content.

(3) Explicit grammar explanation in an inductive way might be effective to the points where the learners can accumulate a certain amount of FS. Here, it is also important for the teacher to use visual aids or gestures while using verbs because the meaning (motion events) and its syntax are compatibly analyzed.

(4) The implications suggested above are aimed at encouraging the learners to be more conscious learners, ones who are willing to communicate in social interpersonal action. Teaching grammar using the UBM approach enables both the teacher and learners to be involved in exclusively cognitive tasks in EFL classrooms.

The current study might have succeeded in finding the effectiveness of FS in ages up to 14; however, we need to conduct further research regarding the merits of FS and "instance to rule" for upper-grade age groups. Further interest arises on whether the language experience through FS would create a long-term effect for learners when it comes to distinguishing among cognitive operations at the successive stage. To prove these points, longitudinal research will need to be conducted in the future.

One of the limitations of this dissertation was that we did not focus on reading and speaking because the children and students were at the beginning of the introductory period of English education. However, the unique feature of the current

study is that there is still very few pieces of empirical research in EFL classrooms that address these developmental age. We conclude that the findings and procedures of assessing the learner language through the UBM approach can fill in the gap between the ages, as well as the one among the individual learners in the classroom.

The current study was approved by the Ethics Committee of Osaka Kyoiku University, and informed consent was obtained from the Nara Prefectural Board of Education and *Elementary School M, A, B,* and *T* and *Junior High School K* and *S.* The test scores were subjected to statistical analyses using Microsoft Excel Statistics 2012 for Windows, SSRI, Tokyo, Japan (for Chapter 5) and SPSS 14.0 for Windows (for Chapters 6–11).

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Appendices

Appendix 4-A

The List of 50 Verbs and Their Core Image (Chapter 4)

	Verbs	VO-Combinations Within Situational Context	Core Definitions of the Verbs
1	*have*	have a handkerchief in my pocket	To own, hold or possess persons or objects inside. To be close together
2	*bring*	bring a flower for X	To bring objects and carry them. To come to a place with X
3	*give*	give a flower to X	To transfer something from one person to another
4	*take*	take the sketchbook	To receive something from another person
5	*catch*	catch the ball	To stop and get or hold a moving object
6	*hold*	hold the baby	To support and keep a person or an object in a particular position
7	*get*	get a gold medal	To achieve a particular goal or item through effort
8	*keep*	keep the ball	To stay in a particular condition or position The object is not given back to others
9	*go*	go to the bus stop	To move from a present location to another
10	*come*	come to the bus stop	To get closer to one place than where you are To arrive at a destination from a starting point
11	*put-1*	put the ball on the table	To move the object to a particular place or position.
12	*put-2*	put the picture on the chalkboard	To move the object in to a particular place or position The action occurs in your closer place
13	*make*	make a cake	To create or prepare the object by combining materials or putting parts together
14	*write*	write a report	To use a pencil or pen to make letters or numbers on a surface
15	*draw*	draw a square on the paper	To make pictures with a pencil, pen or chalk
16	*cook*	cook an omelet	To prepare food by heating it, for example by boiling, baking or frying
17	*smell*	smell the noodles	To notice or recognize a particular scent
18	*drink*	drink juice	To take in liquid through one's mouth
19	*sing*	sing a song	To make musical sound with your voice
20	*say*	say "Hello."	To make an intentional sound with one's voice

