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Effects of Construction-Grammar-based Instruction on the Sentence Production Ability of Korean College Learners of English

한국 대학생 영어학습자의 영어문장생성능력에 미치는 구문문법 기반 교수의 효과

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외국어교육과 영어전공
나 양 온

Effects of Construction-Grammar-based Instruction on the Sentence Production Ability of Korean College Learners of English

by

Yang On Rah

A Dissertation Submitted to
the Department of Foreign Language Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in English Language Education

At the
Graduate School of Seoul National University

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ABSTRACT

Effects of Construction-Grammar-based Instruction on the Sentence Production Ability of Korean College Learners of English

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The present study explores a grammar instruction which is primarily based on construction grammar. Construction grammar views constructions as the basic linguistic units and posits hierarchical networks among constructions (Goldberg, 1995, 2006, 2013).

The current research investigated whether and to what extent construction grammar-based instruction would assist Korean college learners of English with their language production, especially in written tasks. In addition, it examined to what extent the factor of "network" within the construction grammar framework plays a role in developing sentence production ability.

In order to examine instructional effects, the students were divided into three groups: networked construction group (CNG), construction-only group (COG), and non-constructional group (NCG). All groups participated in three testing sessions and eight instructional sessions, targeting six core ASCs (intransitive-

motion, intransitive-resultative, transitive, ditransitive, caused-motion, and resultative constructions). Their performance was measured using elicited translation tasks, picture description tasks, and guided writing tasks for sentence production ability, together with grammaticality judgment task for the knowledge of ASCs.

Major findings of the study are as follows. First, all the instructional treatments were effective for the learners' improvements in sentence production in the immediate and delayed posttests. However, the construction-based groups showed more significant improvements in their sentence production than the non-constructional group. The construction-based instruction was proved to be durable over four weeks of the posttest period. Notably, as revealed in the results of the grammaticality judgment task in the two posttests, the construction-based groups were seen to obtain constructional knowledge through the construction-based instruction.

Second, there were no network effects on the learners' overall sentence production in the immediate posttest. However, there were significant differences between the network-based group and the non-networked groups, particularly in the double object dative and resultative constructions. In the delayed posttest, in general, the networked-based instruction had lasting effects on the learners' improvement in sentence production.

Lastly, there were salient features in the productivity and accuracy of ASCs. The ratio of *no response* decreased sharply. The construction-based groups tried to produce sentences using the light verb *get* in the test items that were left blank by

the learners in the pretest. The error types such as ‘misordering’, ‘indirect object-omission’, and ‘complement-omission’, which are associated with verb argument structures and their grammatical realizations, decreased significantly in the construction-based groups. In addition, the use of the ‘preposition-omission’ and overgenerated *be* constructions decreased significantly in the construction-based groups.

All in all, the study showed that the construction-grammar-based instruction can help Korean college learners of English improve their sentence production ability, suggesting a more promising alternative to traditional grammar instruction of sentence structures.

Key Words: construction grammar, constructional knowledge, sentence production ability, English argument structure constructions

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CHAPTER 1
INTRODUCTION

The present study aims to investigate the effects of construction grammar based-instruction on the sentence production ability of Korean college learners of English. The first section introduces the problem and the purpose of the study. The second section presents the research questions. The last section provides an outline of the organization of the dissertation.

1.1 Statement of the Problem and Purpose of the Study

In second and foreign language education, the place of grammar instruction (or teaching language *forms*) has been one of longstanding issues since the late seventies. As Communicative Language Teaching (CLT) has been recognized as a well-respected teaching model in second and foreign language education, some researchers have even claimed that grammar instruction is detrimental to learning a foreign language (e.g., Krashen, 1997; Truscott, 1996). In particular, the fact that most Korean learners of English have considerable difficulty in producing even basic sentences in spoken communication has been ascribed to too much focus on grammar instruction.

Nevertheless, it has been widely acknowledged that grammar instruction can be helpful in improving learner proficiency and accuracy, and promoting the internalization of linguistic systems (Ellis, 1996). Grammar instruction has thus continued to be one of the central parts of English language instruction worldwide (Hinkel & Fotos, 2002). Recently, many researchers and educators agreed that what matters is not so much whether to teach grammar as what to teach and how to teach it (e.g., Brown, 2007). The current study attempts to explore the role of grammar in EFL teaching as well as for an effective grammar instruction method in EFL contexts.

Given that the main goal of foreign language learning is to improve communicative competence, the present study underscores the role of *sentence production ability*. Using this ability, language users are able to express propositional meanings. The present study supposes that the ability derives from semantic knowledge of argument structures.

The "Focus on Form" approach (Long, 1991), acknowledged as an effective method for teaching grammatical competence, does not seem to pay much attention to semantic knowledge. This may be due to the fact that language learners have been equipped with the ability to map propositional meanings onto structures in ESL contexts where the learners are provided with plentiful input and meaningful interactions. However, this condition is not met in EFL contexts.

Meanwhile, sentence structures are largely taught by the “Focus on Forms” approach (Long, 1991) in the Korean EFL context. The approach also gives little consideration to semantic properties, mainly focusing on syntactic forms and their corresponding Korean translations. The two approaches (i.e., the Focus on Form approach and the Focus on Forms approach) do not take into account systematic interrelatedness among sentence structures. This may be another source of their limited effects on the learners’ sentence production. For these reasons, form focused instructions may not be the best to improve sentence production ability in the Korean EFL setting.

The present study proposes a grammar instruction method based on construction grammar (Goldberg, 1995, 2006, 2013). The construction grammar views constructions as the basic, conventional linguistic units, and also posits the interrelatedness of those constructions in hierarchical networks (Fillmore, Charles, & Kay, 1993; Goldberg, 1995, 2006, 2013).

Argument structure constructions (ASCs) “provide the means of expressing simple propositions” (Goldberg, Casenhiser, & White, 2007, p. 74). It is assumed that the scenes one experiences in daily life (or the propositional meanings one intends to convey) are closely associated with basic argument structures, the meanings of which are interfaced with those of ASCs. ASCs thus can function as a useful tool for EFL learners to produce sentences.

The current study supposes that the learners' *constructional knowledge* (i.e., the knowledge of ASCs) constitutes the core of semantic knowledge. The knowledge is supposed to provide EFL learners with an encapsulated generative seed for sentence production.

Argument structure constructions are connected to one another by inheritance links in a logical and meaningful way (Goldberg, 1995, 2006, 2013; Langacker, 2008; Littlemore, 2009). There are four types of inheritance relationships within and between ASCs: *polysemy*, *subpart*, *instance*, and *metaphorical links*. The concept of inheritance indicates that there are hierarchies between ASCs. These inheritance hierarchies impose a degree of systematicity on the apparently overwhelming number of ASCs that should be acquired (Littlemore, 2009). If ASCs are presented to learners in hierarchical networks, they may be able to learn ASCs not in a fragmentary way but in an efficient and systematic way. This explains why the present study examines to what extent the factor of "network" can play a role in developing sentence production ability.

Recently, construction grammar has gained considerable attention from many researchers and teachers in second/foreign language learning and teaching (e.g., Gries & Wulff, 2005; Jinhwa Lee & Hyemin Kim, 2011; Hyunwoo Kim, 2013; Rakhun Kim, 2012). L2 research on construction grammar has mainly focused on the ontological status of constructions in L2 learners. There have been several studies on the effects of construction grammar-based instruction on the learning

of individual ASCs. However, little research has been conducted on the instructional effects on overall sentence production ability, especially targeting college English learners. Therefore, this research aims to investigate whether and to what extent construction grammar-based instruction assists Korean college English learners in enhancing sentence production. This study is primarily concerned with the learners' written performance, and they are given explicit instructions on the target structures.

So far, several basic ASCs have been introduced in the field of construction grammar. Grammar instruction targeting ASCs is still in its early stages. It is thus necessary to obtain much empirical evidence on the instructional effects, especially in terms of sentence production ability. Furthermore, ASCs need to be expanded to include various syntactic structures within the construction grammar framework.

1.2 Research Questions

The present study poses the following research questions:

1. Is the construction-grammar-based instruction more effective than non-construction-grammar-based instruction?

2. Does the networked construction-based instruction work better than non-networked construction-based instruction?
3. What are the salient features of Korean college English learners' sentence production influenced by construction-based instruction?

1.3 Organization of the Dissertation

This dissertation is organized into five chapters. Chapter 1 introduces the purpose of the present study with research questions. Chapter 2 provides a review of the literature on grammatical competence, grammar instruction, and theoretical background of construction grammar including English argument structure constructions. Chapter 3 describes the research method, including participants, target structures, instructional treatments, data collection and analyses. Chapter 4 reports the results of the study and discusses central issues, exploring the three research questions. Chapter 5 summarizes major findings of the study and concludes the study with pedagogical implications, limitations, and suggestions for future research.

CHAPTER 2
LITERATURE REVIEW

This chapter presents a review of the literature pertaining to the present study. The chapter begins with a review of the positive role of grammar instruction, along with a consideration of grammatical competence in terms of semantic properties. Construction grammar is presented as the theoretical foundation for the present study, focusing on Goldberg's (1995) English argument structure constructions. In addition, the usage-based model is introduced in terms of the first language acquisition process. The last section concludes the chapter reviewing previous L2 research on English argument structure constructions.

2.1 Grammar Instruction and Grammatical Competence

This section reviews the effects of grammar instruction on the enhancement of grammatical competence primarily in terms of the Focus on Form approach and traditional grammar instruction including their limitations and problems. In addition, grammatical competence is revisited with the main focus on its semantic aspects, suggesting that knowledge of argument structures constitute an important component of grammatical competence in foreign language education.

2.1.1 The place of grammar instruction in CLT

Grammar instruction has been one of the most disputed issues in the practice of second/foreign language education. Grammar, at one time, held an essential role in second/foreign language education (e.g., Grammar-Translation Method, Audio-lingual Method, Silent Way), and thus grammar instruction was central to teaching a foreign language (Rutherford, 1987). However, since many researchers and teachers have been paying much attention to the notion of communication, remarkable changes have occurred in the field of language teaching in ESL/EFL contexts. That is, the focus of language teaching has shifted from the learning of linguistic knowledge to the function of language as a useful means of communication.

Earlier teaching methods placed much emphasis on learners' ability to use language accurately based on the formal approach to language. However, CLT is based on Halliday's (1973) functional approach to language and Hyme's (1972) idea of communicative competence. Ever since CLT has been acknowledged as a dominant teaching method in second and foreign language education, negative attitudes toward grammar instruction have been prevalent in a foreign language. In particular, in the Korean EFL setting, grammar instruction has been considered to cause a considerable number of Korean learners of English to have difficulties in communicating in English.

This issue of the effectiveness of grammar instruction in second/foreign instructional literature was mainly induced by the Natural Approach to second language learning. This approach assumed that grammatical competence could be obtained naturally, provided that sufficient input (Krashen & Terrell, 1983) and meaningful interactions (Long, 1996) are offered to L2 learners. The position leaves little room for grammar instruction. Dulay and Burt (1973, 1974), for instance, claimed that neither grammar instruction nor grammatical explanations are helpful for children's language learning.

On the other hand, with an increasing interest in accuracy in L2 learners' language, researchers and teachers found empirical evidence that naturalistic learning in the classroom does not guarantee adequate levels of grammatical competence (Genesee, 1987). Grammar instruction was argued to serve an important role in helping learners acquire grammatical competence (Norris & Ortega, 2000), especially facilitating the acquisition of certain grammatical structures when they are psychologically ready to learn (Pienemann, 1984). Significantly, Long (1991) proposed the 'Focus on Form' approach[1], a representative, influential teaching method for grammatical competence.

[1] The term *form* received considerable attention in L2 acquisition studies since its introduction in the late 1980s, and now it is almost universally concerned with the reference to grammar-related elements. Form-focused instruction (FFI) is considered to be a cover term used to describe a number of instructional attempts to draw the learners' attention to forms. Ellis (2001) defined FFI as "any planned or incidental instructional activity that is intended to induce language learners to pay attention to linguistic form" (p.1), presenting three broad types of FFI (i.e., focus on forms, planned and incidental focus on form).

According to the approach, it is necessary to draw learners' attention occasionally to specific linguistic features, with the learners' primary focus on meaning when some problems are incidentally perceived in the process of language processing (Long, 1991; Long & Robinson, 1998).

2.1.2 Grammar instruction in the Natural Approach and the Focus on Form Approach

As noted in the preceding section, the question of the efficacy of grammar instruction was raised in naturalistic L2 acquisition research. The Natural Approach posited that learners had their own built-in syllabus for learning grammar (Corder, 1967). Therefore, grammatical competence is acquired naturally in a meaning-oriented context without a conscious consideration of language forms (Hedge, 2000). However, it is less likely that the Natural Approach works successfully in EFL contexts where opportunities for meaningful interactions are scarce. Subsequently, the input and interaction-based approach has limited effects on successful language learning in EFL settings.

Concerning the Focus on Form approach, it has been implemented as part of an effort to enhance grammatical competence within the CLT framework. This approach supposes that any grammatical errors incidentally arising out of communicative activities can be treated by means of reactive process. However,

its effects in EFL contexts may be questioned for two reasons: first, it is primarily concerned with providing a set of discrete linguistic features, with little consideration of interconnectedness, or systematicity among them. The other is concerned with the conditions for the approach to operate; that is, it presupposes the learners' adequate exposure to the target language.

In an attempt to compensate for the deficiency in sufficient input and meaningful interactions in EFL contexts, Educational Grammar Approach proposed that the difficulty "can be overcome by employing linguistic systems of the target language as organizational foundations of foreign language teaching" (Yang, 2010, p. 81). The approach also argued that well-organized input reflecting linguistic systems of the target language may help EFL learners overcome learning difficulties arising from contextual limitations. The issue of well-organized input is related with the choice of linguistic features in organizing teaching content in EFL instructional contexts. With recognition of the usefulness of grammar instruction in EFL contexts, the present study assumes the basic tenets of Educational Grammar Approach.

2.2 Construction Grammar as the Theoretical Framework

The present study posits a new approach to grammar instruction based on *construction grammar* (Goldberg, 1995, 2006, 2013). Construction grammar subscribes to two principal assumptions in relation to the organization of linguistic knowledge: first, constructions are defined as learned correspondence between form and meaning, and they are viewed as the primary units for building linguistic expressions. The other is that constructions are organized into hierarchical networks of interrelated patterns through inheritance (Boas, 2010b, 2013; Fillmore, Charles, & Kay, 1993; Fried & Ostman, 2004; Goldberg, 1995, 2006, 2013). Constructions thus focus on the semantic aspects of structures as well as internal systems among them, reflecting the linguistic system of the target language. Communication is closely related to the way in which speakers express their ideas or intentions in formal strings at utterance-level and the way in which listeners decode the formal strings. Learners thus need to learn how meaning is expressed formally in actual language use. That is, they need to learn the form-function mappings, known as constructions (Goldberg & Casenhiser, 2008). Among the various levels of constructions, the present study focuses on argument structure constructions (ASCs), which are assumed to afford the basic instrument of expressing sentence-level utterances. ASCs are posited to be the

core of grammatical competence in the present study and assist EFL learners in attaining communicative competence.

2.2.1 Generative grammar and construction grammar

There has been considerable disagreement as to what children bring to their language acquisition on the basis of their linguistic experiences (Lieven & Tomasello, 2008). This issue is related to the question of whether children come with an innate biologically endowed language capacity (or a language acquisition device) or with more general cognitive mechanisms. The most representative theory of the biological approach to language acquisition is Chomsky's generative grammar, associated with the symbolic-nativist-linguistic perspective (Hulstijn, 2002a). This theory claims that there are domain-specific universal processes for language acquisition, which allows the effortless mastery of any given language. Specifically, it presupposes an innately endowed Universal Grammar (UG)[2], which is induced by learnability arguments: there is a considerable mismatch between the primary linguistic data (or the input) that the children are exposed to, and their final attainment (or the output). This so-called

[2] UG contains the core principles that generally underlie any human language and the parameters for any permissible variation from language to language (White, 2003).

poverty of the stimulus paradox[3] invoked the employment of UG as an attempt to account for how children come to acquire properties of grammar that go beyond the meager input. These properties, in this approach, do not need to be learned as they are present from the outset.

This perspective contrasts with the non-symbolic psychological theories.[4] These theories consider non-linguistic domain-general processes such as general cognitive principles as the chief driving forces of language acquisition. They posit that grammatical knowledge arises out of the learners' analysis of the statistical properties of the language input (Bates & MacWhinney, 1987; Casenhiser & Goldberg, 2005; Ellis & Ferreira-Junior, 2009; Goldberg, Casenhiser, & White, 2007; Rumelhart & McClelland, 1986; Tomasello, 2003, 2006). This alternative view to the mainstream generative approach has been gaining impetus over the past two decades in the areas of cognitive science, psycholinguistics, and developmental psychology. It has been recently applied to second language acquisition as well as first language acquisition (Dörnyei, 2009). Specifically, this approach supposes that the input is entirely sufficient to enable learners to acquire grammatical properties, provided that the children's general

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[3] It is also known as the *logical problem of language acquisition* or *Plato's problem.*

[4] This term refers to theories representing an alternative perspective to traditional approaches. Within the broad contemporary non-symbolic movement, five specific research directions are represented: (1) *connectionism*; (2) *competition model*; (3-4) *dynamic systems theory* and e*mergentism*, which are two principal versions within *complexity theory*; and (5) *usage-based theories* (Dörnyei, 2009).

learning abilities and mechanisms are applied to the language data. In contrast, traditional generative perspective argues that the complex language representations cannot be acquired inductively by general cognitive mechanisms, thereby calling for the need to assume any innate language-specific knowledge.

Cognitive linguistics has its root in the non-symbolic psychological theories, particularly cognitive science, sharing general features with them. Tomasello (1998) stated that cognitive linguistics is the field of research which is concerned with the understanding, perception, and acquisition of language by human beings. The principal hypotheses of the cognitive linguistic approach to language are as follows: language is not constrained by language-specific module but by general cognitive principles. That is, language is not an autonomous cognitive faculty, detached from non-linguistic cognitive capacities. In addition, linguistic knowledge is “usage-based” in that the linguistic data encountered in everyday speech holds a crucial role for inferences about form-meaning mappings, including typical linguistic patterns. It is noticeable that some key cognitive processes such as comparison, categorization, and pattern-finding operate in language learning and use. Unlike the traditional linguistic perspective, cognitive linguists place an emphasis on the role of meaning in language, especially the meaning of lexical and grammatical items, thereby language is essentially meaningful.

In particular, construction grammar, which is presumed to be a cognitive

linguistic approach to syntax, emanated from a special interest in characterizing idiomatic expressions (or non-core grammar) in the speaker's grammatical knowledge (Croft & Cruse, 2004). It is based on the idea that the theoretical tools that can elucidate exceptional cases can be used to explain regular cases (Goldberg, 1995, 2006, 2013). This interest evoked a reconsideration of syntactic representation, ultimately giving rise to a uniform representation of the speaker's grammatical knowledge. Construction grammar stemmed from a reaction to the diverse versions of the generative grammar model relative to grammatical knowledge. Generative grammar posits that a speaker's linguistic knowledge is organized into distinct *modules* or *components* such as phonological, syntactic and semantic components, and that grammatical structures beyond the word level can be governed by the principle of the generality (Chomsky, 1981). However, construction grammar rejects the componential concept of grammatical organization. Instead, it chooses a unified approach of all facets of language.

Idioms have been considered to cause critical problems for the generality principle in the componential model due to their idiosyncratic properties, thus being treated as a tricky element. Fillmore, Kay and O'Connor (1988) took a strikingly different approach to the problem of idioms. They provided the groundwork for a novel way of grammatical organization by analyzing a wide range of idioms. Based on the analysis and categorization of types of idioms (e.g., the conjunction *let alone*), Fillmore et al. (1988) claimed that speaker's

knowledge of idioms can be aptly represented as constructions since idioms have their own syntactic, semantic and pragmatic attributes that cannot be accounted for via the general rules, and that they can be units of syntactic representations[5] (Croft & Cruse, 2004). Constructions have an analogous status to the lexical items in the sense that constructions are also the mapping of syntactic form and meaning. The only difference between them is that the lexical items are structurally simple and constructions are complex. Thus grammatical knowledge constitutes the *syntax-lexicon continuum*, there being no strict dissociation between the lexicon and syntax (Boas, 2010b, 2013; Croft & Cruse, 2004). This argument reached a hypothesis that the *entire* grammatical knowledge a speaker possesses can be represented in a uniform manner, as shown in Table 2.1.