21	*tell*	tell X the message	To give information to others by speaking or writing
22	*call*	call me "X"	To use a particular name or title when you are talking to another
23	*see*	see the flower	To become aware of a person or an object by using your eyes
24	*watch*	watch TV	To look at something for a period of time
25	*look*	look at the clock	To turn your eyes in a particular direction. To look at an object with intention
26	*hear*	hear a noise	To be aware of sounds, voice, noise with your ears
27	*listen*	listen to music	To pay attention to sounds, voice
28	*touch*	touch the keys (piano)	To put your hands or another part of your body on an object
29	*ask*	ask a question	To say or write something in order to get information or things that you would like others to do.
30	*find*	find the ticket	To discover something hidden or the lost unexpectedly or by chance
31	*break*	break the window	To cause something to be separated into two or more pieces
32	*cut*	cut the ribbon	To separate an object into smaller pieces by using a sharp tool, such as knife or scissors
33	*blow*	blow bubbles	To send out air from the mouth
34	*kick*	kick the ball	To hit an object with your foot
35	*know*	know the song	To have information in your mind as a result of experience or because you have learned or been told about something
36	*leave*	leave my umbrella	To leave a place physically while an object that belongs to you is left behind
37	*like*	Do you like comics?	To find something pleasant or attractive
38	*think*	think of the answer	To have a particular idea or opinion in your mind. To try to solve problems
39	*want*	want an ice cream	To have a desire or a wish for something you don't have
40	*need*	need an umbrella	To require something that it is necessary
41	*use*	use a pair of scissors	To do something with a particular object for a particular purpose
42	*do*	do my homework	To take a particular action for a particular purpose
43	*change*	change my clothes	Replace an object. To take something from one state or form into another
44	*turn*	turn the knob	To move an object in a circular direction
45	*wash*	wash my face	To make clean using water and often with soap

46	*play*	play the piano	To do things for pleasure To make a musical instrument create sounds
47	*pull*	pull the rope	To use force to move an object towards you
48	*carry*	carry the pennant	To hold something and move forward with it
49	*help*	help my mother	To make it easier or possible for someone to do something, by giving them something they need
50	*try*	try the sushi	To make an attempt or effort to do something new or different

Appendix 5-A

Description of Pre-Test (Chapter 5)

	Test Descriptions
1	I have two cats/two dogs/two birds.
2	I like soccer/baseball/tennis.
3	Do you like fish?
4	Do you have bananas?
5	I'm long. I am eating. I am green. What am I?
6	I'm white. I'm happy. I'm running. What am I?
7	It's twelve o'clock.
8	I'm putting on my cap.
9	Mom, I'm home. Hi! Ken.
10	I'm hungry, Mom. Wash your hands first.
11	Here's your snack. Thank you.

Note. The tests were conducted by only the sound

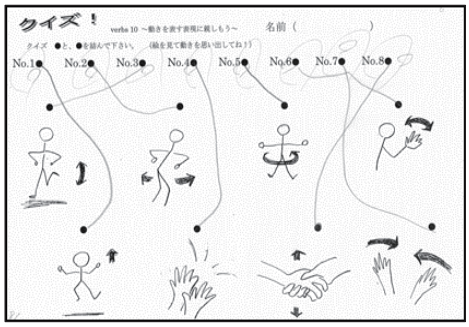
Appendix 5-B

Verb Phrases Included in Post-Test (Chapter 5)

Test includes the following verbs in the context.	
look at the fish	bring you towel
get a car	wash my eyes
eat the noodle	kick my legs
drink juice	take a shower
like swimming	put on my cap
like singing	Do you have a～？ (three times)
have a handkerchief	wash my hands
play the guitar	watch TV
play the violin	

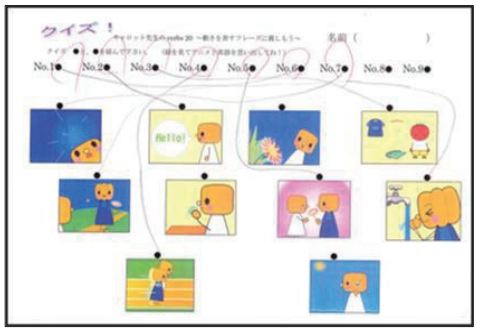
Appendix 6-A

Test Materials of Test 1 (Chapter 6)



Appendix 6-B

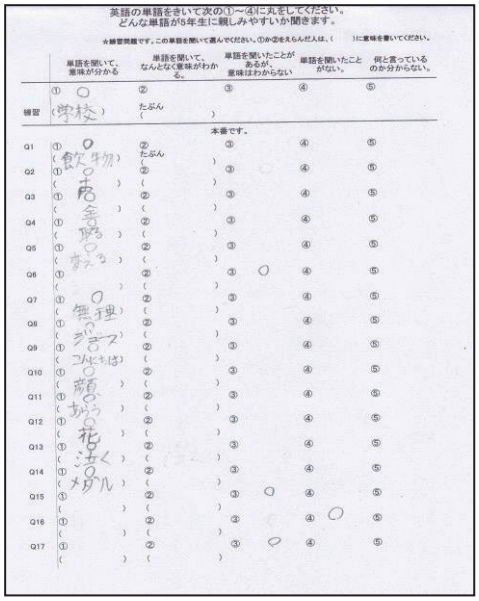
Test Materials of Test 2 (Chapter 6)