2.2.2 The central tenets of construction grammar

In cognitive linguistics, the language acquisition process has been regarded as attempts to obtain the pertinent cognitive patterns that encode conventionalized language use. These patterns can be seen to correspond to constructions in construction grammar.

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[5] There are a number of case studies in favor of the need to postulate constructions as a unit of syntactic representation: Lakoff (1987, *There*-construction), Michaelis and Lambrecht (1996, Nominal Extraposition), Jackendoff (1997, 'time'-*away* construction), and Wierzbicka (1980, 1988, *have a* V).

TABLE 2.1

The Syntax-lexicon Continuum

Construction type	Traditional name	Examples
Complex and (mostly) schematic	**Syntax**	[SBJ *be*-TNS VERB – *en by* OBL]
Complex, substantive verb	**Subcategorization frame**	[SBJ *consume* OBJ]
Complex and (mostly) substantive	**Idiom**	[*kick*-TNS *the bucket*]
Complex but bound	**Morphology**	[NOUN-s], [VERB-TNS]
Atomic and schematic	**Syntactic category**	[DEM], [ADJ]
Atomic and substantive	**Word/Lexicon**	[*this*], [*green*]

(from Croft & Cruse, 2004, p. 255)

Constructions are taken to be the basic unit of linguistic knowledge. The concept of construction is defined by Goldberg (1999) as follows:

> C is a CONSTRUCTION iff C is a pairing of form and function such that some aspect of the form or some aspect of the function is not strictly predictable from C's component parts. (p. 199)

This understanding is informed by a cluster of proposals referred to as *constructionist approaches* (Bates & MacWhinney, 1987; Bencini & Goldberg, 2000; Boyd & Goldberg, 2009; Culicover & Jackendoff, 2005; Ellis, 2002, 2013; Ellis & Ferreira-junior, 2009; Fillmore, Kay, & O'Connor, 1988; Goldberg, 1995,

1999, 2003, 2006, 2013; Goldberg, Casenhiser, & Sethuraman, 2004; Lakoff, 1987; Langacker, 1987; Ninio, 2006; Robinson & Ellis, 2008a; Schulze & Penner, 2008; Sethuraman, 2002; Tomasello, 2000a, 2003). The term *constructionist* is concerned with both the role of grammatical constructions and the aspect that languages are learned (Goldberg, 2006). That is, the former emphasizes that constructions are conventionalized correspondences between form and meaning. The latter is associated with language acquisition, emphasizing that linguistic knowledge is "constructed on the basis of the input" (Goldberg, 2006, p. 3) by means of general cognitive mechanisms rather than emerging from universal principles.

The central tenet of these approaches is that constructions[6] as form-meaning parings are assumed to be the primary units of linguistic organization and grammatical analysis (Goldberg, 1995, 2006, 2013; Holme, 2010).

The constructionist approaches are theoretically committed to *symbolic* and *unified* linguistic representations. Like lexicon, constructions are fundamentally symbolic[7] in that they are pairings of particular grammatical forms and the corresponding meanings (or semantic structure); arbitrary due to the fact that forms have no motivated linking to their meanings; conventional in that such

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[6] In formal linguistics, constructions are related to forms that were projected not from an autonomous syntax but from lexical items (Holme, 2010).

[7] In a sense, this symbolic relationship between form and meaning fits well with de Saussure's (1916) notion of a *sign*, which is constituted of *signifier* and *signified*, matching form and meaning, respectively.

mappings of forms to meanings are accepted only in the speech community; and intentional in the sense that they are used with communicative purposes. Concerning the symbolic structure of a construction, form comprises syntactic, morphological, and phonological properties. Meaning represents all the facets relative to any conventionalized functions of a construction: semantic, pragmatic, and discourse properties. Constructions are of varying levels of complexity and abstraction. This entails that constructions can be of concrete and particular items (as in lexical items and idioms), and more abstract types of items (as in word classes and abstract phrasal patterns). That is, there is no principled separation between lexicon and syntax; the entire linguistic forms are represented in a unified fashion.

All constructions in construction grammar are "not merely an unstructured list" (Croft & Cruse, 2004, p. 262). They are organized in a speaker's mind in a specific fashion. That is, constructions comprise a structured inventory of a speaker's linguistic knowledge and are represented by a *taxonomic network* (Croft & Cruse, 2004; Ellis & Larsen-Freeman, 2009; Langacker, 1987). Croft and Cruse (2004) posits that this taxonomic relation represents the link of schematicity or generality between constructions.[8] It also allows for a systematic capture of both the differentiation of diverse sorts of grammatical knowledge and

[8] For example, there are different levels of schematicity between verb phrase and *spill the beans*. That is, [VERB PHRASE]−[VERB OBJ]−[*spill* OBJ]−[*spill* [*the beans*]].

the existence of the syntax-lexicon continuum. The relation shows that constructions can be hierarchically represented since all constructions are an instance of more schematic constructions. This is associated with the issue of how information is stored in the construction taxonomy. The fact that all construction grammar theories attempt to organize grammatical knowledge via taxonomic relations between constructions has significant implications for language learning and teaching.

2.3 English Argument Structure Constructions

As noted above, the constructionist framework maintains that language learning is concerned with the learning of constructions varying in size and complexity. This framework posits that the semantic, pragmatic, and discourse functions are associated with the lexical, morphological, and syntactic forms (e.g., Fillmore, Kay, & O'Connor, 1988; Lakoff, 1987; Langacker, 1999).

Goldberg[9] (1995, 2006, 2013) extended this concept to the level of more

[9] Given the existence of constructions, there have been attempts to address the following questions in the constructionist approaches: (1) the status of syntactic categories, (2) the syntactic relations between elements of a construction, (3) the relations found between constructions, and (4) the way grammatical information is stored in the construction taxonomy. Different answers to those questions gave rise to four different versions of construction grammar theories: Construction Grammar (Kay & Fillmore, 1999), the Construction Grammar of Lakoff (1987) and Goldberg (1995), Cognitive Grammar (Langacker, 1987), and Radical Construction Grammar (Croft, 2001, 2013).

general patterns, such as argument structures. She claimed that even basic sentence patterns of a language can be an instance of constructions, which are "form-meaning correspondences that exist independently of particular verbs" (Goldberg, 1995, p. 1). Among various levels of constructions, most relevant for the present study are sentence-level constructions, which associate verb-argument relations with the syntactic patterns used to express them. Goldberg (1995) claimed that there is "a special subclass of constructions that provides the basic means of clausal expression in a language" (p. 3). They are referred to as *argument structure constructions* (hereafter ASCs). The present study focuses on these ASCs as they are assumed to be basic units for language learners to communicate.

2.3.1 Constructional view on the English argument structures

There has been considerable disagreement among linguists as to the relationship between verb, sentence form, and sentence meaning. According to Bencini and Goldberg (2000), within the traditional perspective on argument structure, verb semantics holds a significant role for determining the overall form and meaning of a sentence. That is, it is the lexical information of a verb that projects its argument structure. For instance, the lexical information for *put* states that it is a three-place predicate requiring three arguments as illustrated in the

sentence: *Chris put the book on the desk*. This perspective is known as the *verb-centered* view (Bencini & Goldberg, 2000; Chomsky, 1986b; Levin, 1993; Pinker, 1989). The argument structure alternations have also been captured by means of lexical rules or transformations. For example, the sentence in (1a) is posited to be derived from (1b) by lexical rules or transformations, making no difference in meaning.

(1) a. He gave him a ball.

b. He gave a ball to him.

However, Bencini and Goldberg (2000) argued that this view is challenged by the following examples, in which the verb *kick* appears in multiple argument structure configurations.

(2) a. Pat kicked the wall.

b. Pat kicked Bob black and blue.

c. Pat kicked the football into the stadium.

d. Pat kicked at the football.

e. Pat kicked her foot against the chair.

f. Pat kicked Bob the football.

g. Horses kick.

h. Pat kicked his way out of the operating room.

(from Bencini & Goldberg, 2000, p. 641)

The fact that the sentences in (2) are different in meaning despite the inclusion of the identical verb makes it hard to assume that the verb is the crucial determinant of the syntax and semantics of sentences.

As an attempt to explain these variations in meaning, it is suggested that a different verb sense for each argument structure pattern be posited, which is referred to as the *multiple-sense* view (Levin & Rappaport Hovav, 1995; Pinker, 1989). On this view, *kick* in (1a) is of a different sense from *kick* in (1b), and each verb sense has different long-term representations which are stored in the lexicon. In sentence production, then, language users are obliged to opt for the pertinent sense from the lexicon coupled with its associated argument structure pattern.

Likewise, *sneeze*, an example of an intransitive verb, can occur in many argument structures, as instantiated below.

(3) a. Pat sneezed. (Intransitive construction)

b. Pat sneezed the foam off the cappuccino.

(Caused-motion construction)

c. She sneezed a terrible sneeze. (Cognate object construction)

d. She sneezed her nose red. (Resultative construction)

e. She sneezed her way to the emergency room. (*Way* construction)

(from Goldberg, 1999, p. 198)

To account for (3b), for instance, the multiple-sense view needs to postulate that *sneeze* has a three argument sense, 'X CAUSES Y to MOVE Z by sneezing' despite the fact that the verb intuitively does not require the direct object complement. This is the same case with (3c) through (3e), in which there is a need to stipulate specific verb senses unique to each construction.

There is an alternative way to account for argument structure alternations and the phenomenon that verbs can appear in various argument structure configurations. It is to assign meaning directly to diverse argument structure patterns, thereby acknowledging the argument structure types as primary linguistic units in their own right. This approach is referred to as the *constructional approach* (Goldberg, 1995, 1999, 2003, 2006, 2013; Jackendoff, 1997; Kay & Fillmore, 1999; Rappaport Hovav & Levin, 1988). It is concerned with non-derivational accounts of argument structure (Culicover & Jackendoff, 2005; Goldberg, 2002, 2013) due to its language analysis based on surface argument structure form. It is in tune with the theoretical position that "a difference in syntactic form always spells a difference in meaning" (Bolinger, 1968, p. 127), which is also known as the "Principle of No synonymy of

Grammatical Forms" (Clark, 1987; Givón, 1985; Wierzbicka, 1988). In this view, as a way of capturing sentence interpretation that is not ascribable to the main verb, it posits that argument structure constructions make direct contribution to the overall meaning of a sentence. For example, in (3c) the lexical meaning of the verb *sneeze* is integrated into the meaning of construction, 'X CAUSES Y to MOVE Z,' resulting in the whole meaning, "She caused the foam to move off the cappuccino by sneezing." What enables the interpretation is the constructional meaning rather than the lexical meaning. This approach was supported by Kaschak and Glenberg's (2000) experiment, in which students demonstrated their reliance on constructional meaning in the case of the denominal verb used in novel ways (e.g., *crutch*).

Constructions at a clause level express the humanly relevant scenes or frames in our daily life, and this characteristic is based on the "Scene Encoding Hypothesis[10]" (Goldberg, 1995) and "Frame Semantics[11]" (Fillmore, 1977a). Languages are supposed to be related to a finite set of possible event types, such as that of "someone causing something, someone experiencing something, something moving, something being in a state, someone possessing something, something causing a change of state or location, something undergoing a change of state or location, someone experiencing something, and something having an

[10] "Scene Encoding Hypothesis" is defined as "constructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience" (p. 39).
[11] "Frame Semantics" presented by Charles Fillmore is defined as "meanings are relativized to scenes" (p. 72).

effect on someone" (Goldberg, 1995, p. 39). Table 2.2 demonstrates examples of English argument structure constructions, which are regarded as an analytical basis in the current study.

2.3.2 A hierarchical network of English ASCs

Construction grammar does not posit a stringent separation between syntax and the lexicon.

TABLE 2.2

English Argument Structure Constructions

Type	Meaning	Abstract form & Example
Intransitive-motion	X MOVES Y	Subj V Obl *The truck rumbles down the street.*
Intransitive-resultative	X BECOMES Y	Subj V Xcomp *He felt happy.*
Transitive	X ACTS ON Y	Subj V Obj *Susan loves him.*
Ditransitive	X CAUSES Y to RECEIVE Z	Subj V Obj1 Obj2 *He faxed him a letter.*
Caused-motion	X CAUSES Y to MOVE Z	Subj V Obj Obl *He sneezed the napkin off the table.*
Resultative	X CAUSES Y to BECOME Z	Subj V Obj Xcomp *She wiped the table clean.*

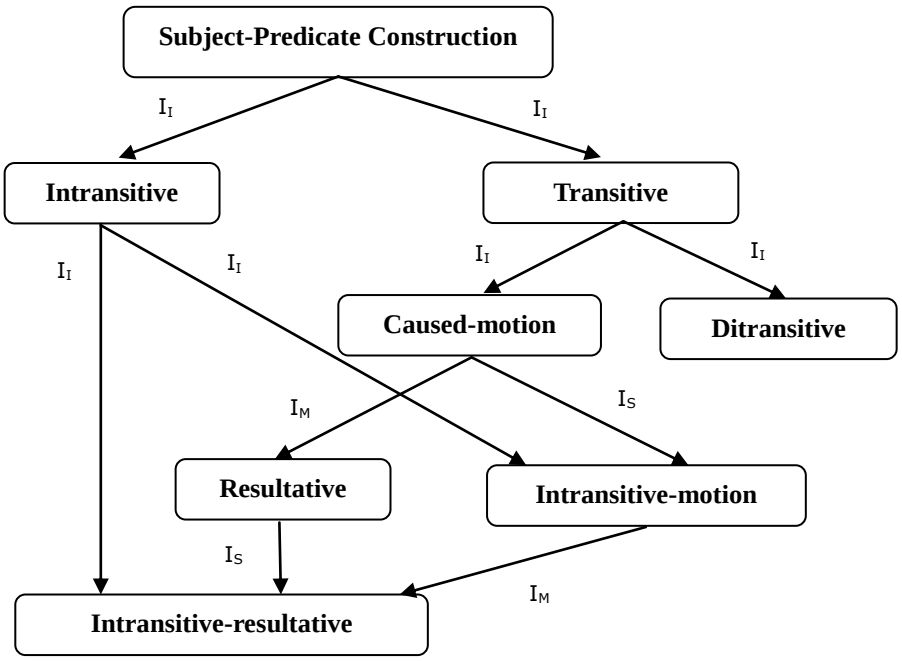
(adapted from Goldberg, 1995)

Instead, the constructionist approach employs taxonomic networks of constructions as a way of capturing grammatical knowledge from the most abstract to the most idiosyncratic patterns (Boas, 2010b, 2013; Booij, 2010, 2013; Fillmore, Kay, & O'Connor, 1988; Goldberg, 1995, 2006, 2013; Hudson, 1990, 2007b; Lakoff, 1987; Langacker, 1987). Like the lexicon, which is considered to contain a fully interconnected network of information, constructions constitute a structured inventory of a speaker's grammatical knowledge and are represented by a hierarchical network based on shared properties.

Goldberg (1995) argued that "the basic clause types of a language form an interrelated network, with semantic structures paired with particular forms in as general a way as possible" (p. 5). That is, ASCs are connected to one another by inheritance links[12] in a logical and meaningful way (Littlemore, 2009). The concept of inheritance suggests that there are hierarchies between ASCs. Through the hierarchical relation, low levels inherit all shared information from higher levels. This inheritance network makes it possible to capture generalizations across ASCs, including subregularities and exceptions (Goldberg, 1995, 2006, 2013). Thus, information relative to ASCs is stored economically and is sensitive to some modifications. This has crucial implications for second

[12] The concept of inheritance has been found to be useful in a variety of areas such as programming and knowledge representation systems since it was first used in computer science as a way of capturing generalizations. The construction-based framework adopted the notion of inheritance hierarchies, which were employed to represent such non-linguistic generalizations, in order to capture linguistic generalizations in a given language (Goldberg, 1995, 2003; Hudson, 1990; Lakoff, 1987; Pollard & Sag, 1994).

and foreign language learning and teaching. Learners may be able to learn ASCs not in a fragmentary way but in an efficient and systematic way if ASCs are offered to them in the form of a hierarchical network. This approach may enable learners to use their existing constructional knowledge to incorporate new constructions, lessening their cognitive load during the course of language acquisition (Broccias, 2008; Goldberg, 1995, 2006, 2013).



(adapted from Goldberg, 1995, p. 109)

FIGURE 2.1

A Hierarchical Network of English ASCs

Goldberg (1995) presented hierarchical networks among English ASCs including four types of inheritance links[13], as represented in Figure 2.1. Within this network, each of the ASCs has internal structure and constitutes a node. The inheritance relations depict a relationship of schematicity or generality between ASCs. These ASCs are independent but related in terms of generality. All ASCs, which carry inherent information of their own, are related to each other in a super- and sub-node fashion. A super-node of a construction has more general information than a sub-node, sharing relevant information with its sub-node. All shared information is inherited from higher nodes transitively as long as the information is not in conflict with that of lower nodes in the inheritance hierarchy (Goldberg, 1995, 2006, 2013). For instance, a transitive construction is more general than caused-motion and ditransitive constructions in terms of grammatical and semantic properties. They all share relevant information in a systematic way.

Goldberg (1995) proposes four types of inheritance relationships (or inheritance links) within and between ASCs: *polysemy links*, *subpart links*, *instance links*, and *metaphorical links*.

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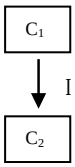
[13] According to Goldberg (1995), regarding the notation of an inheritance relation between two constructions $C_1$and C_2, the fact that C_2 inherits from C_1 is represented in the following ways:



C_2 inherits from C_1 or C_1 dominates C_2 or C_1 motivates C_2

I = inheritance link

Firstly, *polysemy (I_P) links*[14], within a particular construction, are posited to capture the semantic relations between a prototypical sense of a construction and any extensions from this sense. It is useful to describe constructions that are identical in syntactic information but different in meaning. For instance, the ditransitive construction is associated with a range of semantic variations, all of which share the central meaning of 'X CAUSES Y to RECEIVE Z,' as shown in the following examples:

(4) a. 'X CAUSES Y to RECEIVE Z' (central sense)

Example: Joe gave Sally the ball.

b. Conditions of satisfaction imply 'X CAUSES Y to RECEIVE Z'

Example: Joe promised Bob a car.

c. 'X ENABLES Y to RECEIVE Z'

Example: Joe permitted Chris an apple.

d. 'X CAUSES Y not to RECEIVE Z'

Example: Joe refused Bob a cookie.

e. 'X INTENDS to CAUSE Y to RECEIVE Z'

Example: Joe baked Bob a cake.

[14] Croft and Cruse (2004) argued that this link in construction taxonomies is very similar to the central properties of conceptual categories; that is, *polysemy* and *prototype-extension* structure.

f. ‘X ACTS to CAUSE Y to RECEIVE Z at some future point in time’

Example: Joe bequeathed Bob a fortune.

(Goldberg, 1995, p. 75)

This similar pattern of polysemy is also found in the caused-motion construction, as illustrated in (5).

(5) a. ‘X CAUSES Y to MOVE Z’ (central sense)

Example: Pat pushed the piano into the room.

b. Conditions of satisfaction imply ‘X CAUSES Y to MOVE Z’

Example: Pat ordered him into the room.

c. ‘X ENABLES Y to MOVE Z’

Example: Pat allowed Chris into the room.

d. ‘X CAUSES Y not to MOVE FROM Z’

Example: Pat locked Chris into the room.

e. ‘X HELPS Y to MOVE Z’

Example: Pat assisted Chris into the room.

(Goldberg, 1995, p. 76)

In both cases, the first sense (4a and 5a) is regarded as the central, prototypical sense and the other senses as extensions from the central sense.

Despite the fact that the extensions (b, c, and d) of the two constructions involve different verbs, the relations between the prototypical sense and the extensions are identical; that is, *enablement*, *hindrance*, and *assistance*. This link entails that the extensions inherit the syntactic specification from the prototype. Thus like individual lexical items, ASCs are polysemous. Seen from the view that lexical items are also regarded as constructions, the only difference between them is merely associated with degree of complexity of the structures.

Secondly, one of the principal ways in which ASCs are connected to one another is by means of *subpart (I_S) links*. These links are posited to describe the relation of one ASC being a subpart of another ASC, maintaining its autonomous status. For example, the intransitive-motion construction is associated with the caused-motion construction via a subpart link.

(6) a. Pat sneezed the napkin off the table. [SVOL[15]]

b. The napkin fell off the table. [SVL]

(adapted from Goldberg, 1995)

(6a) is an instance of the caused-motion construction, with the meaning of 'X CAUSES Y to MOVE Z,' whereas (6b) is an instance of the intransitive-motion

[15] Here, L stands for Oblique, which refers to a directional phrase. It corresponds to the traditional term 'prepositional phrase (PP)'.

construction, ‘X MOVES Z’. The syntactic and semantic stipulations of the intransitive-motion construction are a subpart of those of the caused-motion construction. That is, the semantic roles of (6a)－a THEME (the napkin) and a GOAL (the table)－are repeated in (6b) and the syntactic elements of (6a)－OBJ (the napkin) and OBL(the table)－are also represented by SUB and OBL in (6b). This link is also well captured in the relation between the resultative and intransitive-resultative constructions. For example, if the following two constructions (7a) and (7b) are compared:

(7) a. Tom makes Jane happy. [SVOC]

b. Jane is happy. [SVC]

While (7a) is an instance of the resultative construction, (7b) is an instance of the intransitive-resultative construction. The semantic roles of (7a)－a THEME (Jane) and a GOAL (happy)－are repeated in (7b), and the syntactic elements of (7a)－OBJ (Jane) and COMP(happy)－are also represented by SUB and COMP in (7b).

The third way in which ASCs are related is through *instance (I_I) links*. These are posited when one construction is a special case of another construction. The most well-known type of this link is that of partially lexically filled idioms. For

example, the verb *drive* as in the sentence ‘James drove her crazy’ has a special sense which is only present in the resultative construction. That is, the resultative construction which involves the verb *drive* takes on an idiomatic meaning of ‘making somebody crazy’. These links also account for the relation between intransitive and intransitive-motion or intransitive-resultative constructions, and between transitive and caused-motion or ditransitive constructions, as shown in Figure 2.1, in the sense that one construction (intransitive or transitive) is a more fully specified type of the other.

Fourthly, ASCs can be related by *metaphorical extension (I_M) links*. These links are posited when two constructions are linked by a metaphorical mapping. They are designed to make explicit the way of linking the semantics of the dominating constructions to that of the dominated ones. For instance, the resultative construction, exemplified in (8a), is considered to be a metaphorical extension of the caused-motion construction, exemplified in (8b) based on the metaphor that a change of location can be understood as a change of state.

(8) a. Pat hammered the metal flat.

b. Pat threw the metal off the table.

(from Goldberg, 1995, p. 81)

In (8a), the adjective *flat* is a result-goal, which is analogous to a physical goal (the table) in (8b). Notably, Goldberg (1995) argued that although the two constructions are linked by a metaphorical extension link, they are separate constructions with specific constraints on the occurrence of the relevant verb.

The prepositional dative (PD) construction can also be represented by a metaphorical extension of the caused-motion construction. The PD construction is argued to have the meaning of 'transfer of ownership' irrespective of the kinds of transfer (i.e., physical or metaphoric) (Jackendoff, 1972). Goldberg (1995) argued that the metaphor of *transfer of ownership as physical transfer* can motivate the PD construction from the caused-motion construction.

(9) a. Joe kicked the bottle into the yard. (caused-motion construction)

b. Joe gave his house to the Moonies. (prepositional dative construction)

(from Goldberg, 1995, p. 90)

(9a) has the same syntactic and semantic properties as (9b) in that both of them have the structure of "SVOPP," sharing the meaning of "causing the theme to move to a place or a person." (9b) can be motivated from (9a) by means of a metaphorical link. It is noteworthy that these types of metaphorical links can be very helpful for language learners to learn ASCs as those links are assumed to alleviate 'data overload' in language acquisition (Broccias, 2008).

2.3.3 ASCs and their applicability in EFL contexts

In section 2.1.3, it was argued that in EFL contexts the most urgent issue was to help learners to gain the ability to produce basic sentence structures. This sentence production ability may strongly correlate with the knowledge of argument structure. Thus the present study proposes that the knowledge of argument structure should assume a more prominent status in grammatical competence in foreign language education.

Construction grammars posit that an argument structure construction is the direct association of underlying verb-argument relations with the syntactic patterns used to express them. The current study thus assumes that semantic knowledge needs to be elaborated in terms of a construction grammar approach, based on the assumption that sentence production ability can be acquired by learning ASCs (Goldberg, 1995, 2006, 2013). The scenes one experiences in daily life are closely connected with basic argument structures, the meanings of which are linked to those of ASCs. Thus, EFL learners would be able to map the scenes or propositional meanings onto the relevant sentence structures more effectively by the construction-driven processing. The present study supposes that ASCs should be a basis for teaching content since they involve semantic properties, or argument structures.

Littlemore (2009) stated that the inheritance hierarchies among ASCs impose

a degree of systematicity on the apparently overwhelming number of ASCs that should be acquired. This systematicity reflects the linguistic realities of the target language with regard to the organization of linguistic knowledge. In this regard, the systematicity has important implications for the organization of grammar in terms of teaching sequence in EFL contexts. The hierarchical networks are organized in a way that complex ASCs are built on simple ones. Simple ASCs such as intransitive-motion, intransitive-resultative, and transitive constructions are assumed to be more readily accessible than more complex ones such as caused-motion, ditransitive, and resultative constructions. ASCs thus have to be taught beginning with the easy and core ones moving to the more difficult and peripheral ones. If EFL learners should be provided with ASCs according to the network, with a small number of ASCs, they are more likely to comprehend ones they have never heard and generate them in a productive way.

The acquisition of ASCs enables EFL learners to gain access to an important component of grammatical competence. That is, the acquisition of ASCs can be a core part of sentence production ability. This construction grammar-based approach is expected to overcome the problem of input deficiency and the limitations of the Focus on Form approach in EFL contexts.

2.4 First Language Acquisition Process in the Usage-based Model

Usage-based (or item-/exemplar-based) theories are becoming widespread in almost all areas of linguistics, contributing to a range of research domains such as phonetics, phonology, morphology, semantics, and syntax (Dörnyei, 2009). In particular, many cognitive linguists proposed a usage-based model for language acquisition and language development (Barlow & Kemmer, 2000; Bybee, 2006, 2013; Bybee & Hopper, 2001; Goldberg, 2006, 2013; Langacker, 1987, 1988; Tomasello, 2003). In a usage-based model, grammatical structures result from an emergent process. Thus the *use* of utterances in communication functions as another key determinant in a speaker's grammatical representation. In particular, usage-based model gives a special significance to the distributional frequency of the language input, thus focusing on a *probabilistic* aspect of language learning and processing, which is closely associated with concrete linguistic experiences.

2.4.1 Child language acquisition in the usage-based model

Recently, research in child language learning has provided ample evidence that children's linguistic knowledge is remarkably different from the type of

grammatical competence that had been proposed by generative grammar (Croft & Cruse, 2004). Looking at how the child acquires language can thus be helpful in gaining a better understanding of the core principles of usage-based approaches. Based on recent empirical investigations of child language learning, Tomasello (2000a) maintained that children's early linguistic competence is mostly item-based, centering on concrete and particular words and phrases. He also argued that abstract categories emerge merely "gradually and in piecemeal fashion during the preschool years (p.156)." This claim was supported by Bybee and Hopper's (2001) corpus-based studies. They revealed that the child's language data showed radically different aspects from the existing grammatical accounts based on imaginary data in terms of child language acquisition. One of the key tenets of the usage-based approach is that children's language development begins with the acquisition of concrete linguistic items from the language input children hear around them during the interactions with their caregivers. It follows that language competence is based on a structured inventory of *learnt* constructions (Croft & Cruse, 2004).

Tomasello (2003) claimed that all constructions are acquired through two basic sets of acquisitional mechanisms: *intention-reading* and *pattern-finding*. The two processes provide the basis for the pairing of meaning with form, resulting in early language learning (Lieven & Tomasello, 2008). The intention-reading process involves joint attention, understanding communicative intentions,

and cultural learning (Bakeman & Adamson, 1984; Bates, 1979; Corkum & Moore, 1995; Tomasello, 1998; Tomasello, Kruger, & Ratner, 1993). Learners attempt to associate particular syntactic patterns with particular meanings in the process of predicting the communicative intent of utterances in a given context by means of the intention-reading process. This process relative to communicative function thus holds an important role for the appropriate use of language in communication.

Tomasello (2003) argued that there are specific processes that are central to language acquisition. All constructions are first acquired by means of *imitative learning*, which is characteristic of children's meaningful and functionally suitable repetition of adult language. Children then try to *find patterns* over the individually learnt item-based constructions, using general cognitive skills such as categorization, schematization, and analogy (Conway & Christiansen, 2001; Gentner & Markman, 1997; Gomez & Gerken, 1999; Rakison & Oakes, 2003). Children ultimately attain the level of *combining* a variety of constructions creatively. Pattern-finding process, among these processes, has received much attention in the usage-based model. This is associated with the way in which children induce abstract regularities based on concrete instances of constructions in communicative situations. In the usage-based model, the frequency distribution in the input contributes to the emergence of constructions, giving rise to probabilistic accounts of learning (Dörnyei, 2009). Specifically, the pattern-

finding skill needed for the abstraction of the regularities from a set of memorized constructions is frequency-biased.

2.4.2 Input frequency effects in the usage-based model

The acquisition of constructions in the usage-based theory is posited to be fundamentally input-driven (Bybee, 2011, 2013; Gibbs, 1996; Goldberg, Casenhiser, & Sethuraman, 2004; Langacker, 2008; Littlemore, 2009; Robinson & Ellis, 2008a; Tomasello, 2003, 2006) and be contingent on the learner's actual experiences of form-meaning-function mappings during meaningful interactions (Goldberg & Suttle, 2010; Robinson & Ellison, 2008a). In particular, language input enables learners to induce the association of meaning with certain argument structure patterns, together with general cognitive principles such as categorization principles (Goldberg et al., 2004). Thus, learners need to be exposed to a range of usage events[16] sufficiently to progressively build up complex and abstract constructions.

Given the importance of input in language learning, input frequency is assumed to be of special significance as learners acquire language from repetition with variation in the individual linguistic instances (Casenhiser & Goldberg, 2005; Ellis, 2002, 2013). Input frequency plays a central role in

[16] This refers to particular utterances in particular contexts (Lieven & Tomasello, 2008).

language processing and acquisition (Bybee, 2001, 2013; Croft, 2001, 2013; Ellis, 2002, 2013; Ellis & Collins, 2009; Langacker, 2008). Much research on children's speech revealed the effects of input frequency on language acquisition (e.g., Naigle & Hoff-Ginsberg, 1998; Theakston, Lieven, Pine, & Rowland, 2001; Wilson, 2003). Lieven and Tomasello (2008) stated that "the more frequently children hear a particular morpheme, word, or construction, the earlier they acquire it" (p. 172). There are two central categories regarding input frequency, namely *type* and *token* frequencies. The former refers to the frequency with which different forms take place in the identical slot in a text. Many studies on child language suggest that varying the type frequency of items in a construction fosters the generalization or abstraction of the construction (Boyd & Goldberg, 2009; Braine, 1987; Bybee, 2013; Matthewsa, Lieven, Theakston, & Tomasello, 2004; Tomasello, 2000a; Wittek & Tomasello, 2005). The latter refers to the overall distribution of particular linguistic items in a text. This token frequency is assumed to invoke the emergence of a range of constructions and their regularization in the process of language acquisition (Bybee & Hopper, 2001). It is assumed that there are differences between the effectiveness of type and token frequencies on language developmental stages. That is, in the initial stage, low-type but high-token frequency is beneficial to learners' grasp of lexical frames and their spontaneous production (Casenhiser & Goldberg, 2005; Ellis & Collins, 2009; Goldberg et al., 2004). High type frequency, after the initial stage, is more

likely to afford learners chances of abstracting patterns due to its information about how many separate items can occur in the slots in the representations (Collins, Trofimovich, White, Cardoso, & Horst, 2009; McDonough & Kim, 2009).

2.4.3 Language development in the usage-based model

In usage-based theory, children store the mappings of meanings with argument structure patterns on two levels (Goldberg et al., 2004; Lieven & Tomasello, 2008). The first is concerned with the acquisition of verb-centered categories, which means that children produce syntactic patterns in a conservative manner on a verb-by-verb basis (Akhtar & Tomasello, 1997; Baker, 1979; Bates & MacWhinney, 1987; Bowerman, 1982; Braine, 1976; Brooks & Tomasello, 1999; Gropen, Pinker, Hollander, Goldberg, & Wilson, 1989; Ingram & Thompson, 1996; Lieven, Pine, & Baldwin, 1997; MacWhinney, 1982; Olguin & Tomasello, 1993; Schlesinger, 1982; Tomasello, 1992). The other is learners' attainment of generalizations over specific verbs, establishing argument structure patterns in a speaker's grammatical representation (Akhtar, 1999; Bowerman, 1982; Brooks & Tomasello, 1999; Pinker, 1989).

Hence, the question arises as to how language development proceeds from specific knowledge of individual verb usage to knowledge of more general

patterns via general inductive strategies. As children's grammar progresses, they build up their inventory by including increasingly complex and abstract constructions together with relationships between them (Dabrowksa, 2004). In particular, regarding the argument structure patterns, children build up three types of representations: *lexically-specific construction*, *constructions with low-scope slots* (*low-scope patterns*), and *fully schematic constructions* (Lieven & Tomasello, 2008). In the initial stage, children produce lexically-specific constructions, known as *formula* or *exemplar*, depending on their caregiver's speech. Their reliance on these memorized bits and pieces of formula (e.g., *I put the book on the table*.) is considered to be motivated by communicative intent to enhance learning (Tomasello, 1992).

Moreover, recent psycholinguistic evidence endorses the perspective that as learners are exposed to lexically-specific constructions repeatedly, they step into the next stage where they can formulate particular low-scope patterns with slots into which they can insert new items (Cameron-Faulkner, Lieven, & Tomasello, 2003; Farrar, 1990, 1992; MacWhinney, 1982; Redington, Chater, & Finch, 1998; Theakston, Lieven, Pine, & Rowland, 2001; Tomasello, 2000a, 2003). Such low-scope patterns have a tendency to revolve around a single high frequency lexical item that is prototypical of the construction, referred to as an *island* (Tomasello, 2003). For example, concerning the argument structure patterns, viewed as the target structures in this study, Tomasello (1992), based on

the children's verb-centered conservatism, advanced the *verb island hypothesis* in which children learn verb-argument patterns on a verb-by-verb basis (e.g., <agent> *put* <theme> <location>) (Akhtar & Tomasello, 1997; Alishahi & Stevenson, 2008; Clark, 1996; Goldberg et al., 2004; Gropen et al., 1989; Tomasello, 1992). These low-scope patterns ultimately lead learners to establish a conceptualization of fully abstract, schematic constructions, argument structure constructions for this study (e.g., *put*: a caused-motion construction). In short, there is a developmental sequence from formula, through low-scope pattern, to abstract construction in the first language acquisition.

There is another important issue to consider in relation to the language development within the usage-based model. This is concerned with the role of particles, particularly in the acquisition of the English ASCs. Tomasello (1992) reported that verb particles such as *up*, *down*, *on*, *off*, *in*, *out*, *over*, and *under* were used as early as around16 through 18 months of age based on findings from a child's language analysis in L1 acquisition. He argued that these particles were first characterized by verb-like functioning at a single-word stage and then were combined with other words such as nouns positioned before or after them (e.g., *Light on* or *Off TV*). Such usage as the relational words was later demoted to their original status of verb particle at around 23 months, when true verbs were used (e.g., *Turn the light off*).

This developmental aspect of particles seems to show that they take on a more noticeable status in the initial stage of language development. Furthermore, it has an important implication for grammar teaching in EFL contexts. That is, particles need to be effectively highlighted in the instruction of argument structure constructions which are closely related with particles (e.g., intransitive-motion, caused-motion, and resultative constructions). Thus the current study proposes that the significance of particles be considered fully in the organization of grammatical teaching materials.

2.4.4 Role of light verbs in English ASCs acquisition

Many researchers argue that verbs play an essential role in the emergence of abstract argument structure meaning (Akhtar, 1999; Akhtar & Tomasello, 1997; Bates & MacWhinney, 1987; Pinker, 1989; Tomasello, 1992). Verbs that are closely related in meaning tend to take place in the same ASCs (Fisher, Gleitman, & Gleitman, 1991; Goldberg, 1995; Levin, 1993; Pinker, 1989). Pinker (1989) claimed that the schematic meanings of argument structure patterns are inherited from the conspiracy of the particular types of verbs that occur in their verb island, suggesting *semantic bootstrapping* accounts. Notably, there are some verb types that are very specific in the ASCs which they can occur in. The vast majority of their tokens appear in simply one argument structure construction, serving as

considerably reliable and special cues to it (Ellis & Larsen-Freeman, 2009). Goldberg (1999) argued that the meanings of highly frequent *light verbs* are central to the constructional meaning. Light verbs refer to the verbs that have very general meanings (e.g., *go*, *do*, *make*, *give*, and *put*), which are also known as *basic verbs*, *common verbs*, *high frequency verbs*, and *general purpose-verbs*. These light verbs, which are semantically light, are closely associated with the meanings of argument structure constructions, as demonstrated in Table 2.3.

TABLE 2.3

Light Verbs and Corresponding English ASCs

Verb	Constructional Meaning	ASCs
go	X MOVES Y	Intransitive-motion
do	X ACTS ON Y	Transitive construction
make	X CAUSES Y to BECOME Z	Resultative construction
give	X CAUSES Y to RECEIVE Z	Ditransitive construction
put	X CAUSES Y to MOVE Z	Caused-motion construction

(adapted from Goldberg, 1999)

Clark (1978) pointed out that these light verbs are the first verbs to emerge cross-linguistically, and that they are the most frequent verbs in children's early English. These high frequencies are assumed to have to do with the input they received from their caregivers (Goldberg, 1999). Goldberg et al. (2004) revealed that high frequency in the input has a direct effect on children's speech based on the analyses of a corpus of mother talk and children's speech. They showed that

there is a very close relation between the meaning of the most frequent verb in an argument structure construction and that of the construction. This intimate relation between them ultimately leads to the direct mapping of the meaning of the light verb with the construction, generating the constructional meaning (Goldberg, 1999). Likewise, Ninio (1999) noted that children often utilize *pathbreaking* verbs (e.g., *want*, *do*, *make*, *put*, *take*, *give*, and *get*) in an argument structure pattern long before they use other verbs in the pattern. This skewedness in the input is assumed to allow children easy access to initial syntactic generalizations and thereby facilitate children's learning of a novel argument structure construction (Casenhiser & Goldberg, 2005; Goldberg et al., 2004).

Slobin (1997) argued that high frequency holds a crucial role for children's automaticity and accessibility, resulting in ease of comprehension and production. In addition, high frequency is strongly related to shorter forms (Zipf, 1935). High frequency verbs are typically of shorter forms and make it easier for children to learn and use them in the initial stage of language acquisition (Goldberg, 1999). It should be noted that high frequencies of the light verbs strongly correlate with their general meanings as lexical items with more general meanings are more likely to be applied to a range of situations (Bybee, 1985; Bybee, Perkins, & Pagliuca, 1994). Light verbs also encode meanings that are basic to human experience such as motion, action, causation, transfer, and so forth. According to Viberg (2002), light verbs, in the initial stage of language acquisition, are

frequently used for more specific verbs, due to their merits of easy accessibility and less processing load, offering novice learners useful tools for communication. Thus, given the importance of the light verbs in child acquisition of ASCs, the present study involved those light verbs at the instructional phase, expecting their facilitative role in the internalization of ASCs. In particular, the light verb *get* is considered to be the most effective one in the acquisition of ASC as they can occur in almost all ASCs. Furthermore, in production, the verb *get* can act as a strong strategic tool due to its easy accessibility. Accordingly, in the present study, *get* was given to all students in the instruction of ASCs, and it was expected that they would be able to produce ASCs with relative ease by using the verb.