Appendix 6-C

Questionnaire Sheet Conducted

at Elementary School *S* (Chapter 6)


英語の単語をきいて次の①～④に丸をしてください。
どんな単語が5年生に親しみやすいか聞きます。

★練習問題です。この単語を聞いて選んでください。①か②を えらんだ人は、（　　）に意味を書いてください。

	単語を聞いて、意味が分かる	単語を聞いて、なんとなく意味がわかる。	単語を聞いたことがあるが、意味はわからない	単語を聞いたことがない。	何と言っているのか分からない。
	①	②	③	④	⑤
練習	（学校）	たぶん（　　）			

本番です。

Q1	①	②	③	④	⑤
	（飲み物）	たぶん（　　）			
Q2	①	②	③	④	⑤
	（　　）	（　　）			
Q3	①	②	③	④	⑤
	（　　）	（　　）			
Q4	①	②	③	④	⑤
	（　　）	（　　）			
Q5	①	②	③	④	⑤
	（　　）	（　　）			
Q6	①	②	③	④	⑤
	（　　）	（　　）			
Q7	①	②	③	④	⑤
	（　　）	（　　）			
Q8	①	②	③	④	⑤
	（　　）	（　　）			
Q9	①	②	③	④	⑤
	（　　）	（　　）			
Q10	①	②	③	④	⑤
	（　　）	（　　）			
Q11	①	②	③	④	⑤
	（　　）	（　　）			
Q12	①	②	③	④	⑤
	（　　）	（　　）			
Q13	①	②	③	④	⑤
	（　　）	（　　）			
Q14	①	②	③	④	⑤
	（　　）	（　　）			
Q15	①	②	③	④	⑤
	（　　）	（　　）			
Q16	①	②	③	④	⑤
	（　　）	（　　）			
Q17	①	②	③	④	⑤
	（　　）	（　　）			

Appendix 6-D

Questions from Appendix 6-C Introduced by the Audio CD (Chapter 6)

Q1	drink	Q10	face
Q2	say	Q11	wash
Q3	gold	Q12	flower
Q4	get	Q13	clothes
Q5	change	Q14	medal
Q6	need	Q15	umbrella
Q7	give	Q16	bring
Q8	need	Q17	see
Q9	hello		

Appendix 9-A

Teaching Materials “Twelve Zodiac Animals” (Chapter 9)

Introduction

In the following teaching materials, *Italic Parts** are the Instructions as FonF which were taught for the *AES* group but not for the *BES* group defined in the Chapter 9.

Broadcasting Program for English Activities (2012) “Twelve Zodiac Animals”

Produced by Nara Prefectural Board of Education
Supervising editor: Kazuko Kashiwagi
Animated Movie: Cap Entertainment

Contents

Contents of the DVD: Story movie Pre-activities (Chants 1-5, Karaoke, Three Hints Quizzes, and Games)

The story “Twelve Zodiac Animals” was made for the children so that they could encounter with the storytelling. At the first time, children were able to listen to English sounds through the pictures, serifs, and sound effects in the animations. Keeping in mind the following points, the teacher and children could play out the drama and role-play:

1. In the pre-activity, the children were exposed to basic words and expressions using games and quizzes; however, the children were not allowed to learn about the main content of the story in Japanese. The children encountered the main story with new expressions in the context.
2. In the post-activity, the children role-played as one character (such as Mouse, Ox, Tiger, and so on) and performed the drama. The teacher also could tell a story with a picture book or show a puppet play. To familiarize the children with the story sentences, setting DVD and CDs for each group is also useful for word reproduction. The children followed the serif by looking at the screen and then imitated and repeated them. This is a very important way to learn English at this age. It is also important for children to guess the meaning and nonverbal information (such as the feeling of the space between lines, activating their background knowledge, recognizing a tone of voice, and acting through gestures). These experiences nurture the parts of their brain focused on language (a sense and emotion of learning new language properties through interaction).
3. The words and phrases learned through games and activities differ from ones learned through mechanical practice. In this case, the children did not need to memorize the sentences; instead, the teacher, with the help of the DVD movie, played the difficult roles, allowing the children to play the roles with shorter sentences. The story has numerous expressions with repeating phrases so that the children will first imitate and then may change a part of phrases (e.g., "I give you the fourth year" in which underlined part can be changed to "the seventh year"). This learning procedure can be a bedrock of language learning.
4. The story intensively uses the verbs and verb phrases that are easy to guess the meaning of the story. In general, verbs are very useful for children to use in everyday life (e.g., I can run. / I can open the door. / *Rat jumped on the Ox's back.*)

Pre-activities

Contents	Movie and its Script/ Activities
Chants 1	●Names of the Animals dog, cat, rabbit, elephant, panda, monkey, tiger, ox, lion, koala, sheep, pig, deer, boar, horse, rooster, snake, rat, dragon Game: "Sit down, please" Give seven animal picture cards for each group, and the children must memorize the names for 10 seconds. Turn over the cards, and everyone

stands up. Listen to the chants, and if the groups have the animal, take it and sit down. The children can help each other.

Chants 2

●Numbers 1–20

Game; "What are you doing?"

The teacher says, "What are you doing?" and then points out an animal; then, the children make the gestures and say the phrases. The teacher shows a different gesture to be tricky. If the children do the same gestures as the teacher, they must sit down.

Chants 3

●Ordinal numbers 1st, 2nd,3rd,-20th

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
11th	12th	13th	14th	15th	16th	17th	18th	19th	20th

Game: Number Game

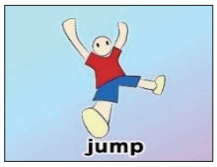
The teacher shows a key number. The children start clapping hands and say the chants but do not clap their hands while saying the keyword.

If the key numbers are a multiple of 3, the children do not clap their hands.

Chants 4

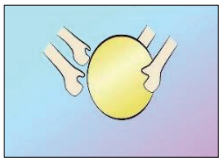
●*Phrases used in the main parts of the story*

jump, fly, swim, run, start, go, fight, open, close, give



*Teaching Verbs Phrases With Type Frequency **

What can you do? *I can jump.*
What can you do? *I can fly.*
What can you do? *I can swim.*
What can you do? *I can run.*
What can you do? *I can start.*
What can you do? *I can go.*
What can you do? *I can fight.*
What can you do? *I can open the door.*
What can you do? *I can close the door.*
What can you do? *I can give you the ball.*



Chants 5

God: *"You are the first. I give you the first year, Rat."*

*Role Play**	*Rat: "I am Rat. Thank you, God. Squeak. Squeak."* *God: "You are the second. I give you the second year, Ox."* *Ox: "I am Ox. Thank you, God. Moo. Moo."* *God: "You are the third. I give you the third year, Tiger."* *Tiger: "I am Tiger. Thank you, God. Roar. Roar."* *God: "You are the fourth. I give you the fourth year, Rabbit."* *Rabbit: "I am Rabbit. Thank you, God."* *God: "You are the fifth. I give you the fifth year, Dragon."* *Dragon: "I am Dragon. Thank you, God."* *God: "You are the sixth. I give you the sixth year, Snake."* *Snake: "I am Snake. Thank you, God. Hiss. Hiss"* *God: "You are the seventh. I give you the seventh year, Horse."* *Horse: "I am Horse. Thank you, God. Neigh. Neigh."* *God: "You are the eighth. I give you the eighth year, Sheep."* *Sheep: "I am Sheep. Thank you, God. Baa. Baa."* *God: "You are the ninth. I give you the ninth year, Monkey"* *Monkey: "I am Monkey. Thank you, God. Oo. Oo. Ah. Ah."* *God: "You are the tenth. I give you the tenth year, Rooster."* *Rooster: "I am Rooster. Thank you, God. Cock-a-doodle-doo."* *God: "You are the eleventh. I give you the eleventh year, Dog."* *Dog: "I am Dog. Thank you, God. Bow-wow."* *God: "You are the twelfth. I give you the twelfth year, Boar."* *Boar: "I am Boar. Thank you, God. Oink. Oink."*

Main-activities

Scene	Movie Chapter	Scripts
1	Many animals listen to God's speech in front of the gate	*Once upon a time, God said to the animals—sound effect (China Cymbals)* God: "Tomorrow is January 1st." Animals: "Yes, sir!" God: "It's New Year's Day. Come to see me, and each of you is going to be a captain of a year." All Animals: "How?"