2.4.5 Role of pronouns in English ASCs acquisition

Pronouns constitute one of the most common syntactic elements (e.g., subject and object) in caregivers' speech to children (Chafe, 1994). High frequencies of the pronouns in the input allow early children to notice and use them very easily (Dodson & Tomasello, 1998; Lieven et al, 1997). In addition, psycholinguistic research on pronouns revealed that frequency property of pronouns play a critical role in priming a construction (e.g., transitive construction) (Savage, Lieven, Theakston, & Tomasello, 2003). Importantly, pronouns present learners with

morphological and syntactic information in terms of case forms and word order. The case-marked pronouns serve as a pivot for the acquisition of the transitive construction, which is an underlying construction for other complex constructions such as caused-motion, ditransitive, and resultative constructions. Pronouns also provide semantic and pragmatic information such as gender and number for the former and information structure for the latter, respectively. Notably, with regard to syntax-phonology interface, since pronouns are unstressed and less salient elements in utterances, they form a phonological unit with other elements around them. This property of pronouns is known as *prosodic bootstrapping* (Gleitman & Wanner, 1982; Morgan, 1986; Soderstrom, Seidl, Kelmer Nelson, & Jusczyk, 2003). In the transitive construction including more complex constructions, a verb and its object pronouns can be a phonological unit. The present study supposes that the prosodic cue is expected to strengthen the connection between a predicate and its arguments, leading to ease of learning and use of ASCs.

2.5 Previous L2 Research on English ASCs

Construction grammar has received much attention from researchers and teachers in second/foreign language learning and teaching (Chang & Maia, 2001; Ellis & Ferreira-Junior, 2009; Gries & Wulff, 2005; Holme, 2010; Haerim

Hwang, 2013; Hyunwoo Kim, 2013; Rakhun Kim, 2012; Jinhwa Lee & Hyemin Kim, 2011; Liang, 2002; Martínez Vázquez, 2004; Gyuho Shin, 2009, 2010, 2012; Minchang Sung, 2012; Valenzuela & Rojo, 2008; Year & Gordon, 2009). Many studies on the acquisition of constructions were conducted, largely focusing on the ontological status of constructions in L2 learners (e. g., Gries & Wulff, 2005; Jinhwa Lee & Hyemin Kim, 2011; Liang, 2002; Martínez Vázquez, 2004; Gyuho Shin, 2009, 2010) and the possibility of the L2 learners' acquisition of specific ASCs (e. g., Hyunwoo Kim, 2013; Rakhun Kim, 2012; Gyuho Shin, 2012; Minchang Sung, 2012; Year & Gordon, 2009). In particular, Ellis and Ferreira-Junior (2009) investigated the effects of high-frequency verbs on the acquisition of three ASCs: intransitive-motion, caused-motion and ditransitive constructions. Based on the longitudinal data of L2 English input and output, they found that semantically generic and prototypical verbs occur in each of the ASCs with high frequency.

Shin (2010) explored the possibility of Korean EFL learners attending to constructional meanings in English sentence processing by replicating the sorting task that had been conducted by Bencini and Goldberg (2000). He argued that the learners were able to partially recognize and use the ASCs in sentence interpretation. Lee and Kim (2011) investigated a developmental sequence of a variety of ASCs for Korean EFL learners (three groups with different proficiency levels) using a translation task (English into Korean). Based on the findings, they

presented a developmental sequence of English ASCs together with factors affecting the sequence.

There are a few studies on the learning of individual English argument structure constructions by EFL learners (Holme, 2010; Hyunwoo Kim, 2013; Rakhun Kim, 2012; Gyuho Shin, 2012; Minchang Sung, 2012; Year & Gordon, 2009). For example, Year and Gordon (2009) investigated the learning of the English ditransitive construction, focusing on the facilitative input effects of verb frequency and distribution by using input-driven learning. Holme (2010) suggested a method of conceptualizing the ASCs through instructional treatments in his experiment for college learners. He showed that EFL learners were able to generalize the constructional meanings with the aid of a common sense or imagery for the constructions. Shin (2012) explored the frequency-based instructional effects of ASCs and basic verbs on Korean middle school learners of English by means of a grammaticality preference task and several free writing tasks. Based on the writing data, he undertook a qualitative analysis, demonstrating relative accessibility among the constructional representations together with item-based piecemeal learning of the target language system. Kim (2013) investigated the effects of construction-based instruction on the learning of the English ditransitive construction by Korean high school EFL learners, using a grammaticality judgment task and a picture description task. The

findings indicated the possibility of the learning of the target construction, with special regard to structural knowledge and production abilities.

Notably, there is a study on the development of oral proficiency in EFL context using construction grammar. Kim (2012) investigated the effects of construction grammar-based instruction on the development of oral fluency and accuracy by Korean high school EFL learners. In the experiment, the control group received form-based traditional grammar instruction, whereas the experimental group was given construction grammar-based instruction. Findings from the study indicated that construction grammar can be a highly plausible method of improving the oral proficiency of EFL learners in terms of speech rate, complexity, and accuracy.

In summation, most of the L2 research on construction grammar has focused on verifying the psychological reality of argument structure constructions, together with their learnability issues. Few English ASCs have been presented to date, and grammar instruction based on construction grammar is still in its infancy. Thus ASCs need to be broadened to encompass a variety of sentence structures, along with the accumulation of more empirical evidence on the instructional effects of the construction grammar.

As mentioned above, there have been several studies on the effects of construction grammar-based instruction on the learning of individual ASCs. Yet little research has been carried out on the effects of construction grammar-based

instruction on overall sentence production ability, especially targeting college-level EFL learners. Therefore, this research aims to investigate whether and to what extent construction grammar-based instruction affect Korean college English learners' improvements of sentence production ability. In addition, in terms of the instructional method, it examines to what extent the factor of "network" within the construction grammar framework plays a role in developing sentence production.

CHAPTER 3.
METHODOLOGY

The present study aims to explore the effects of construction grammar-based instruction on the sentence production ability of Korean college learners of English. To this end, this study measured the learners' ability to produce the target constructions using different types of tasks. This chapter presents a general overview of the methodological approach and research design employed in the present study. It begins with the description of participants, target structures and procedures, followed by instructional instruments and methods for data collection.

3.1 Participants

At the beginning of the current study, sixty Korean college English learners participated. They were freshmen attending a university located in a province of South Korea. None of them had lived in English-speaking countries; their experiences of learning English were restricted to classroom instruction. More specifically, they had been learning English as a foreign language (EFL) for approximately eight years through a regular General English course of two to three hours per week of classroom instruction. The learners' initial ability to produce and comprehend English argument structure constructions was

measured by the same type of tasks as those used for the two posttests, and they turned out to be a homogeneous group.

All the learners had participated in General English Reading classes as a compulsory course during the fall semester of 2012. When the current study began, they had already been assigned to three classes in the regular English curriculum. The three groups were all instructed by the researcher in order to minimize the effects of instructor variable.

Throughout the experiment, all groups participated in eight instructional sessions and three testing sessions. Among the sixty learners, nine learners who did not complete four tasks properly in three tests or those who did not attend every instructional session were excluded from the final analysis. 51 learners were qualified for the final analysis of the present study. 46 were male and 5 were female. They received three different types of instruction for eight weeks. The groups were all provided with explicit instructions on the target structures. The numbers and distribution of the learners are given in Table 3.1.

TABLE 3.1

The Numbers of Learners in Three Experimental Groups

CNG	COG	NCG	Total
17	17	17	51

As shown in Table 3.2, the results of the pretest indicated that although the learners had previously been taught the target structures through formal instruction in high school, they did not seem to obtain full control over the structures.

TABLE 3.2

Descriptive Statistics of the Pretest Scores in Three Tasks

Group	N	Elicited Translation[a]		Picture Description[a]		Guided Writing		Grammaticality Judgment[a]	
		M	SD	M	SD	M	SD	M	SD
CNG	17	22.30	4.565	22.12	3.903	19.18	6.347	26.53	4.155
COG	17	22.00	4.093	20.06	4.380	19.06	6.149	25.00	3.623
NCG	17	21.94	4.789	20.22	3.468	17.47	4.758	25.12	3.498
Total	51	22.08	4.404	20.80	3.969	18.57	5.732	25.55	3.759

[a] The maximum possible scores were 36.

A one-way ANOVA demonstrated no significant difference between the three groups in any of the three tasks. Any changes or improvements in the immediate and delayed posttests would be attributable to the effects of different types of instructional treatments.

3.2 Target Structures

For teaching content, the researcher selected six core English argument

structure constructions (ASCs) and the corresponding traditional simple sentence structures, which are assumed to be essential for daily communication. These ASCs (traditional structures in parentheses) are as follows: (1) intransitive-motion (SVPP), (2) intransitive-resultative (SVC), (3) Transitive (SVO), (4) Ditransitive: Double Object Dative (SVOO) and Prepositional Dative (SVOPP), (5) Caused-motion (SVOPP), and (6) Resultative (SVOC) constructions. Six basic verbs[17] (i.e., *go*, *become*, *do*, *make*, *give*, and *put*) were used to facilitate the acquisition of ASCs. The light verb *get* was also employed as it has been considered to be the most effective in the acquisition of ASCs. Table 3.3 illustrates the target structures and main verbs including basic verbs used in the present study.

3.3 Procedure of the Study

The data was collected from early October to late December, 2012, during regular class hours. The three learner groups received eight 50-minute instructions over eight weeks. The instructional sessions were carried out as part of the 100-minute General English Reading class which met once a week. The learners took a pretest one week prior to the main study.

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[17] These verbs were chosen based on the findings from Biber, Conrad, and Reppen (1999), Goldberg et al. (2004), Naigles and Hoff-Ginsberg (1998), and Viberg (2002).

TABLE 3.3

Target Structures by the Groups

Non-constructional Group	Construction-based Groups	Main Verbs [Basic Verbs]
SV PP	**Intransitive-motion**	*come, climb, crawl, dive, fall, fly, jump, move, race, run, walk* [*go*] *Particles (Prepositions): in(to), out of, up, down, on, off, through, to(toward)
SV C$_{[AP]}$ AP: Adjective Phrase	**Intransitive-resultative**	*look, sound, smell, feel, taste* [*become*]
SVO - SV *to*-infnitive - SV gerund - SV *that*-clause	**Transitive** - SV *to*-infinitive - SV gerund - SV *that*-clause	*want, agree, decide* *stop, enjoy, finish* *think, hope, believe* [*do*]
Ditransitive - **SVOO** - **SVO PP**	**Ditransitive** - **Double Object Dative** - **Prepositional Dative**	*bring, tell, throw, show, make, buy, bake, ask* [*give*]
SVO PP	**Caused-motion**	*push, kick, hit, take, drive* [*put*] *Particles (Prepositions): in(to), out of, up, down, on, off
SVO C$_{[AP]}$ AP: Adjective Phrase	**Resultative**	*wipe, paint, shoot, kick, push* [*make*]
- SVO *bare*-infinitive - SVO *to*-infinitive - SVO participles	- SVO *bare*-infinitive - SVO *to*-infinitive - SVO participles	- *have, make, let* - *want, believe, persuade* - *see, hear, find* cf. *help*

The immediate posttest was administered three days after the final instructional session. After a four week interval from the main study, a delayed posttest was conducted. The overall procedures of the present study are represented in Figure 3.1.

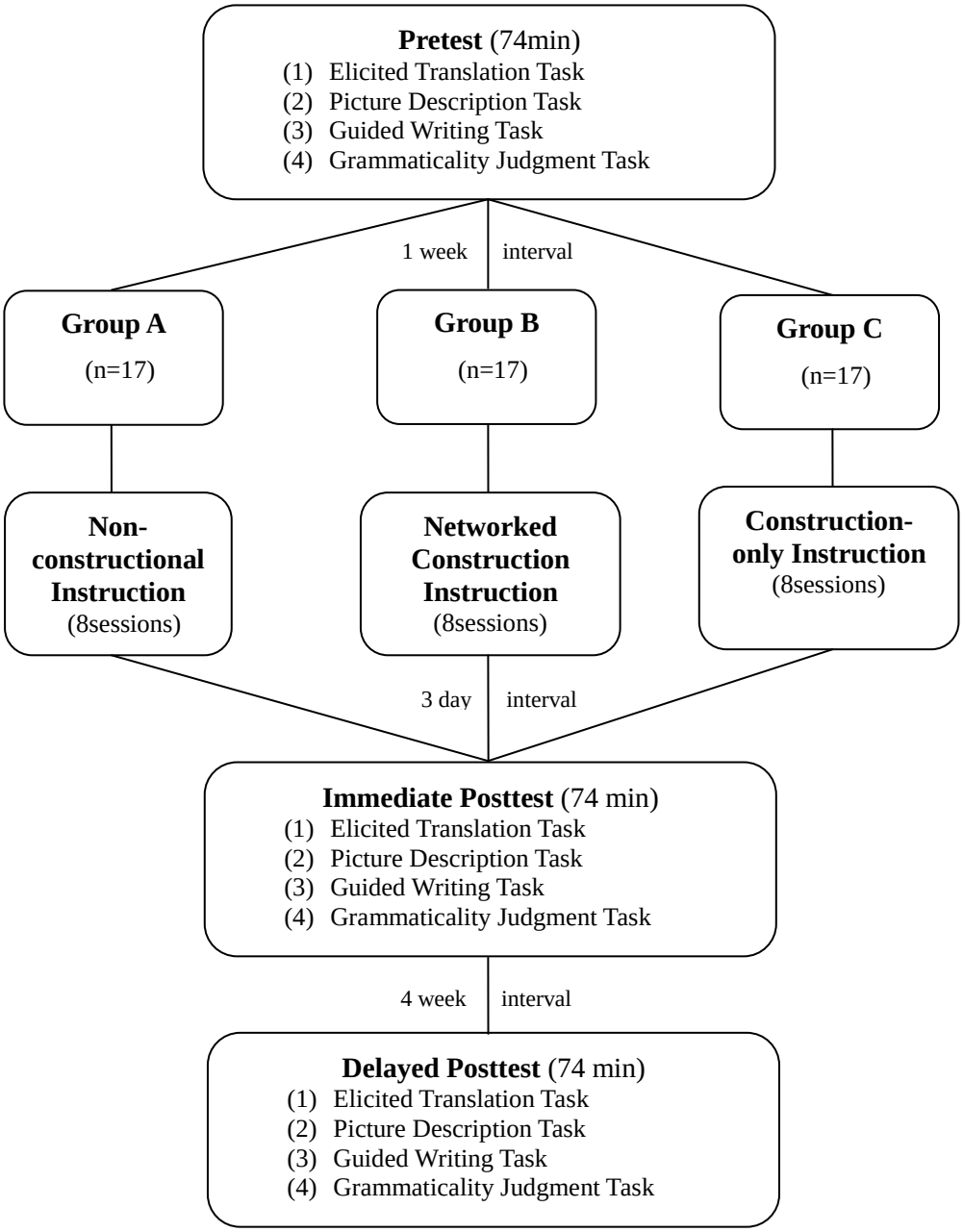


FIGURE 3.1

Overall Experimental and Instructional Design

3.4 Instructional Treatments

Approximately 6 hours and 40 minutes (50 minutes × 8 sessions) of instruction on ASCs was implemented. Each instructional session consisted of two sections: *reading section* and *grammar instruction section*. It should be noted that the reading section was not the major concern of this study. The grammar instruction section included the following three phases: (1) the introduction phase relating to a description of the target scenes, including a search for common structures or meanings, (2) the explicit instruction phase with regard to the explicit instruction of the target ASCs, involving relevant grammar points, and (3) the practice phase with a focus on picture description and fill-in-the-blank tasks.

The instruction of the three groups was differentiated in terms of the following aspects: with or without *construction-based instruction*, and for the construction-based instruction, with or without *network-based instruction*. Here, the network-based instruction refers to the presentation of the organized ASCs in accordance with Goldberg's (1995, 2006, 2013) hierarchical networks, including an explicit explanation of the relationships between the ASCs. The two construction-based groups were compared with the non-constructional group in order to investigate whether the construction-based instruction would have any effects on the improvements of the learners' sentence production. Furthermore, the network-based group was compared with the non-networked groups in order

to determine how the constructional network would affect the improvements of the learners' sentence production ability. The three groups were referred to as CNG (constructional networking group), COG (construction-only group), and NCG (non-constructional group), respectively.

The treatments were explicit in nature. The construction-based groups were taught six core ASCs: intransitive-motion, intransitive-resultative, transitive, ditransitive, caused-motion, and resultative constructions. The non-constructional group was provided with sentence structures corresponding to the ASCs given to the construction-based groups. An equal amount of input through the same teaching materials was given to all three groups. In addition, the input included additional high-frequency grammatical structures and basic verbs for each construction (e.g., *go*, *become*, *do*, *give*, *put*, *make*, and *get* for all constructions). These constructions were all drawn from the reading passages which were part of the main textbook for the reading class. All the instructional materials were presented on the computer screen using a PowerPoint format.

The overall organization of the instructional sessions is presented in Table 3.4.

TABLE 3.4

Overall Procedure of Instructional Session

Type	Phase	Instructional Contents	Time (minutes)
1st Section (Reading)	Skim	Skimming for Overall Content	5
	Read	Reading the Entire Passage	40
	Scan	Scanning for Specific Information	5
2nd Section (Grammar Instruction)	Introduction	· Picture Description · Underlying Rule Inference	5
	Explicit Instruction	[CNG & COG] 1) Formula Step 2) Verb island Step 3) Construction Step [NCG] 1) Formula Step 2) Sentence patterns Step	20
		Additional Grammar Points	15
	Practice	· Picture Description Task · Fill-in-the-Blank Task	10

3.4.1 Instruction of constructions in network

For the network-based instruction group (CNG), the instructional procedure for each target construction is as follows. In the first phase (5 minutes), pictures relevant to the target construction were shown to the learners with no information relating to the scenes presented. The learners were then asked to present verbally as many sentences for each picture as they could. After that, the learners were exposed to some written examples of the target construction

including those drawn from the reading passages. They were asked to make verbal responses about any regularity, they found meaningful from the examples, in terms of both forms and meanings. The instructor did not provide them with any answers or feedback at this stage.

In the second phase (35 minutes), the instructor provided an explicit explanation of the target constructions, using pictures including those presented in the first phase. This phase comprised three steps: *formula step*, *verb island step*, and *construction step*. Firstly, a formula (or an exemplar) of the individual constructions, using the basic verbs, was presented as a way of effectively teaching the ASCs (e.g., intransitive-motion: *I went to school*; intransitive-resultative: *She became sad*; transitive: *I did something*; ditransitive: *I gave him a book*; caused-motion: *I put it on the table*; resultative: *He made me happy*). This formula, as a reminder, was given to the learners every time new examples of the target constructions were introduced throughout this stage; they were asked to recite the prefabricated expressions. The second step, based on Tomasello's (1992) *verb island hypothesis*, was concerned with the learning of verb-argument pattern, including thematic roles of the verb of the formula. For example, when the learners received the instruction on the formulaic expression of the caused-motion construction (i.e., *I put it on the table*), they were provided with the argument structure of the basic verb *put*, along with theta roles (i.e., <agent> *put* <theme> <location>). The instructor explained to them that the verb

put, as a three-place predicate, takes two obligatory internal arguments, a theme (*it*) and a location (*on the table*), which are realized as a noun phrase and a preposition phrase, respectively, as well as an external argument, an agent (*I*). Again, the fact that these arguments must not be omitted was emphasized. Lastly, the instructional focus in the construction step, which was related to the main instruction of the target constructions, was on pairings of forms and meanings of the target constructions, and on the explanation of the way of associating the target scenes to the relevant constructional meanings. For instance, the explanations were given to the learners that the caused-motion construction has the syntactic form "SVOPP" and the constructional meaning "X CAUSES Y to MOVE Z." The scene of *a woman causing a tissue to get off the table by sneezing* is connected with the meaning of a caused-motion construction. It can be expressed like *She sneezed the napkin off the table*. Over the course of construction learning, pronouns were mostly employed in the subject/object positions to alleviate the processing load of the learners' retrieval of the full noun phrases (e.g., *She gave it to him*).

Regarding the complex constructions such as ditransitive, caused-motion, and resultative constructions, the learners were presented in networks in addition to explicit explanations on the relationship between the constructions. Figure 3.2 shows an example of the network-based instruction.

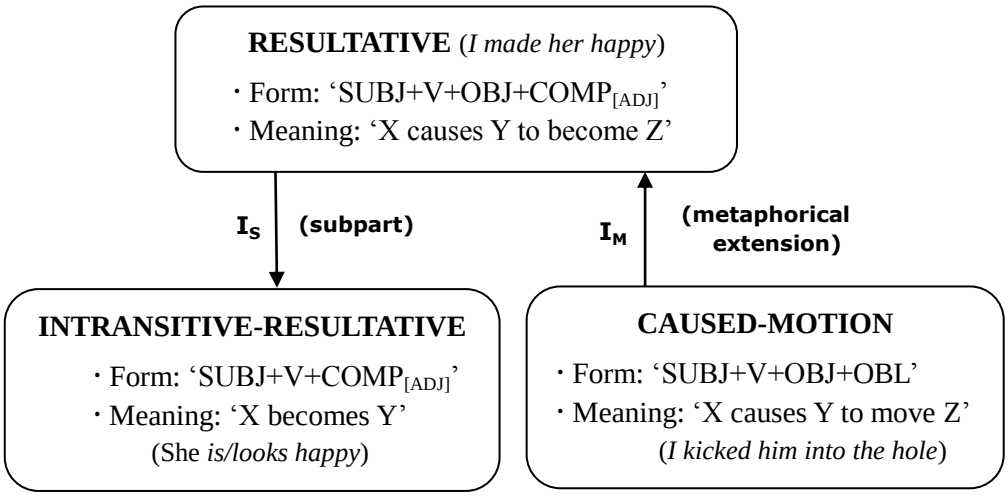


FIGURE 3.2

An Example of the Network-based Instruction

In cases where additional grammar points were needed, the learners were instructed with the provision of the pertinent materials. For instance, the instruction of intransitive-motion and caused-motion constructions involved prepositions and article systems as additional grammar points.

In particular, the building of the intransitive-motion construction started from the particle, based on its prominent role revealed in child language acquisition.

FIGURE 3.3

An Example of the Assembly of Intransitive-motion Construction

As illustrated in Figure 3.3, to describe the scene of *a fox jumping into the snow*, the particle *into* was first presented, followed by the NP *the snow* as the specific location. The PP *into the snow* was merged with the verb *jump* to form the incomplete verb expression *jump into the snow*. The resulting verb expression was then merged with the subject of *jump*, namely the NP *the fox*. Likewise, the particle was underscored in the instruction of caused-motion construction by presenting it first in the formation of the construction. One of the important issues of the present study is how such a focus on the particle affects the learners' sentence production.

Table 3.5 presents the detailed teaching sequence for the constructional networking group.

TABLE 3.5

Detailed Teaching Sequence for CNG

Week	Target Structures	Additional Grammar Points
Weeks 1-2	S-P ⇒[I_I] **(1) IM** S-P ⇒[I_I] **(2) IR**	- Preposition - Article system
Weeks 3-4	**(3) T ⇒ *to*-infinitive, *gerund*, *that*-clause** (3) T ⇒[I_I] **(4) CM** [I_S]← (1) IM	Preposition (extension)
Weeks 5-6	(4) CM ⇒[I_M] **(5) PD** (4) CM ⇒[I_M] **(6) R** [I_S]← (2) IR	Information Structure
Week 7	(4) CM ⇒ (5) PD ⇒ **(7) DOD** Review: I. IM ⇒ CM ⇒ PD ⇒ DOD II. IM ⇒ CM ⇒ R	
Week 8	IR ⇔ R ⇒ SVO *bare*-infinitive (*have*, *make*, *let*) ⇒ SVO *bare*-infinitive or SVO *to*-infinitive (*help*) ⇒ SVO *to*-infinitive (*want*, *believe*, *persuade*) ⇒ SVO participles (*see*, *hear*, *find*)	

Notes Particles (P), Subject-Predicate construction (S-P), Intransitive-motion construction (IM), Intransitive-resultative construction (IR), Transitive construction (T), Caused-motion construction (CM), Double Object Dative (DOD), Prepositional Dative (PD), and Resultative construction (R), I_I: instance link; I_S: subpart link; I_M: metaphorical extension link

In the final phase (10 minutes), through the picture description task, the learners practiced the target constructions with the provision of some new pictures. They were asked to complete the sentences presented next to each scene of the pictures by writing the correct answers in the given answer sheet. In the fill-in-the-blank task, the learners were directed to select the appropriate lexical items presented in a box. They were requested to write them in the given answer sheet

and submit it. The practice tasks were reviewed by the instructor at the beginning of the next class, giving them correct answers (See Appendix 1 for instructional materials).

3.4.2 Construction-only instruction

With reference to the instructional procedure for each target construction in the construction-only group (COG), both the first phase (introduction phase) and the final phase (practice phase) were identical to those of the network-based group (CNG). In the second phase (explicit instruction phase), however, the instructional technique for COG was differentiated from the CNG in that the network-based instruction was not given to COG, while keeping the instructional focus on the pairing of the forms and meanings of the target constructions constant. COG was presented with all the ASCs according to the order in which they occurred in the reading passages without any consideration of the relationships between ASCs. In short, the major difference between the two groups was whether or not each ASC was presented in an interconnected network, along with detailed explanations on the linking among them.

Like CNG, this group received instruction on the target constructions through the three instructional steps (*formula*, *verb island*, and *construction steps*). During the instruction of both intransitive-motion and caused-motion constructions,

the building of these constructions started from the particle. The teaching sequence for the construction-only instruction group is presented in detail in Table 3.6.

TABLE 3.6

Detailed Teaching Sequence for COG

Week	**Target Structures**	**Additional Grammar Points**
Weeks 1-2	**(1) IM** **(2) T : *to*-infinitive, *gerund*, *that*-clause**	- Preposition - Article system
Weeks 3-4	**(3) PD** **(4) IR**	
Weeks 5-6	**(5) R** **(6) DOD**	Information Structure
Week 7	**(7) CM** Review: IM, PD, R, DOD, CM	Preposition (extension)
Week 8	SVO *to*-infinitive (*want*, *believe*, *persuade*) SVO *bare-infinitive* (*have*, *make*, *let*) SVO *bare*-infinitive or SVO *to*-infinitive (*help*) SVO participles (*see*, *hear*, *find*)	

3.4.3 Non-constructional instruction

Concerning the non-constructional group (NCG), the introduction and practice phases were exactly the same as those of the other groups. However,

during the explicit instruction phase, this group was taught with the sentence structures in place of the ASCs presented to the construction-based groups. The instructor tried to draw the learners' attention primarily to syntactic structures of the target sentences. In lieu of the constructional meaning, Korean translations of the sentence structures were provided, focusing on verb semantics. For instance, with regard to the 'SUBJ+V+OBJ+COMP$_{[ADJ]}$' pattern as in a sentence like *I wiped the table clean*, which corresponds to the resultative construction, the instruction was concerned with the syntactic form itself, focusing on the grammatical relations of the sentence pattern. That is, the subject (*I*) is preceded by the verb (*wipe*), and the verb is followed by an object (*the table*) and an object complement (*clean*), with the provision of its Korean translation. The learners were not exposed to the constructional meaning of 'X causes Y to become Z.'

Another aspect in the explicit instruction phase on which NCG was different from the other groups was that it did not go through the verb island step employed in the construction-based instruction. This was supposed to mean that although the learners in this group were given the formulas (or exemplars) for each sentence pattern, they were not exposed to the verb-argument patterns and thematic roles of these formulas.

Like COG, this group was provided with all target structures according to the order in which they were distributed in the reading passages, not concerned with the interrelationship among the target structures. This indicated that the learners

were less likely to have systematic access to the sentence structures. In particular, the SVPP and SVOPP structures were presented to the learners with the particle bold-faced as a way of enhancing input. Table 3.7 demonstrates a detailed teaching sequence for the non-constructional group.

TABLE 3.7

Detailed Teaching Sequence for NCG

Week	Target Structures	Additional Grammar Points
Weeks 1-2	**(1) SVPP** **(2) T : *to*-infinitive, *gerund*, *that*-clause**	- Preposition - Article system
Weeks 3-4	**(3) SVOPP (PD)** **(4) SVC$_{[AP]}$**	
Weeks 5-6	**(5) SVOC$_{[AP]}$** **(6) SVOO (DOD)**	Information Structure
Week 7	**(7) SVOPP** Review: SVPP, PD, SVOC, SVOO, SVOPP	Preposition (extension)
Week 8	SVO *to*-infinitive (*want*, *believe*, *persuade*) SVO *bare-infinitive* (*have*, *make*, *let*) SVO *bare*-infinitive or SVO *to*-infinitive (*help*) SVO participles (*see*, *hear*, *find*)	

3.5 Testing Instruments

All the pre-test items in four different types of tasks were adjusted for the

immediate and delayed posttests to ensure that practice effect and memorization would not interfere in the learners' performance on the two tests after instruction.

The four tasks were sequenced so that the learners could not guess the aim of each task and could not be biased based on the preceding tasks. That is, three tasks designed to measure the production of target constructions were administered before the grammaticality judgment task for receptive knowledge. The production tasks were sequenced depending on the extent to which they have cues available in the production of the test items. These tasks were given to the learners in the following order: the elicited translation task, the picture description task, and the guided writing task.

3.5.1 Elicited translation task

The Elicited Translation Task[18] (hereafter, ETT) was performed to measure the learners' ability to express propositional meanings by relevant constructions. In ETT, the learners were presented with 36 Korean sentences and asked to write down their English equivalents. They were given 15 minutes to complete the task. The task items were based on six types of English ASCs. Their distribution

[18] This task belongs to one of the discrete point tests within experimentally elicited samples (Ellis & Barkhuizen, 2005).

information is represented in Table 3.8. The examples are illustrated in Figure 3.4 (See Appendix 2 for the full items).

> * *Translate the following Korean into English*.
>
> 5. 그녀는 그 병원으로 달려 들어갔다.
>
> Geunyeoneun geu byeongwoneulo dallyeodeuleogassda.
>
> (She ran into the hospital.) (Pretest)
>
> 27. 그녀는 벽을 하얗게 칠했다.
>
> Geunyeoneun byeogeul hayahge chilhaessda.
>
> (She painted the wall white.) (Immediate Posttest)

FIGURE 3.4

Sample Items of Elicited Translation Task

The inherent weakness of this task is that it is easily influenced by extensive L1 transfer which does not take place in more natural use (Burmeister & Ufert, 1980; Lococo, 1976). Nonetheless, if the learners show any improvements in this task, it may serve as strong evidence that they get closer to internalizing the target constructions, moving out of the sphere of influence of their first language.

TABLE 3.8

Distribution of English ASCs in ETT

Intransitive-motion	Intransitive-resultative	Transitive	Ditransitive		Caused-motion	Resultative	Total
			DOD	PD			
6	6	6	3	3	6	6	36

The learners' responses were typed and coded according to the use of each ASC. Each correct response was awarded one point, and incorrect responses or no answer received zero. For the responses in which the light verb *get* was used instead of the main verb, they were coded as correct. The total scores and the proportion of correct responses for each ASC were calculated.

3.5.2 Picture description task

The picture description task (hereafter, PDT) was conducted to measure the learners' ability to map the scenes to the relevant constructions. PDT consisted of 36 pictures, and as in ETT, task items were created on the basis of six types of English ASCs. Their distribution information is shown in Table 3.9.

TABLE 3.9

Distribution of English ASCs in PDT

Intransitive-motion	Intransitive-resultative	Transitive	Ditransitive		Caused-motion	Resultative	Total
			DOD	PD			
6	6	6	4	2	6	6	36

The learners were directed to describe pictures displayed on a computer screen for 12 minutes. Each picture included a main verb and participants involved in an activity expressed by the verb (i.e., arguments), as exemplified in Figure 3.5 (See Appendix 3 for the full items). A main verb was optionally provided only in case that the verb was not easy for the learners to retrieve. For clarity's sake, each picture was provided with a grammatical subject. The learners were told that they must include the given main verb and the participants in their answers. Thus any answer omitting those required elements was considered incorrect. Every picture was shown on the screen for 20 seconds.[19] All pictures were replaced by new ones for the immediate and delayed posttests.

The learners' responses were typed and coded according to the use of each ASC. Each correct response was given one point, but incorrect responses or no answer were given zero. Only for the pictures in which the main verb was not presented explicitly, the use of the light verb *get* was coded as correct. Since the learners were directed to include all the arguments presented in the pictures in

[19] This speeded task was to elicit the learners' implicit knowledge (DeKeyser, 2003; Ellis & Barkhuizen, 2005).

their answers, any responses omitting them were considered incorrect even if they were grammatically correct. The total scores and the proportion of correct responses for each ASC were calculated.

** Describe the following pictures in English. You must include the participants presented in each picture.*

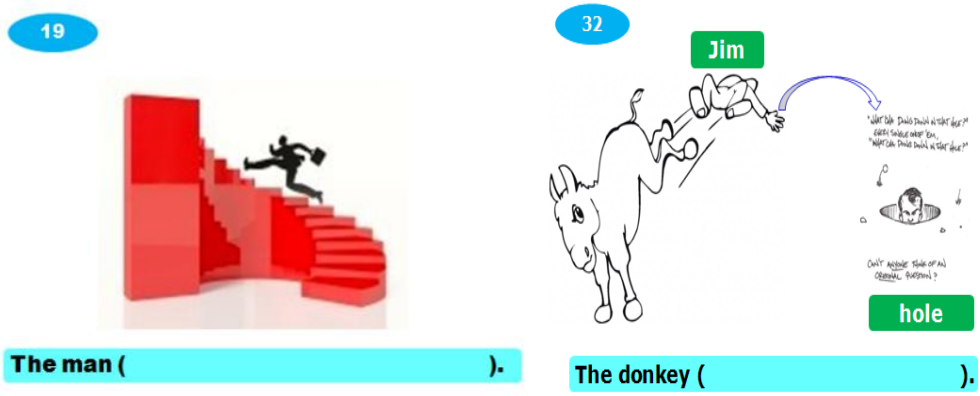


FIGURE 3.5

Sample Items of Picture Description Task

3.5.3 Guided writing task

The Guided Writing Task (hereafter, GWT) was created to measure the learners' productive use of the target constructions more clearly. The researcher chose a 10-minute silent video clip including multiple scenes which can be

expressed utilizing a variety of ASCs. After watching the video clip, the learners were asked to write down as many sentences as possible relevant to actions performed by the characters in the clip. The learners were given 20 minutes to complete the task. Prior to writing, the researcher helped them to recall what was happening in the episode by mentioning several scenes or activities for approximately 5 minutes, as illustrated in Figure 3.6 (See Appendix 4 for the full items).

1. 그는 인형을 담 너머로 던진다. **[Caused-motion construction]**
   (Geuneun inhyeongeul dam neomeolo deonjinda.)
   (He is throwing the doll over the wall.)
2. 그가 집으로 걸어 들어간다. **[Intransitive-motion construction]**
   (Geuga jibeulo geoleo deuleoganda.)
   (He is walking into the house.)
3. 그녀가 아이들에게 동전을 준다. **[Double object construction]**
   (Geunyeoga aideulege dongjeoneul junda.)
   (She is giving the children coins.)

FIGURE 3.6
Sample Items of Guided Writing Task

The distribution of ASCs relative to the scenes occurring in the episode is presented in Table 3.10. The same video clip was used in this task across all

three testing sessions. The number and the proportion of each type of sentence patterns (or ASCs) were calculated.

TABLE 3.10

Distribution of English ASCs in GWT

Intransitive-motion	Intransitive-resultative	Transitive	Ditransitive		Caused-motion	Resultative	Total
			DOD	PD			
6	2	10	2	0	7	7	36

3.5.4 Grammaticality judgment task

The grammaticality judgment task (hereafter, GJT) consisted of 36 test items and was administered to elicit the learners' intuitions about the target structures. The learners were presented with sentences, some of which were grammatical and some ungrammatical. They were asked to judge the grammaticality of those sentences, with the additional option of a 'not sure' choice. Thus the test items were given on a 3-point Likert-type scale: 1 = clearly ungrammatical, 2 = not sure, and 3 = clearly grammatical. In addition to judging whether the sentences were grammatical or ungrammatical, the learners were asked to indicate the grammatical errors by underlining and to correct them. They were also given vocabulary support, being presented with the meanings of some unknown words at the end of the sentence. The learners were given 12 minutes to complete the

task. This speeded or pressurized format was intended to elicit judgments on the basis of implicit knowledge by inhibiting the learners from turning to metalinguistic rules (Ellis & Barkhuizen, 2005). The task items were constructed based on six types of English ASCs, as illustrated in Figure 3.7 (See Appendix 5 for the full items). Their distribution information is displayed in Table 3.11.

* *Judge the grammaticality of the following sentences. Underline the grammatical errors and correct them.*
(1: clearly ungrammatical, 2: not sure, 3: clearly grammatical)

5. The soup smells bad. (Delayed Posttest)

14. The kid pushed his dog the carton. (Immediate Posttest)

16. Jack hammered the metal flat. (Pretest)

FIGURE 3.7

Sample Items of Grammaticality Judgment Task

TABLE 3.11

Distribution of English ASCs in GJT

Intransitive-motion	Intransitive-resultative	Transitive	Ditransitive		Caused-motion	Resultative	Total
			DOD	PD			
6	6	6	2	4	6	6	36

* Grammatical sentences (21) / Ungrammatical sentences (15)

Each correct response was given one point. As the learners were directed to underline the grammatical errors and correct them, among the correct responses that they judged as ungrammatical, only those with accurate error correction were given one point. Thus, no score was given when proper error corrections were not made.

Table 3.12 illustrates the verbs used in ASCs by tasks.

3.6 Statistical Analysis

The analysis of the data gathered from the three tests was conducted using the statistical package SPSS 18.0. Descriptive statistics were first calculated for each group's performance. In order to compare the instructional effects between the groups across the three tests, a repeated-measures ANOVA was then conducted on all mean scores for each task. Here, between-groups were three groups and within-groups were three test sessions. One-way ANOVA was carried out to determine whether there were significant differences among the three groups. A post-hoc test was then conducted to find the differences among the three groups. This statistical analysis was in turn conducted for each type of ASC. The statistical alpha level was set at .05 in all statistical analyses.

TABLE 3.12

Verbs Used in ASCs by Tasks

ASCs	ETT	WPDT	GJT	GWT
SV PP – [IM]	*run* into *buzz* into *rumble* down *roll* out of *be* in *live* in	*float* into *hike* up *go* into *walk* down *be* under *be* in	*walk* into *move* out of *fly* into *march* into *amble* through *be* in	*walk* out of *go* out of *run* into *walk* into *sit* on
SV $C_{[AP]}$ - [IR] AP: Adjective Phrase	*be*, *look*, *smell*, *taste*, *sound*, *feel*	*look*, *smell*, *taste*, *sound*, *feel*	*get*, *look*, *smell*, *taste*, *sound*	*be*, *look*, *feel*
SVO – [T] (1) SV *to*-infnitive (2) SV gerund (3) SV *that*-clause	(1) *agree*, *learn*, *decide* (2) *enjoy* (3) *think*, *believe*	*hit*, *water*, *wash*, *pull*, *mop*	(1) *want*, *expect* (2) *finish*, *mind* (3) *feel*	*wear* (*put on*), *drink*
Ditransitive (1) **SVOO – [DOD]** (2) **SVO PP – [PD]**	(1) *kick*, *give*, *show* (2) *teach*, *send*	(1) *give*, *send*, *lend* (2) *send*, *pass*	(1) *give*, *buy* (2) *throw*, *send*, *buy*	(1) *give*
SVO PP – [CM]	*put*/*post* – on *push* – into *escort* – to *put* – out of *roll* – down *put* – on	*push* – into *put* – on(to) *push* – down *kick* – into *hit* – over *put* – on	*put* – on *push* – into *sneeze* – off *kick* – into *show* – into *pull* – out of	*pour* – into *put* – into *move* – into *put*/*spread* – onto *beat* – on(to) *pull* – out of
SVO $C_{[AP]}$ – [R] AP: Adjective Phrase (1) SVO *bare*-infinitive (2) SVO *to*-infinitive (3) SVO participles	*wipe*, *paint*, *kick* (1) *make* (3) *see* cf. *help*	cf. *turn* the light on	*make*, *hammer*, *water* (2) *believe* (3) *find* cf. *take* the wall down	*make* (1) *make* (2) *ask*, *urge*, *coach*, *force*, *tell*, *advise*

CHAPTER 4.
RESULTS AND DISCUSSION

This chapter reports the statistical results of the four tasks and discusses the research findings. The first section summarizes the findings from the two posttests. The effects of the construction-based instruction, including network effects are discussed in the second section. The last section discusses the salient effects of the construction-based instruction on the learners' improvements in constructional productivity and accuracy.

4.1 Results of the Immediate and Delayed Posttests

Four tasks (i.e., ETT, PDT, GWT, and GJT) were designed to measure the learners' written performance on the target constructions. The overall results of each task are presented, including the findings of each of the argument structure constructions (ASCs).