		God: “Faster is better.” Animals: “Wow!” “Great!” Sound Effect (Hurrah!) (Pause) Rabbit: “I want to be the first. I can jump!” Dragon: “I want to be the first. I can fly!” Turtle: “I want to be the first. I can swim. All Animals: Really? Rat: “I want to be the first. Squeak! Squeak!” Rooster: “I want to be the first. Cock-a-doodle-do!” “Get ready! Set! Go!”
2	Rat wisely tells a lie	Cat: “Excuse me, Rat. When is New Year’s Day?” Rat: “Oh! It’s January 2nd!” Cat: “Thank you.”
3	Rat jumps on the Ox’s back.	Rat: “Good evening, Ox. Are you starting?” Ox: “Good evening, Rat. Yes, I am. I am slow, so I start early. Moo. Moo.” Rat jumps on the Ox’s back. Rat: “Here we go!” Sound effect (the sound of Ox’s walking) “I’m sleepy.”
4	Rat arrives at the gate first.	The gate opens with a creak. Ox: “I’m number one. Yahoo!” Then Rat jumps down and runs to God. Rat: “I am the first!” Ox: “Oh, no. I’m the second.”
5	Tiger and Rabbit arrive at the gate.	Tiger: “I can run fast. I’m the third.” Rabbit: “I can run fast, too. I’m the fourth.”
6	Dragon and Snake’s talk	Sound effect (Rumbling sound) Dragon: “I can fly.” Dragon: “Hello, Snake, come with me.” Sound Effect (Sneaking up) Snake: “No, thank you. I like sneaking up.” Dragon: “I am the fifth.” Snake: “I am the sixth.”

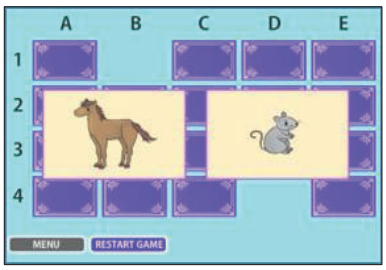
7	Other animals are competing against each other.	Horse, Sheep, Deer, and Turtle are walking together. But they bump against each other again and again. Horse: “I am the seventh.” Sheep: “I’m the eighth.”
8	Rooster and Monkey have a fight; then, Dog tries to settle them down.	Dog and Monkey are fighting. So Rooster steps in between them. Monkey: “I am the ninth.” Rooster: “I am the tenth. Cock-a-doodle-doo.” Dog: “I’m the eleventh. Bow-wow.
9	Wild Boar is the final one.	Sound effect (Wild Boar is running and approaching) Boar: “I ran fast, but I’m the last. I’m the twelfth.” The gate closes. Sound effect (With a creaking bang)
10	God gives the zodiac year for each animal	Now, twelve animals are in place. God: “You are great! Line up, everyone.” “You are the first. I give you the first year, Rat.” “You are the second. I give you the second year, Ox.” “You are the third. I give you the third year, Tiger.” “You are the fourth. I give you the fourth year, Rabbit.” “You are the fifth. I give you the fifth year, Dragon.” “You are the sixth. I give you the sixth year, Snake.” “You are the seventh. I give you the seventh year, Horse.” “You are the eighth. I give you the eighth year, Sheep.” “You are the ninth. I give you the ninth year, Monkey” “You are the tenth. I give you the tenth year, Rooster.” “You are the eleventh. I give you the eleventh year, Dog.” “You are the twelfth. I give you the twelfth year, Boar.” This is the Zodiac.
11	Unfortunately, Cat cannot be on time.	The next day, on January 2nd, Cat knocks on the gate. Sound effect (Knock, Knock) God: “Who are you?” Cat: “I am Cat.” God: “You are too late.”