An overall MANOVA was conducted with the three different types of instructional treatments as a between-subjects independent variable based on a significant correlation among the three dependent variables, ETT, PDT, and GJT (for the immediate posttest, R = .757, $p < .05$ between ETT and PDT; R = .540, $p < .05$ between ETT and GJT; R = .527, $p < .05$ between PDT and GJT, for the

delayed posttest, R = .866, $p < .05$ between ETT and PDT; R = .697, $p < .05$ between ETT and GJT; R = .743, $p < .05$ between PDT and GJT). The results, as shown in Table 4.1, reveal statistically significant effects of the different instructional treatments, Wilks' Lambda = .327, F(9, 112) = 11. 465, $p = .000$ for the immediate posttest; Wilks' Lambda = .425, F(9, 112) = 8.194, $p = .000$ for the delayed posttest.

A univariate ANOVA reveals that in the immediate posttest, the instructional effects were statistically significant for the ETT, F(2, 48) = 23.723, $p = .000$, for PDT, F(2, 48) = 25.472, $p = .000$, and for GJT, F(2, 48) = 21.131, $p = .000$, respectively. In the delayed posttest, the instructional effects were significant for ETT, F(2, 48) = 14.840, $p = .000$, for the PDT, F(2, 48) = 15.842, $p = .000$, and for GJT, F(2, 48) = 25.039, $p = .000$, respectively. The Tukey post-hoc test indicated that in the immediate posttest, for ETT and GJT scores, there were significant differences between CNG and NCG, and between COG and NCG; for PDT score, all three groups were statistically different from each other. In the delayed posttest, for ETT score, there were significant differences between CNG and NCG, and between CNG and COG, but no difference between COG and NCG; for PDT and GJT scores, all of the three groups were statistically different from each other.

TABLE 4.1

MANOVA Results of the Immediate and Delayed Posttests

Test	Task type	Wilk's Ramda	F (Sig)	CNG n=17	COG n=17	NCG n=17	F	*Sig.*
				M	*M*	*M*		
Immediate Posttest	ETT	.327	11.465 (.000)	32.71[a]	30.00	24.59	23.723	.000*
	PDT			32.71	30.35	27.00	25.472	.000*
	GJT			33.41	31.82	28.35	21.131	.000*
Delayed Posttest	ETT	.425	8.194 (.000)	31.88[a]	28.18	25.88	14.840	.000*
	PDT			32.06	29.65	26.59	15.842	.000*
	GJT			32.47	28.82	26.82	25.039	.000*

[a] The maximum possible scores were 36.

4.1.1 Results of ETT

The elicited translation task was conducted to see whether the three groups differed in their ability to express propositional meanings using appropriate constructions. The higher gain scores meant that the learners produced more amounts of ASCs with more accuracy. Table 4.2 displays the descriptive statistics of the ETT mean scores in the pretest, which was conducted to show the pre-treatment equivalence of the three groups in terms of their use of ASCs.

TABLE 4.2

Descriptive Statistics of the ETT Mean Scores in the Pretest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	22.30[a]	4.565	19.96	24.65	10.00	30.00
COG	17	22.00	4.093	19.90	24.10	17.00	31.00
NCG	17	21.94	4.789	19.48	24.40	11.00	29.00
Total	51	22.08	4.404	20.84	23.32	10.00	31.00

[a] The maximum possible scores were 36.

TABLE 4.3

One-way ANOVA Summary of the ETT Mean Scores in the Pretest

Source	SS	df	MS	F	Sig.
Between Groups	1.281	2	.641	.032	.969
Within Groups	968.404	48	20.175		
Total	969.685	50			

There were no significant differences between the groups, F(2, 48) = .032, *p* = .906, indicating that the three groups were homogeneous in the pretest. Thus any changes in the learners' performance after the pretest would be attributable to the instructional treatments.

Tables 4.4 and 4.5 show the descriptive statistics of the ETT mean scores in the two posttests. CNG performed best (M = 32.71, SD = 2.312 for the immediate posttest; M = 31.88, SD = 3.039 for the delayed posttest), whereas NCG performed worst (M = 24.59, SD 4.744 for the immediate posttest; M = 25.88, SD = 3.740 for the delayed posttest).

TABLE 4.4

Descriptive Statistics of the ETT Mean Scores in the Immediate Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	32.71 [a]	2.312	31.52	33.89	28.00	36.00
COG	17	30.00	2.979	28.47	31.53	23.00	34.00
NCG	17	24.59	4.744	22.15	27.03	15.00	32.00
Total	51	29.10	4.834	27.74	30.46	15.00	36.00

[a] The maximum possible scores were 36.

TABLE 4.5

Descriptive Statistics of the ETT Mean Scores in the Delayed Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	31.88[a]	3.039	30.32	33.44	26.00	36.00
COG	17	28.18	2.877	26.70	29.66	21.00	33.00
NCG	17	25.88	3.740	23.96	27.81	19.00	32.00
Total	51	28.65	4.039	27.51	29.78	19.00	36.00

[a] The maximum possible scores were 36.

Figure 4.1 graphically shows mean differences between the three tests across the three groups in ETT.

The overall scores were improved after instruction in all groups in the immediate posttest. CNG displayed the greatest improvement, followed by COG and then NCG. The CNG mean increased by 10.41, whereas the COG mean increased by 8.00.

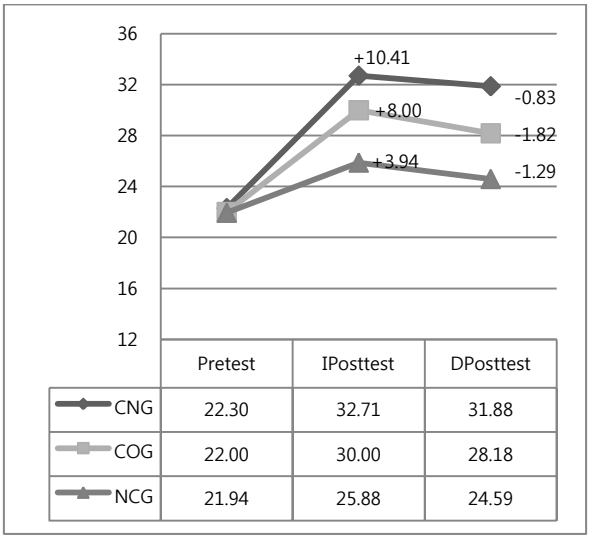


FIGURE 4.1

ETT Mean Differences Between the Three Tests by the Groups

While CNG and COG maintained higher scores in the delayed posttest, the scores of NCG remained low. Changes from the immediate posttest to the delayed posttest were greater for COG than for CNG, with COG decreasing by 1.82 and CNG 0.83. From the pretest to the delayed posttest, CNG gains were greatest at 9.58, followed by COG gains at 6.18, and NCG gains at 2.65.

A repeated-measures ANOVA was conducted to investigate the instructional effects both within and between the three groups. The results are presented in Table 4.6.

TABLE 4.6

A Repeated-measures ANOVA of the ETT Mean Scores

	Source	df	MS	F	Sig.
Within-Subjects	time	2	708.787	108.825	.000*
	time * group	4	55.892	8.581	.000*
	Error (time)	96	6.513		
Between-Subjects	Group	2	297.530	10.133	.000*
	Error	48	29.362		

There were statistically significant results for the interaction effect of treatment group with test sessions, F(4, 96) = 8.581, p = .000, as well as test sessions F(2, 96) = 108.825, p = .000. This indicates that the three groups changed differently over time. Separate univariate ANOVAs were thus conducted for each test session.

TABLE 4.7

One-way ANOVA Summary of the ETT Mean Scores in the Immediate Posttest

Source	SS	df	MS	F	Sig.
Between Groups	580.863	2	290.431	23.723	.000*
Within Groups	587.647	48	12.243		
Total	1168.510	50			

As shown in Table 4.7, the groups differed significantly in the immediate posttest (F(2, 48) = 23.723, p = .000). Tukey post-hoc test showed significant differences between the construction-based groups (CNG & COG) and the non-

constructional group (NCG) (p = .000 in both cases). This result supported the effects of the construction-based instruction on the improvements of sentence production. However, the difference between CNG and COG was not significant (p = .099), indicating that network effects were not found.

TABLE 4.8

One-way ANOVA Summary of the ETT Mean Scores in the Delayed Posttest

Source	SS	df	MS	F	Sig.
Between Groups	311.647	2	155.824	14.840	.000*
Within Groups	504.000	48	10.500		
Total	815.647	50			

The groups differed significantly in the delayed posttest (F(2, 48) = 14.840, p = .000). A multiple comparison of group means showed no significant differences between COG and NCG, whereas there were significant differences not only between CNG and COG, but also between CNG and NCG. The overall sentence production by CNG was notably greater than that of both COG and NCG. These results indicated that the effects of the construction-based instruction without using network were not statistically significant. That is, the network-based instruction played a significant role in maximizing the learners' performance on this task.

Statistical analyses for each type of ASCs were undertaken in order to investigate the learners' performance in ETT in more detail. The descriptive

statistics of each ASC along with its ANOVA results in the pretest is presented in Table 4.9. There were no significant differences in the group means for each type of ASCs, indicating that the three groups were homogeneous.

TABLE 4.9

ETT Results of ASCs in the Pretest

ASCs (Maximum Score)		CNG n=17		COG n=17		NCG n=17		F	*Sig.*
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		3.65	1.115	2.94	1.249	3.12	.993	1.817	.173
IR (6)		5.18	1.074	5.29	.686	4.59	1.326	2.157	.127
T (6)		4.82	1.334	4.41	1.372	4.41	1.176	.571	.569
CM (6)		3.47	1.231	3.47	1.328	3.88	1.219	.605	.550
DI (6)	DOD(4)	1.77	.567	1.76	.562	1.71	.588	.070	.932
	PD (2)	1.41	.618	1.53	.800	1.29	.772	.436	.649
R (6)		2.00	1.118	2.59	1.278	2.94	.827	.233	.062

*DOD: Double Object Dative, PD: Prepositional Dative

The descriptive statistics of each ASC in the two posttests is presented in Tables 4.10 and 4.11. Figure 4.2 represents how the three groups performed each type of ASC in the three tests.

All three groups gained their scores for each ASC from the pretest to the immediate posttest, showing the effects of the three types of instructional treatments, despite the fact that there were disparities in the improvement rates between the groups.

TABLE 4.10

ETT Results of ASCs in the Immediate Posttest

ASCs (Maximum Score)		CNG n=17		COG n=17		NCG n=17		F	*Sig.*
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		5.41	.618	5.24	.562	3.47	1.375	22.705	.000*
IR (6)		5.76	.562	5.94	.243	5.24	1.091	4.394	.018*
T (6)		5.59	.618	4.94	1.029	4.18	1.334	7.909	.001*
CM (6)		5.59	.507	5.24	.970	4.53	1.007	6.698	.003*
DI (6)	DOD(4)	2.65	.493	2.35	.493	1.65	.493	18.505	.000*
	PD (2)	2.18	.636	2.12	.332	1.82	.728	1.746	.185
R (6)		5.53	.624	4.18	1.667	3.71	1.312	9.347	.000*

The differences among the groups in the immediate posttest were statistically significant except for the prepositional dative construction (F(2, 48) = 1.746, *p* = .185).

TABLE 4.11

ETT Results of ASCs in the Delayed Posttest

ASCs (Maximum Score)		CNG n=17		COG n=17		NCG n=17		F	*Sig.*
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		5.53	.717	4.71	.772	3.53	.717	31.710	.000*
IR (6)		5.82	.393	5.82	.393	5.59	.507	1.662	.200
T (6)		5.12	1.054	4.53	1.125	4.35	1.057	2.341	.107
CM (6)		5.47	.514	4.94	1.029	4.82	.951	2.719	.045*
DI (6)	DOD(4)	2.76	.437	2.41	.618	2.18	.636	4.571	.015*
	PD (2)	2.59	.507	2.18	.529	1.76	.664	8.842	.001*
R (6)		4.59	1.326	3.59	1.228	3.65	1.412	3.055	.045*

CNG performed best in the delayed posttest, followed by COG, and then NCG, in the same order as in the immediate posttest. Overall, the construction-based groups kept their higher scores for each ASC from the immediate posttest to the delayed posttest. The differences among the groups were significant except for the intransitive-resultative and transitive constructions.

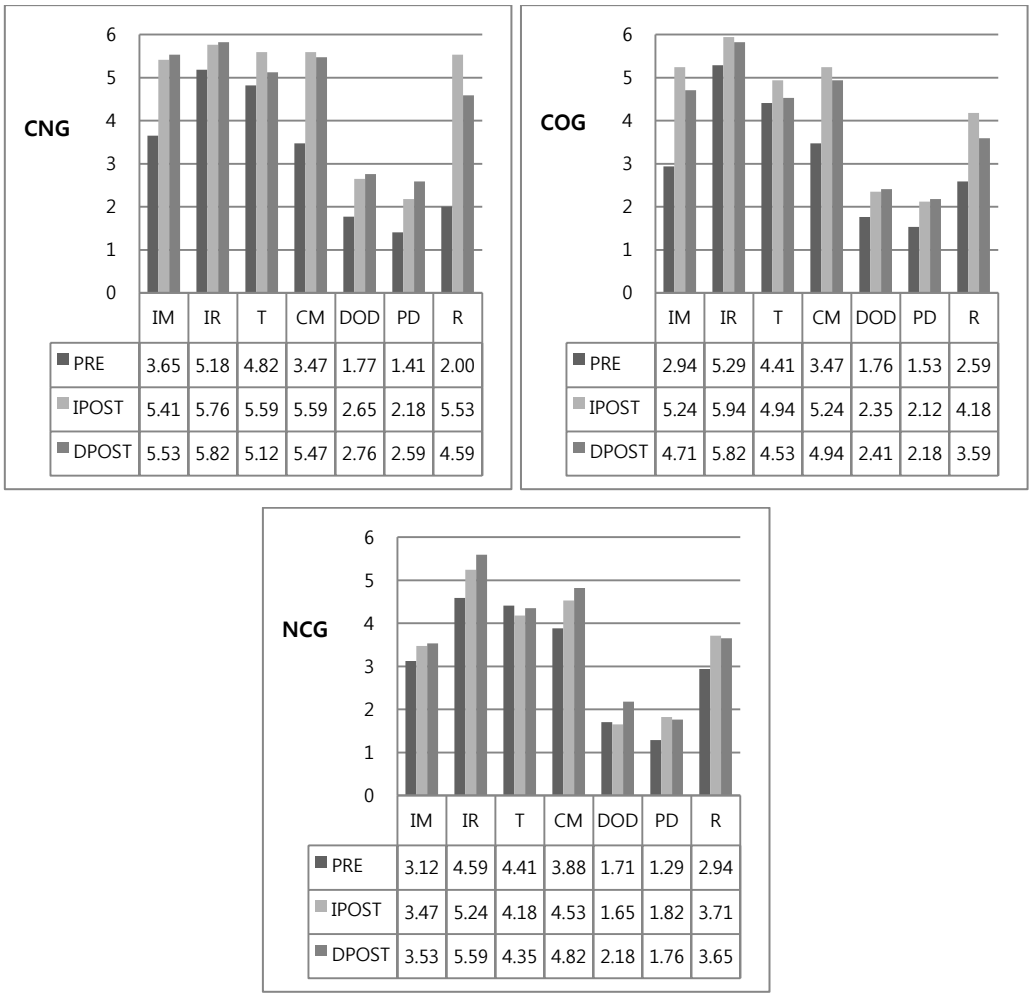


FIGURE 4.2

ETT Mean Scores of ASCs by the Groups Across the Test Sessions

Tukey post-hoc test was anlyzed to expolore if the results are significant. The results of the immediate and delayed posttests are presented in Tables 4.12 and 4.13.

TABLE 4.12

ETT Results of Tukey Post-hoc Test on ASCs in the Immediate Posttest

ASCs	(I) Group	(J) Group	Mean Difference	Sig.
IM	NCG	COG	-1.765*	.000*
		CNG	-1.941*	.000*
	COG	CNG	-.176	.845
IR	NCG	COG	-.706*	.017*
		CNG	-.529	.093
	COG	CNG	.176	.758
T	NCG	COG	-.765	.090
		CNG	-1.412*	.001*
	COG	CNG	-.647	.174
CM	NCG	COG	-.706	.053
		CNG	-1.059*	.002*
	COG	CNG	-.353	.460
DI DOD	NCG	COG	-.706*	.000*
		CNG	-1.000*	.000*
	COG	CNG	-.294	.201
R	NCG	COG	-.471	.534
		CNG	-1.824*	.000*
	COG	CNG	-1.353*	.009*

In the immediate posttest, the effects of the construction-based instruction obtained in the intransitive-motion and double object dative constructions. For the resultative construction, which is considered to be the most difficult construction, not only were there significant differences between CNG and NCG, but also between CNG and COG. This suggests that the network variable plays a crucial role in the production of this construction.

TABLE 4.13

ETT Results of Tukey Post-hoc Test on ASCs in the Delayed Posttest

ASCs		(I) Group	(J) Group	Mean Difference	Sig.
IM		NCG	COG	-1.176*	.000*
			CNG	-2.000*	.000*
		COG	CNG	-.824*	.006*
CM		NCG	COG	-.706	.053
			CNG	-1.059*	.002*
		COG	CNG	-.353	.460
DI	DOD	NCG	COG	-.353	.410
			CNG	-1.529*	.000*
		COG	CNG	-1.176*	.000*
	PD	NCG	COG	-.059	.955
			CNG	-.412*	.000*
		COG	CNG	-.353	.202
R		NCG	COG	-.471	.566
			CNG	-1.471*	.007*
		COG	CNG	-.558*	.046*

Low scores of the non-constructional group remained unchanged while the two construction-based groups maintained higher scores in the delayed posttest. There were significant differences among all three groups in the intransitive-motion construction, indicating network effects as well as the effects of the construction-based instruction. With reference to the double object dative and resultative constructions, significant differences were found only between the networked construction group and the non-networked groups. This indicates that there was a general tendency for the network to play a role in the learners' improvements in the production of these constructions.

4.1.2 Results of PDT

An analysis of the picture description task was carried out to see whether the three groups differed in their ability to map the scenes onto the relevant constructions. The high gain scores indicated the learners' improvements in the production of ASCs with more accuracy.

Table 4.14 shows the descriptive statistics of the PDT mean scores in the pretest. As displayed in Table 4.15, there were no significant differences in the group means ($F(2, 48) = 1.437$, $p = .248$), verifying that the three groups were homogeneous in the pretest.

TABLE 4.14

Descriptive Statistics of the PDT Mean Scores in the Pretest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	22.12	3.903	20.11	24.12	16.00	28.00
COG	17	20.06	4.380	17.81	22.31	12.00	28.00
NCG	17	20.22	3.468	18.44	22.01	15.00	27.00
Total	51	20.80	3.969	19.68	21.92	12.00	28.00

[a] The maximum possible scores were 36.

TABLE 4.15

One-way ANOVA Summary of the PDT Mean Scores in the Pretest

Source	SS	df	MS	F	Sig.
Between Groups	44.490	2	22.245	1.437	.248
Within Groups	743.134	48	15.482		
Total	787.624	50			

Tables 4.16 and 4.17 show the descriptive statistics of the PDT mean scores in the two posttests. CNG performed best (M = 32.71, SD = 2.469 for the immediate posttest; M = 32.06, SD = 3.172 for the delayed posttest), whereas NCG performed worst (M = 27.00, SD = 2.693 for the immediate posttest; M = 26.59, SD = 2.647 for the delayed posttest).

TABLE 4.16

Descriptive Statistics of the PDT Mean Scores in the Immediate Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	32.71	2.469	31.44	33.98	27.00	35.00
COG	17	30.35	1.766	29.45	31.26	27.00	34.00
NCG	17	27.00	2.693	25.62	28.38	23.00	33.00
Total	51	30.02	3.295	29.09	30.95	23.00	35.00

[a] The maximum possible scores were 36.

TABLE 4.17

Descriptive Statistics of the PDT Mean Scores in the Delayed Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	32.06	3.172	30.43	33.69	24.00	35.00
COG	17	29.65	2.668	28.28	31.02	22.00	33.00
NCG	17	26.59	2.647	25.23	27.95	22.00	30.00
Total	51	29.43	3.585	28.42	30.44	22.00	35.00

[a] The maximum possible scores were 36.

Figure 4.3 displays mean differences between the three tests across the three groups.

The overall scores were improved after instruction in all groups in the immediate posttest. CNG showed the greatest improvement, followed by COG and then NCG. The CNG mean increased by 10.59, whereas the COG mean increased by 10.29.