12	Cat gets angry and runs after Rat	Cat gets very angry with Rat. So a cat always runs after a rat.

Post-activities

<table>
<tr><th>Activities</th><th>Contents</th></tr>
<tr><td>Digital Interactive Game 1: Three Hints Quizzes</td><td>Digital Interactive Game 1: The three hints are given in English sound.
<table>
<tr><th>Hint 1</th><th>Hint 2</th><th>Hint 3</th><th>Answer</th></tr>
<tr><td>I'm gray.</td><td>I'm small.</td><td>I'm the first.</td><td>rat</td></tr>
<tr><td>I'm brown.</td><td>I'm big.</td><td>I'm the second.</td><td>ox</td></tr>
<tr><td>I'm yellow and black.</td><td>I'm strong.</td><td>I'm the third</td><td>tiger</td></tr>
<tr><td>I'm white.</td><td>I have long ears.</td><td>I'm the fourth.</td><td>rabbit</td></tr>
<tr><td>I'm green.</td><td>I'm long and big.</td><td>I'm the fifth.</td><td>dragon</td></tr>
<tr><td>I'm green.</td><td>I'm long.</td><td>I'm the sixth.</td><td>snake</td></tr>
<tr><td>I'm brown.</td><td>I run fast.</td><td>I'm the seventh.</td><td>horse</td></tr>
<tr><td>I'm white.</td><td>I say, "Baa. Baa."</td><td>I'm the eighth.</td><td>sheep</td></tr>
<tr><td>I'm brown.</td><td>I'm clever.</td><td>I'm the ninth.</td><td>monkey</td></tr>
<tr><td>I'm white.</td><td>I say, "Cock-a-doodle-doo."</td><td>I'm the tenth.</td><td>rooster</td></tr>
<tr><td>I'm white.</td><td>I say, "Bow-wow."</td><td>I'm the eleventh.</td><td>dog</td></tr>
<tr><td>I'm brown.</td><td>I'm strong.</td><td>I'm the twelfth.</td><td>boar</td></tr>
</table>
Last sentence is "What am I?" The children raise their hands and say the animal's word. If it is correct, the animal's picture comes up on the screen.
The order of the quizzes can be shuffled around by the teacher.

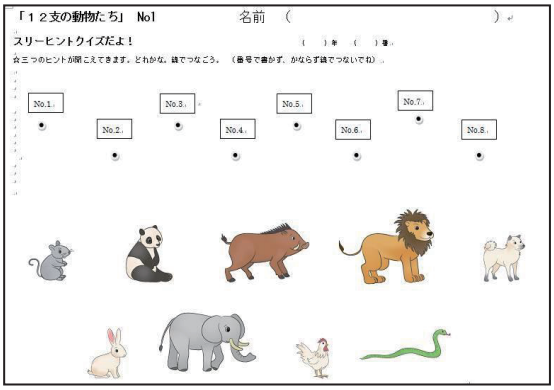
Teacher Talk;
You will hear three hints. Please try to answer the question after each hint. Please answer in English. You can say it in Japanese.
The teacher also uses adjectives such as small, big, long, and strong.</td></tr>
<tr><td>Digital Interactive Game 2: Matching Game</td><td></td></tr>
</table>

	Game: Karuta The teacher gives a set of animal cards to the children. e.g., I'm yellow. I say "Quack. Quack." I'm Duck. I'm small. I say "Meow. Meow." I'm Cat. I'm yellow and brown. I'm tall. I'm Giraffe. I'm black and white. I like bamboo. I'm Panda. Digital Interactive Game 2: Matching Game Twenty picture cards are shown. A child can point out two cards. If both cards are the same, the child wins one point and says the word. 
Digital interactive Game 3: TPR (Verb Phrases with Type Frequency)*	*Digital interactive Game 3: TPR (total physical response)* *Students move their body in chants (verb phrases), and the teacher shows another* *Phrases (e.g., What can you do? I can close the door. (I can close the book.)* *I can give you the ball. (I can give him the notebook.)*
Using Digital Story and Role Play	*Each group chooses a scene of each animal. The children create the role-play when they arrive in the gate and do the gestures.* *God: "You are the first. I give you the first year, Rat."* *Rat: "Thank you God. I say squeak, squeak. I can jump."* 