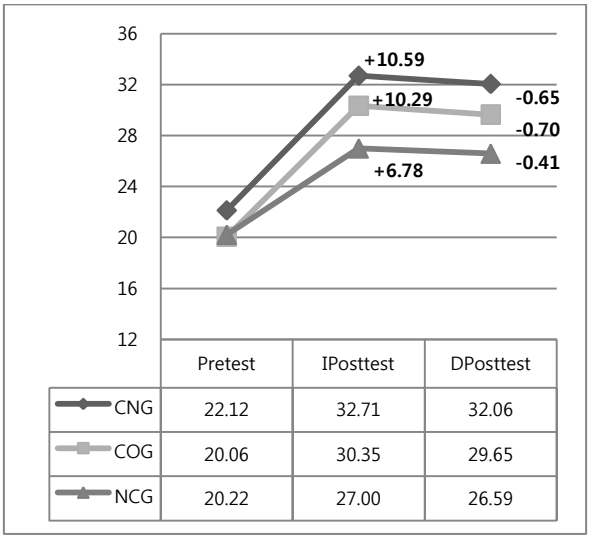


FIGURE 4.3

PDT Mean Differences Between the Three Tests by the Groups

The construction-based groups maintained higher scores in the delayed posttest, whereas the scores of the non-constructional group remained low. From the pretest to the delayed posttest, CNG gains were greatest at 9.94, followed by COG gains at 9.59, and NCG gains at 6.37.

As displayed in Table 4.18, there was a significant interaction of group with test sessions, $F(4, 96) = 4.249$, $p = .003$, as well as test sessions $F(2, 96) = 242.250$, $p = .000$.

TABLE 4.18

A Repeated-measures ANOVA of the PDT Mean Scores

	Source	df	MS	F	Sig.
Within-Subjects	time	2	1358.636	242.250	.000*
	time * group	4	23.829	4.249	.003*
	Error (time)	96	5.608		
Between-Subjects	Group	2	242.155	13.593	.000*
	Error	48	17.814		

TABLE 4.19

One-way ANOVA Summary of the PDT Mean Scores in the Immediate Posttest

Source	SS	df	MS	F	Sig.
Between Groups	279.569	2	139.784	25.472	.000*
Within Groups	263.412	48	5.488		
Total	542.980	50			

TABLE 4.20

One-way ANOVA Summary of the PDT Mean Scores in the Delayed Posttest

Source	SS	df	MS	F	Sig.
Between Groups	255.569	2	127.784	15.852	.000*
Within Groups	386.941	48	8.061		
Total	642.510	50			

The groups differed significantly both in the immediate posttest ($F(2, 48) = 25.472$, $p = .000$) and in the delayed posttest ($F(2, 48) = 15.852$, $p = .000$). Tukey post-hoc test revealed that there were significant differences across the groups in

the two posttests. This indicates that the construction instruction as well as the constructional networks had significant effects on the learners' sentence production in the immediate posttest. Notably, the network-based instruction had a delayed effect on the learners' improvements in sentence production.

The descriptive statistics of each ASC together with the ANOVA results in the pretest is presented in Table 4.21. There were no significant differences in the group means for each type of ASCs.

TABLE 4.21

PDT Results of ASCs in the Pretest

ASCs (Maximum Score)		**CNG n=17**		**COG n=17**		**NCG n=17**		**F**	***Sig.***
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		3.59	.870	3.18	1.131	3.34	.730	.852	.433
IR (6)		4.29	1.160	4.29	1.105	4.53	1.068	.254	.777
T (6)		5.65	.606	5.24	.752	4.94	1.249	2.572	.087
CM (6)		4.00	.866	3.59	1.176	3.12	1.364	2.49	.094
DI (6)	DOD(4)	1.53	.800	1.12	.697	1.47	.717	1.543	.224
	PD (2)	0.82	.728	1.00	.612	1.29	.686	2.096	.134
R (6)		2.24	1.091	1.65	1.169	1.53	1.281	1.737	.187

*DOD: Double Object Dative, PD: Prepositional Dative

TABLE 4.22

PDT Results of ASCs in the Immediate Posttest

ASCs (Maximum Score)		CNG N=17		COG N=17		NCG N=17		F	*Sig.*
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		5.76	.437	5.76	.437	4.94	.899	9.679	.000*
IR (6)		5.76	.562	5.94	.243	5.71	.588	1.061	.354
T (6)		6.00	.000	6.00	.000	5.94	.243	1.000	.375
CM (6)		5.76	.562	5.65	.493	4.53	.943	16.365	.000*
DI (6)	DOD(4)	3.53	.717	1.53	.800	2.00	.791	31.339	.000*
	PD (2)	1.82	.393	1.76	.437	1.53	.624	1.68	.197
R (6)		4.06	1.249	3.71	1.105	2.35	.996	10.963	.000*

The group effects were significant in the intransitive-motion, caused-motion, double object dative, and resultative constructions in the immediate posttest.

TABLE 4.23

PDT Results of ASCs in the Delayed Posttest

ASCs (Maximum Score)		CNG N=17		COG N=17		NCG N=17		F	*Sig.*
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		5.88	.332	5.82	.529	4.65	.996	17.915	.000*
IR (6)		5.59	.795	5.65	.606	5.35	.702	.828	.443
T (6)		6.00	.000	6.00	.000	5.94	.243	1.000	.375
CM (6)		5.65	.606	5.76	.562	5.12	.781	4.682	.014*
DI (6)	DOD(4)	3.47	.943	2.29	.686	1.94	.748	17.042	.000*
	PD (2)	1.82	.393	1.47	.717	1.41	.618	2.406	.101
R (6)		3.65	1.367	2.65	1.618	2.18	.951	5.337	.008*

Overall, the construction-based groups sustained their higher scores for each ASC from the immediate posttest to the delayed posttest. Table 4.23 shows that the differences among the groups were significant except for the intransitive-resultative, transitive construction, and prepositional dative constructions.

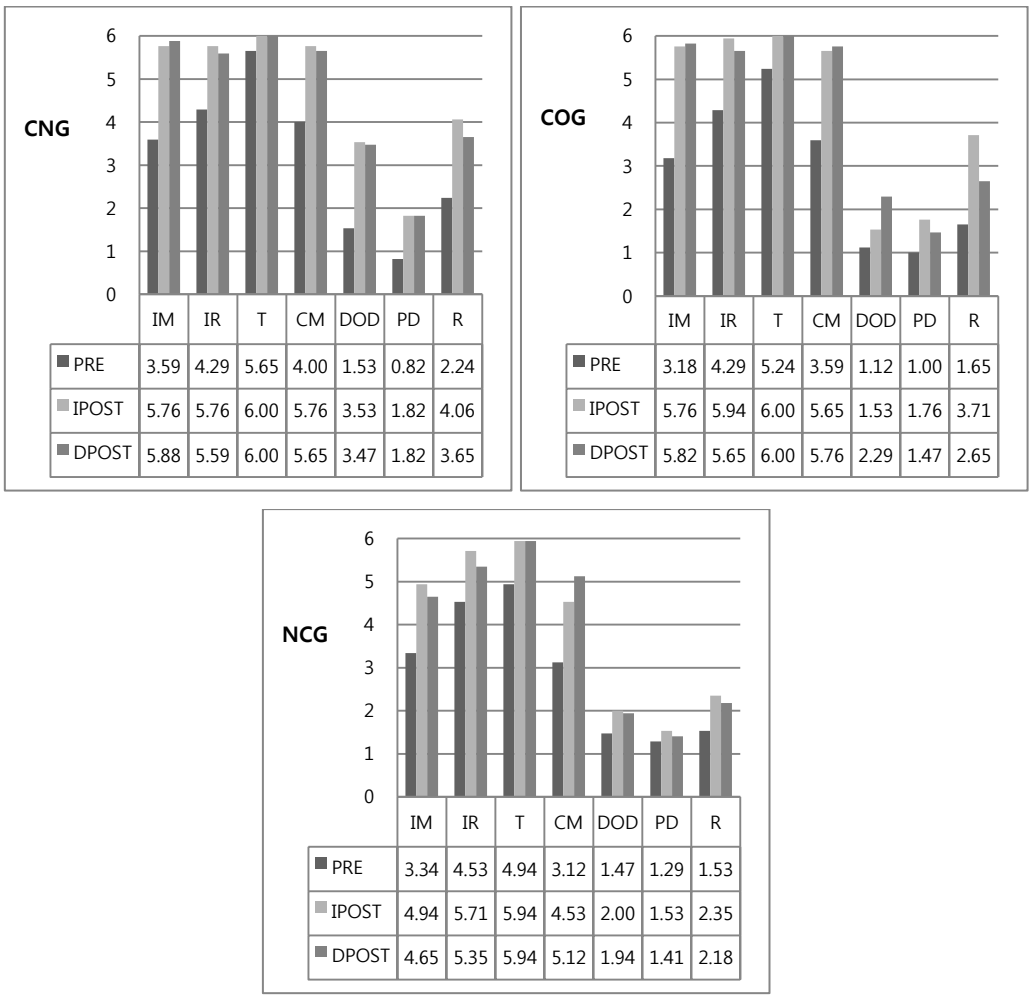


FIGURE 4.4

PDT Mean Scores of ASCs by the Groups Across the Test Sessions

TABLE 4.24

PDT Results of Tukey Post-hoc Test on ASCs in the Immediate Posttest

ASCs	(I) Group	(J) Group	Mean Difference	Sig.
IM	NCG	COG	-.824*	.001*
		CNG	-.824*	.001*
	COG	CNG	.000	1.000
CM	NCG	COG	-1.118*	.000*
		CNG	-1.235*	.000*
	COG	CNG	-.118	.875
DI DOD	NCG	COG	.471	.187
		CNG	-1.529*	.000*
	COG	CNG	-2.000*	.000*
R	NCG	COG	-1.353*	.003*
		CNG	-1.706*	.000*
	COG	CNG	-.353	.632

In the immediate posttest, there were significant differences between the construction-based groups and the non-constructional group in the intransitive-motion, caused-motion and resultative constructions. This indicates that the construction-based instruction played a significant role in improving the production of these constructions. Significant differences were found between the network-based group and the non-networked groups in the double object dative construction, implying network effects.

TABLE 4.25

PDT Results of Tukey Post-hoc Test on ASCs in the Delayed Posttest

ASCs	(I) Group	(J) Group	Mean Difference	Sig.
IM	NCG	COG	-1.176*	.000*
		CNG	-1.235*	.000*
	COG	CNG	-.059	.965
CM	NCG	COG	-.647*	.016*
		CNG	-.677*	.004*
	COG	CNG	.118	.861
DI DOD	NCG	COG	-.353	.410
		CNG	-1.529*	.000*
	COG	CNG	-1.176*	.000*
R	NCG	COG	-.471	.566
		CNG	-1.471*	.007*
	COG	CNG	-1.000	.086

For the intransitive-motion and caused-motion constructions in the delayed posttest, there were significant differences only between the construction-based groups and the non-constructional group. With reference to double object construction, network effects were significant.

4.1.3 Results of GWT

The guided writing task was administered to see whether the three groups differed in their productive use of ASCs. Table 4.26 shows the descriptive

statistics of the GWT mean scores in the pretest. The three groups were homogeneous in the pretest.

TABLE 4.26

Descriptive Statistics of the GWT Group Means in the Pretest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	19.18	6.347	15.91	22.440	9.00	30.00
COG	17	19.06	6.149	15.90	22.220	10.00	30.00
NCG	17	17.47	4.758	15.02	19.917	10.00	28.00
Total	51	18.57	5.732	16.96	20.181	9.00	30.00

TABLE 4.27

One-way ANOVA Summary of the GWT Group Means in the Pretest

Source	SS	df	MS	F	Sig.
Between Groups	30.863	2	15.431	.460	.634
Within Groups	1611.647	48	33.576		
Total	1642.510	50			

As shown in Tables 4.28 and 4.29, CNG performed best (M = 32.29, SD = 1.929 for the immediate posttest; M = 32.24, SD = 1.693 for the delayed posttest), whereas NCG performed worst (M = 24.35, SD = 5.350 for the immediate posttest; M = 23.35, SD = 5.745 for the delayed posttest).

TABLE 4.28

Descriptive Statistics of the GWT Group Mean s in the Immediate Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	32.29	1.929	31.30	33.27	28.00	34.00
COG	17	29.41	3.537	27.59	31.23	19.00	33.00
NCG	17	24.35	5.350	21.60	27.10	14.00	31.00
Total	51	28.68	5.034	27.27	30.10	14.00	34.00

TABLE 4.29

Descriptive Statistics of the GWT Group Mean s in the Delayed Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	32.24	1.693	31.48	33.22	29.00	34.00
COG	17	29.35	3.022	28.03	31.14	20.00	32.00
NCG	17	23.35	5.745	22.63	28.54	14.00	33.00
Total	51	28.31	4.719	27.85	30.50	14.00	34.00

The use of ASCs was enhanced after instruction in all groups in the immediate posttest. CNG demonstrated the greatest improvement, followed by COG and then NCG. The CNG mean increased by 13.11 whereas the COG mean increased by 10.35.

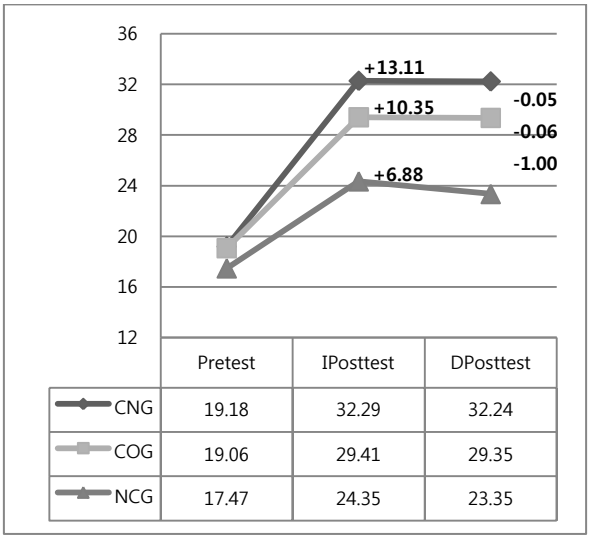


FIGURE 4.5

GWT Mean Differences Between the Three Tests by the Groups

While the construction-based groups maintained higher scores in the delayed posttest, the low scores of the non-constructional group remained unchanged. From the pretest to the delayed posttest, CNG gains were greatest at 13.06, followed by COG gains at 10.29, and NCG gains at 5.88.

TABLE 4.30

A Repeated-measures ANOVA of GWT

	Source	df	MS	F	Sig.
Within-Subjects	time	2	2446.505	173.047	.000*
	time * group	4	95.636	6.765	.001*
	Error (time)	96	14.138		
Between-Subjects	Group	2	392.830	8.948	.000*
	Error	48	43.900		

As shown in Table 4.30, there was a significant interaction of group with test sessions, F(4, 96) = 6.765, *p* = .001, as well as test sessions F(2, 96) = 173.047, *p* = .000.

TABLE 4.31

One-way ANOVA Summary of the GWT Group Means in the Immediate Posttest

Source	SS	df	MS	F	Sig.
Between Groups	549.451	2	274.725	18.378	.000*
Within Groups	717.529	48	14.949		
Total	1266.980	50			

TABLE 4.32

One-way ANOVA Summary of the GWT Group Means in the Delayed Posttest

Source	SS	df	MS	F	Sig.
Between Groups	698.157	2	349.078	26.394	.000*
Within Groups	634.824	48	13.225		
Total	1332.980	50			

The group comparisons by one-way ANOVA corroborated the groups' significant differences both in the immediate posttest (F(2, 48) = 18.378, *p* = .000) and in the delayed posttest (F(2, 48) = 26.394, *p* = .000). Significant differences were found only between the construction-based groups (CNG & COG) and the non-constructional group (NCG) (*p* = .000 in both cases) in the two posttests.

When the groups' performance was compared by each ASC, the three groups were homogeneous in the pretest, as shown in Table 4.33.

TABLE 4.33

GWT Results of ASCs in the Pretest

ASCs	CNG n=17		COG n=17		NCG n=17		F	*Sig.*
	M	SD	M	SD	M	SD		
IM	2.82	1.811	3.12	1.616	3.24	1.300	.303	.740
IR	1.47	.717	1.47	.800	1.65	.493	.379	.687
T	7.47	2.211	6.71	1.929	6.24	1.751	1.698	.194
CM	3.88	1.900	3.29	2.085	2.71	1.404	1.778	.180
DI DOD	.65	.862	.53	.717	.35	.702	.639	.532
R	1.53	1.505	2.47	1.807	1.65	1.801	1.529	.227

Table 4.34 shows that there were significant differences among the groups in the immediate posttest except for the intransitive-resultative construction ($F(2, 48) = .865$, $p = .428$).

The networked construction group performed best, followed by the construction-only group, and then the non-constructional group in the delayed posttest, maintaining the same order as in the immediate posttest. As revealed in Table 4.35, the differences among the groups in GWT were significant except for the intransitive-resultative and double object dative constructions.

TABLE 4.34

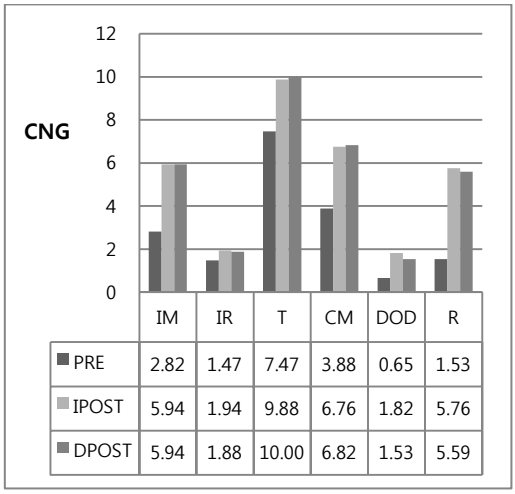
GWT Results of ASCs in the Immediate Posttest

ASCs	CNG n=17		COG n=17		NCG n=17		F	*Sig.*
	M	*SD*	*M*	*SD*	*M*	*SD*		
IM	5.94	.243	5.41	.795	4.35	1.320	13.704	.000*
IR	1.94	.243	1.94	.243	1.82	.393	.865	.428
T	9.88	.485	9.47	1.125	8.06	2.193	7.394	.002*
CM	6.76	.437	6.12	.993	4.71	1.448	17.276	.000*
DI DOD	1.82	.529	1.12	.993	1.06	.899	4.454	.017*
R	5.76	1.091	4.47	1.281	3.41	1.543	13.585	.000*

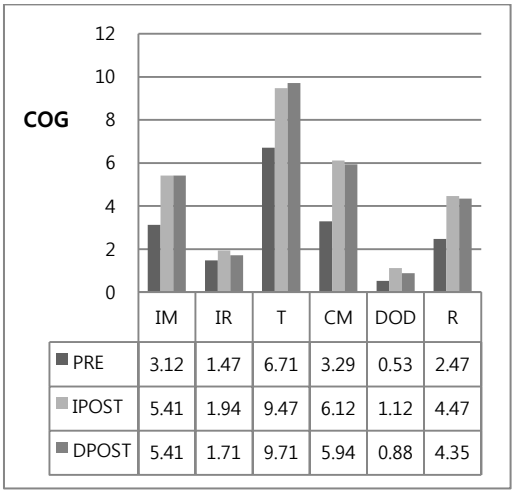
TABLE 4.35

GWT Results of ASCs in the Delayed Posttest

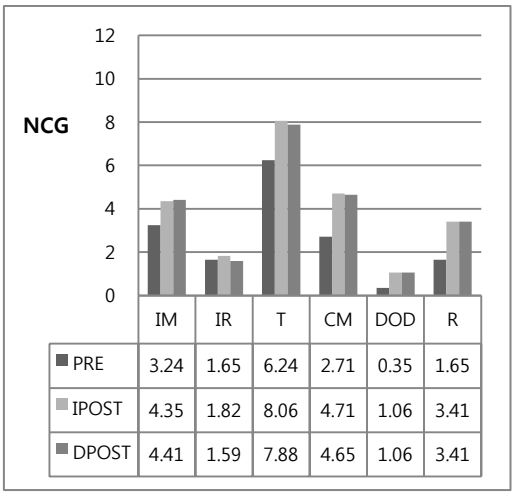
ASCs	CNG n=17		COG n=17		NCG n=17		F	*Sig.*
	M	*SD*	*M*	*SD*	*M*	*SD*		
IM	5.94	.243	5.41	.795	4.41	1.326	12.565	.000*
IR	1.88	.332	1.71	.470	1.59	.618	1.217	.305
T	10.00	.000	9.71	.985	7.88	1.728	6.354	.000*
CM	6.82	.393	5.94	.966	4.65	1.455	11.624	.000*
DI DOD	1.53	.874	.88	.928	1.06	.827	2.471	.095
R	5.59	1.460	4.35	1.222	3.41	2.093	7.589	.000*



	IM	IR	T	CM	DOD	R
PRE	2.82	1.47	7.47	3.88	0.65	1.53
IPOST	5.94	1.94	9.88	6.76	1.82	5.76
DPOST	5.94	1.88	10.00	6.82	1.53	5.59



	IM	IR	T	CM	DOD	R
PRE	3.12	1.47	6.71	3.29	0.53	2.47
IPOST	5.41	1.94	9.47	6.12	1.12	4.47
DPOST	5.41	1.71	9.71	5.94	0.88	4.35



	IM	IR	T	CM	DOD	R
PRE	3.24	1.65	6.24	2.71	0.35	1.65
IPOST	4.35	1.82	8.06	4.71	1.06	3.41
DPOST	4.41	1.59	7.88	4.65	1.06	3.41

FIGURE 4.6

GWT Mean Scores of ASCs by the Groups Across the Test Sessions

Table 4.36 shows that for each of the intransitive-motion, transitive, and caused-motion constructions, there were significant differences between the construction-based groups and the non-constructional group in the immediate posttest. Meanwhile, in regard to the double object dative and resultative constructions, not only were there significant differences between CNG and

NCG, but also between CNG and COG. This suggests that the networked-based instruction was most effective in helping learners to produce these constructions.