Note. The Materials were distributed to elementary schools from the Nara Prefectural Board of Education in 2012. They were also adopted as lessons of the authorized texts with permission of the Nara Prefectural Board of Education (Kairyudo, 2018, in press)

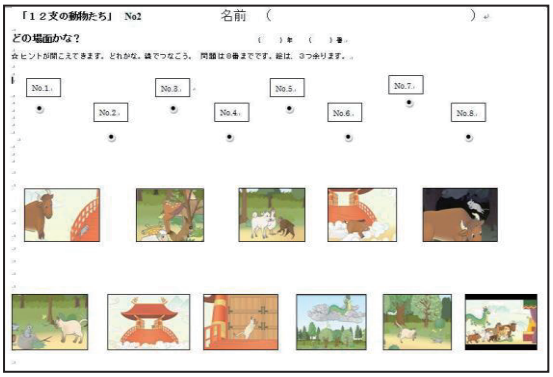
Appendix 9-B

Test Materials of Test 1 (Chapter 9)



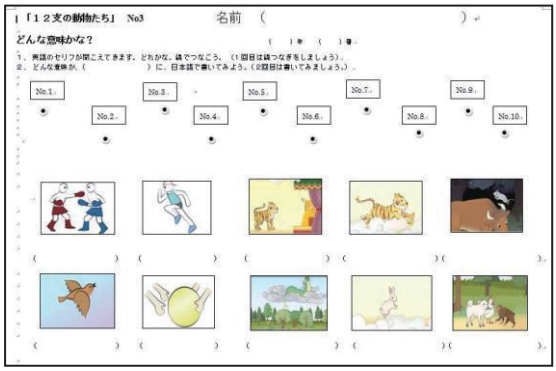
Appendix 9-C

Test Materials of Test 2 (Chapter 9)



Appendix 9-D

Test Materials of Test 3 (Chapter 9)



Appendix 10-A

Scripts of Exemplars in Storytelling (Chapter 10)

New Year's Visit
Page1
Mother: Can anyone answer the phone? I can't answer it now.
Daughter: I'm sorry, I can't. I'm changing my clothes.
Mother: Sam?
Son: Sorry, mom. I'm drying my hair.
Mother: Jim, can you answer the phone?
Father: Sorry, I can't. Aiko. I'm brushing my teeth.
Mother: Oh, no!

Page 2
Son: Mom! It's Grandma. What are you doing?
Mother: I'm putting on my kimono. Take a message, please.
Son: Mom, Grandpa is making *ozoni* for us. It's almost ready.
Mother: Oh, then we can't be late.
Father: No, we can't. Let's hurry.
Daughter: I like his *ozoni*. It's very good.

(Adapted from Kairyudo, 2014)

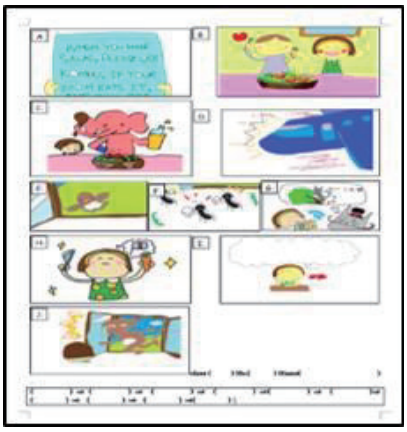
Appendix 10-B
Scripts of Exemplars in Text Book (Chapter 10)

Dialogue 1
Can you help me? / Sorry, I can't. I'm cooking now.
Dialogue 2
Are you studying now? / No, I'm not. I'm listening to music.
Dialogue 3
What are you doing? / I'm watching TV.

Appendix 11-A

Scripts of Story "*Sarada De Genki*" and Pictures of Each Scene (Chapter 11)

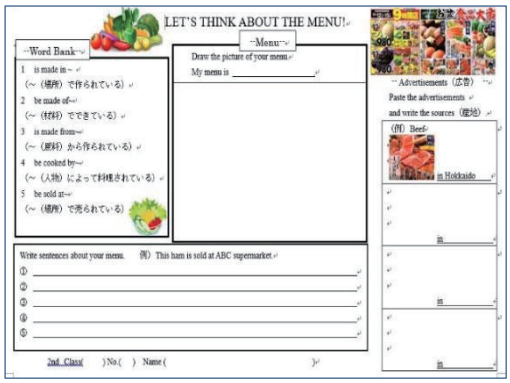
Introduction of the Story
Richan wanted to do something special for her mom. Because her mom had been sick in bed. Richan(R) really wandered.R: "How about rubbing her shoulder・・・or telling her riddles? I want to do something special for Mom. Something that makes Mom well again."
R: "Oh! I've just had an idea! Making salad! Making salad for Mom" She opened the fridge, and looked in. She took some vegetables from it and began to make salad. She cut cucumbers, *ton ton ton*. She cut cabbage. *Shaki shaki shaki.* And she cut tomatoes, *suton ton ton*. She arranged them on a big plate. Then a cat came into the kitchen. He said, Cat: "It is good to put pieces of dried bonito in it. I'm sure that your Mom will get well soon by eating them. And also she will be able to climb trees well. Just like me."
R: "Thank you very much, Mr cat." Richan bought dried bonito from the cat. And she put some pieces of dried bonito on her salad. Then a dog jumped into the kitchen. He said,
Dog: "You should make salad with ham. It is really delicious. Eating it, it will make her cheeks bright. Just like ham."・・・. (The rest is omitted.)



(Illustrated by Lee, 2018)

Appendix 11-B

Worksheet for Creating a Good Menu (Chapter 11)



Appendix 11-C

Test Examples of Filling in the Blanks in the Interactive Dialogues (Chapter 11)

Pre-Test

(1) A: Thank you for the present.

B: You're welcome.

A: Oh, It's a blueberry jam!

B: Do you like it?

A: Yes, blueberry jam (is)(my)favorite.

(2) A: Do you have a chocolate?

B: Yes, here you are.

A: Thanks. Where can I buy the sweet chocolate?

B: You (can)(　buy　) it at Star Market.

(3) A: I'm so hungry.

B: Really? I have some food.

A: Hey, how do you call this food? It looks delicious.

B: We (call　) it *taiyaki*.

(4) A: My family loves *makizushi*.

B: *Makizushi*? What's in it?

A: Egg, mushrooms and *kamaboko*.

B: What's *kamaboko*?

A: We (make) *kamaoboko* with fish.

Post Test

(1) A: Thank you for the present.

B: You're welcome.

A: Oh, It's a blueberry jam!

B: Do you like it? It (　is　)(　made　) in California.

(2) A: Do you have a chocolate?

B: Yes, here you are.

A: Thanks. Where can I buy the colorful cake?

B: It (　is　)(　sold　) at Star market.

(3) A: I'm so hungry.

B: Really? I have some food.

A: Hey, how do you call this food? It looks delicious.

B: It (　is　)(　called　) *okonomiyaki.*

(4) A: My family loves *makizushi.*

B: *Makizushi*? What's in it.

A: Egg, mushrooms and *kamaboko*.

B: What's *kamaboko*?

A: It is (made)(from) fish.

Index

ACT-R	Adaptive Controle of Thought-Rational
ALT	a native assistant language teacher
ATM-V	audio-visual teaching materials of verb phrases
BNC	British National Corpus
CPH	The Critical Period Hypothesis
EFL	English as a second language
EP value	edge of proceedings value
ESL	English as a foreign language
e-wf-level	word familiality level displayed at the elementary school level
FMCs	form meaning connections
FonF	focus on form
FS	formulaic sequences
G value	Guiraud index value
HRT	home room teacher
IDs	Individual differences

JTE	Japanese teacher of English
MWEs	multi word expressions
PPP	presentation-practice-production
S-dictogloss	sound dictogloss
S-GJTs	sound-grammaticality judgement tests
SLA	second language acquisition
TPR	Total Physical Response
TTR	type-token ratio
UBM	Usage-based Model
V-O combinations	verb-object combinations