TABLE 4.36

GWT Results of Tukey Post-hoc Test on ASCs in the Immediate Posttest

ASCs	(I) Group	(J) Group	Mean Difference	Sig.
IM	NCG	COG	-1.059*	.004*
		CNG	-1.589*	.000*
	COG	CNG	-.529	.211
T	NCG	COG	-1.412*	.018*
		CNG	-1.824*	.002*
	COG	CNG	-.412	.688
CM	NCG	COG	-1.412*	.001*
		CNG	-2.059*	.000*
	COG	CNG	-.647	.178
DI DOD	NCG	COG	-.059	.977
		CNG	-.765*	.027*
	COG	CNG	-.706*	.044*
R	NCG	COG	-1.059	.060
		CNG	-2.353*	.000*
	COG	CNG	-1.294*	.017*

While the construction-based groups sustained their greater production in the delayed posttest, the non-constructional group's poor performance remained unchanged. For the intransitive-motion, transitive, caused-motion, and resultative constructions, there were significant differences only between the construction-

based groups and the non-constructional group. Significantly, there were significant differences not only between CNG and NCG, but also between CNG and COG in the double object dative construction, indicating the effects of the network-based instruction.

TABLE 4.37

GWT Results of Tukey Post-hoc Test on ASCs in the Delayed Posttest

ASCs	(I) Group	(J) Group	Mean Difference	Sig.
IM	NCG	COG	-1.235*	.000*
		CNG	-1.765*	.000*
	COG	CNG	-.529	.199
T	NCG	COG	-1.182	.000*
		CNG	-2.118*	.000*
	COG	CNG	-.294	.737
CM	NCG	COG	-1.294*	.002*
		CNG	-2.177*	.000*
	COG	CNG	-8.824	.042
DI DOD	NCG	COG	-.0589	.977
		CNG	-.765*	.027*
	COG	CNG	-.706*	.044*
R	NCG	COG	-1.294	.045*
		CNG	-2.530*	.000*
	COG	CNG	-1.235	.059

4.1.4 Results of GJT

The grammaticality judgment task was performed to see whether the three groups differed with respect to the learners' knowledge of ASCs. The higher gain scores were assumed to indicate the learners' more accurate implicit knowledge of ASCs.

TABLE 4.38

Descriptive Statistics of the GJT Mean Scores in the Pretest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	26.53[a]	4.155	24.39	28.67	17.00	33.00
COG	17	25.00	3.623	23.14	26.86	19.00	30.00
NCG	17	25.12	3.498	23.32	26.92	17.00	30.00
Total	51	25.55	3.759	24.49	26.61	17.00	33.00

[a] The maximum possible scores were 36.

TABLE 4.39

One-way ANOVA Summary of the GJT Mean Scores in the Pretest

Source	SS	df	MS	F	Sig.
Between Groups	24.627	2	12.314	.867	.427
Within Groups	682.000	48	14.208		
Total	706.627	50			

The three groups were homogeneous prior to the instructional treatments.

TABLE 4.40

Descriptive Statistics of the GJT Mean Scores in the Immediate Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	33.41[a]	1.176	32.81	34.02	31	35
COG	17	31.82	2.506	30.54	33.11	27	36
NCG	17	28.35	2.914	26.85	29.85	22	33
Total	51	31.20	3.118	30.32	32.07	22	36

[a] The maximum possible scores were 36.

TABLE 4.41

Descriptive Statistics of the GJT Mean Scores in the Delayed Posttest

Group	n	Mean	SD	95% Confidence Interval for Mean		Min	Max
				Lower Bound	Upper Bound		
CNG	17	32.47[a]	2.528	31.17	33.77	26	36
COG	17	28.82	2.186	27.70	29.95	26	33
NCG	17	26.82	2.351	25.61	28.03	23	31
Total	51	29.37	3.304	28.44	30.30	23	36

[a] The maximum possible scores were 36.

While CNG performed best (M = 33.41, SD = 1.176 for the immediate posttest; M=32.47, SD= 2.528 for the delayed posttest), NCG performed worst (M = 28.35, SD = 2.914 for the immediate posttest; M=26.82, SD= 2.351 for the delayed posttest).

Figure 4.7 displays mean differences between the three tests across the three groups.

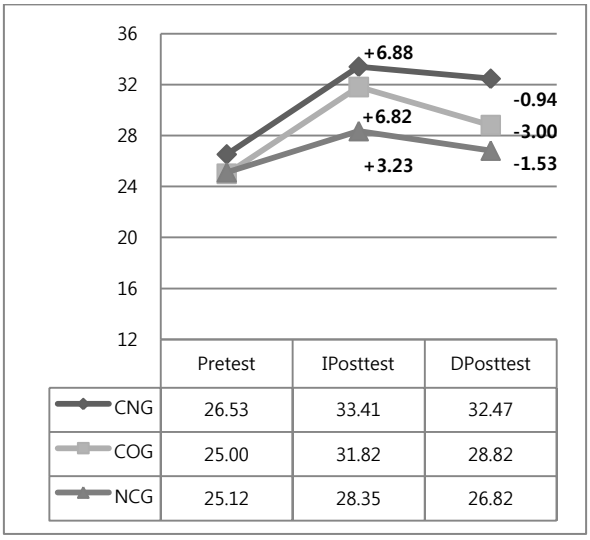


FIGURE 4.7

GJT Mean Differences Between the Three Tests by the Groups

CNG demonstrated the highest scores, followed by COG and NCG. The CNG mean increased by 6.88, whereas the COG mean increased by 6.82.

Changes from the immediate posttest to the delayed posttest were greater for COG than for CNG, with COG decreasing by 3.00 and CNG 0.94. Although there were significant differences between the three groups, COG was not as successful as CNG, while CNG maintained their higher scores in the delayed posttest.

TABLE 4.42

A Repeated-measures ANOVA of the GJT Mean Scores

	Source	df	MS	F	Sig.
Within-Subjects	time	2	423.588	74.962	.000*
	time * group	4	28.255	5.000	.001*
	Error (time)	96	5.651		
Between-Subjects	Group	2	208. 961	15.079	.000*
	Error	48	13.858		

There was a significant interaction effect of group with test sessions, F(4, 96) = 5.000, *p* = .001, as well as test sessions F(2, 96) = 74.962, *p* = .000.

TABLE 4.43

One-way ANOVA Summary of the GJT Total Scores in the Immediate Posttest

Source	SS	df	MS	F	Sig.
Between Groups	227.569	2	113.784	21.131	.000*
Within Groups	258.471	48	5.385		
Total	486.039	50			

The groups differed significantly in the immediate posttest (F(2, 48) = 21.131, *p* = .000). There were significant differences between CNG and NCG (*p* = .000) and between COG and NCG (*p* = .000). However, there was no significant difference between CNG and COG (*p* = .124).

TABLE 4.44

One-way ANOVA Summary of the GJT Total Scores in the Delayed Posttest

Source	SS	df	MS	F	Sig.
Between Groups	278.745	2	139.373	25.039	.000*
Within Groups	267.176	48	5.566		
Total	545.922	50			

The groups differed significantly in the delayed posttest (F(2, 48) = 25.039, *p* = .000). There were significant differences across the groups: between CNG and NCG (*p* = .000), between COG and NCG (*p* = .044), and between CNG and COG (*p* = .000). This indicated that the construction instruction using network was the most effective in the persistent improvements in the comprehension of the sentences.

Table 4.45 shows that all of the three groups turned out to be homogeneous in the pretest. Tables 4.46 and 4.47 exhibit the descriptive statistics along with the ANOVA results of each ASC in the two posttests. Figure 4.8 represents how the learners performed each type of ASCs across the three tests.

The three types of instructional treatments had meaningful effects on the learners' comprehension of the sentences in the immediate posttest. However, as shown in Table 4.46, the group effect was significant only in the intransitive-motion, caused-motion, double object dative, and resultative constructions.

TABLE 4.45

GJT Results of ASCs in the Pretest

ASCs (Maximum Score)		CNG n=17		COG n=17		NCG n=17		F	*Sig.*
		M	*SD*	*M*	*SD*	*M*	*SD*		
IM (6)		4.41	1.460	3.82	1.185	3.71	1.047	1.575	.218
IR (6)		5.29	.849	5.41	.712	5.47	.624	.255	.776
T (6)		4.41	.712	3.94	.827	4.06	1.345	1.020	.368
CM (6)		3.71	1.047	3.53	1.068	3.47	1.068	.227	.798
DI (6)	DOD (2)	1.71	.470	1.41	.795	1.41	.624	.899	.414
	PD (4)	2.76	.903	2.35	.702	2.65	.702	1.273	.289
R (6)		4.24	1.200	4.53	1.586	4.24	1.300	.260	.772

TABLE 4.46

GJT Results of ASCs in the Immediate Posttest

ASCs (Maximum Score)		CNG n=17		COG n=17		NCG n=17		F	*Sig.*
		M	*SD*	*M*	*SD*	*M*	*SD*		
IM (6)		5.76	.437	5.71	.588	4.82	1.185	7.303	.002*
IR (6)		6.00	.000	5.94	.243	5.94	.243	.500	.610
T (6)		5.47	.624	5.18	.809	4.94	1.197	2.214	.120
CM (6)		5.53	.624	5.12	.857	3.59	1.004	25.021	.000*
DI (6)	DOD (2)	1.82	.393	1.65	.717	1.53	.702	.962	.389
	PD (4)	3.00	.935	2.76	1.033	2.59	1.176	.655	.524
R (6)		5.71	.686	5.59	.712	4.82	.883	6.661	.003*

TABLE 4.47

GJT Results of ASCs in the Delayed Posttest

ASCs (Maximum Score)		CNG n=17		COG n=17		NCG n=17		F	*Sig.*
		M	***SD***	***M***	***SD***	***M***	***SD***		
IM (6)		5.24	.562	4.82	.883	4.76	.562	2.375	.104
IR (6)		5.94	.243	5.53	.800	5.53	.800	2.154	.127
T (6)		5.12	.781	4.82	.931	4.65	.951	1.210	.307
CM (6)		5.29	.686	5.00	1.000	3.82	1.074	11.765	.000*
DI (6)	DOD (2)	1.88	.485	1.76	.562	1.41	.507	3.782	.030*
	PD (4)	3.35	.606	1.88	.697	2.00	.935	19.711	.000*
R (6)		5.65	.786	5.18	.883	4.47	.943	7.820	.001*

On the other hand, in the intransitive-resultative, transitive, and prepositional dative constructions each, there were no significant differences among the groups.

In the delayed posttest, CNG performed best, followed by COG, and NCG, sustaining the same order as in the immediate posttest. Overall, the construction-based groups kept their higher scores for each ASC from the immediate posttest to the delayed posttest. The differences among the groups in GJT were significant except for the intransitive-motion, intransitive-resultative, and transitive constructions.

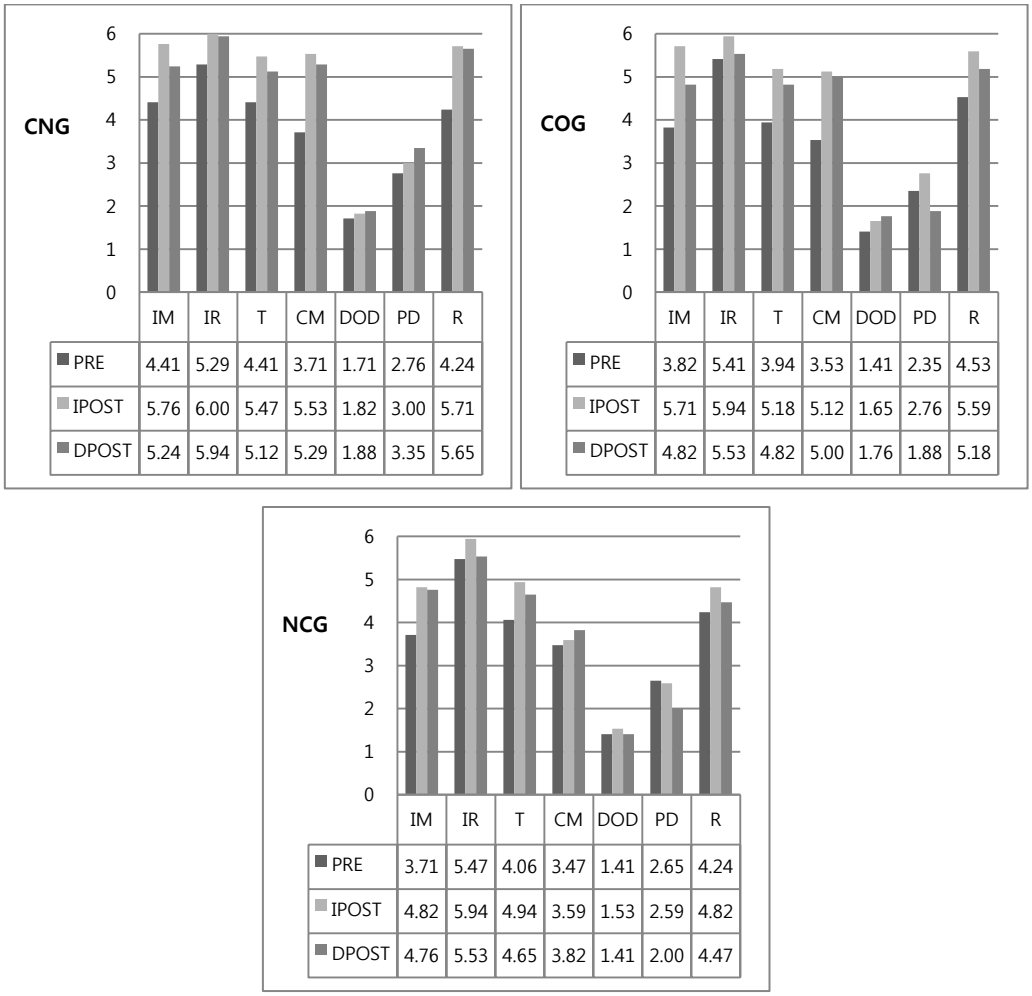


FIGURE 4.8

GJT Mean Scores of ASCs by the Groups Across the Test Sessions

Table 4.48 shows significant differences between the construction-based groups and the non-constructional group with regard to the intransitive-motion, caused-motion, and resultative constructions.

TABLE 4.48

GJT Results of Tukey Post-hoc Test on ASCs in the Immediate Posttest

ASCs	(I) Group	(J) Group	Mean Difference	Sig.
IM	NCG	COG	-.882*	.007*
		CNG	-.941*	.004*
	COG	CNG	-.059	.975
CM	NCG	COG	-1.529*	.000*
		CNG	-1.941*	.000*
	COG	CNG	-.412	.337
R	NCG	COG	-.765*	.015*
		CNG	-.882*	.004*
	COG	CNG	-.118	.895

The construction-based instruction was more likely to enable the learners to internalize the two complex constructions (CM & R) than the non-constructional group.

In the delayed posttest, as shown in Table 4.49, there were significant differences between the construction-based groups and the non-constructional group in the caused-motion construction. This indicates that the effects of the construction-based instruction were significant; however, network effects were not. Notably, network effects were significant only in the prepositional dative construction.

TABLE 4.49

GJT Results of Tukey Post-hoc Test on ASCs in the Delayed Posttest

ASCs		(I) Group	(J) Group	Mean Difference	Sig.
CM		NCG	COG	-1.176*	.002*
			CNG	-1.471*	.000*
		COG	CNG	-.294	.633
DI	DOD	NCG	COG	-.353	.128
			CNG	-.471*	.029*
		COG	CNG	-.118	.787
	PD	NCG	COG	.118	.894
			CNG	-1.353*	.000*
		COG	CNG	-1.471*	.000*
R		NCG	COG	-.706	.058
			CNG	-1.176*	.001*
		COG	CNG	-.471	.268

4.2 Discussion

This section discusses the research findings and explores the issues posed by the research questions. It begins with the discussion of the overall effects of the construction-based instruction on the learners' sentence production ability in the two posttests. The relative effects of the networked construction instruction and the construction-only instruction are also discussed. Furthermore, this section discusses the salient effects of the construction-based instruction on the learners' improvements in constructional productivity and accuracy.

4.2.1 The effects of the construction-based instruction

The two types of construction-based instruction turned out to significantly affect Korean college English learners' improvement of sentence production in the immediate and delayed posttests. The non-constructional group (NCG) also experienced some enhancement in sentence production; however, the increase was very low, compared with the observed gains in the construction-based groups (CNG & COG). It should be noted that since all groups were exposed to the same set of sentences and the instructional time was also controlled, it was not likely that the higher enhancement obtained by the construction-based groups was attributed to the availability of additional instructional time.

The findings from the sentence production tasks (i. e., ETT, PDT, and GWT) showed that the construction-centered processing was more effective than the verb-centered one in EFL learners improving their sentence production. In addition, the results of the grammaticality judgment task can be seen to give substantial evidence that the construction-based groups successfully obtained constructional knowledge. The explicit explanation on ASCs seemed to be helpful in facilitating the construction-based groups to express propositional meanings or scenes using sentence structures. Of course, the possibility cannot be ruled out that the effectiveness of the instruction may be related to the fact that the learners were Korean college students who were generally familiar with

explicit learning or knowledge. It seems reasonable to conclude that constructional knowledge was obtained through the construction-based instruction and played a significant role in the learners' sentence production ability.

4.2.2 Relative effects of the two types of construction-based instruction

The second research question was concerned with the relative effects of the two types of construction-based instruction. More specifically, it examined to what extent the factor of "network" within the construction grammar framework affected the learners' development of sentence production.

The results of the immediate posttest revealed that, in general, there were no short-term network effects on the learners' sentence production ability. However, there were significant differences between the network-based group and the non-networked groups in the double object dative and resultative constructions. This may imply that the network-based instruction helped the learners to incorporate complex constructions into their existing constructional knowledge, lessening their cognitive loads.

On the other hand, the findings from the delayed posttest demonstrated that the networked-based instruction had a delayed effect on the learners'

improvement in sentence production. More specifically, there were significant differences between the network-based group and the non-networked groups in ETT, and between the three groups in PDT.

The constructional networks played a crucial role in maintaining treatment effects relatively longer as compared with the non-networked approach. CNG maintained their higher scores over a four week period, whereas COG was not as successful as CNG. NCG even returned to their lower pretest scores. It appeared that CNG was successful in efficiently storing the information on ASCs; that is, CNG seemed to obtain systematically organized constructional knowledge. This was supported by the GJT results of the delayed posttest, in which CNG outperformed both COG and NCG. The network-based instruction was seen to facilitate the learners' access to and retrieval of the constructional knowledge in their sentence production.

In sum, there was a general tendency for the network-based group (CNG) to outperform the non-networked groups (COG and NCG) only in the delayed posttest.

4.2.3 Salient effects of the construction-based instruction

An exploration of prominent effects induced by the construction-based instructional treatments was undertaken in order to obtain a better understanding

of the instructional effects on the improvement in the learners' sentence production ability. This is largely concerned with the productivity and accuracy of the English argument structure constructions.

4.2.3.1 Productivity

In order to obtain a deeper understanding of how the construction-based instruction impacts the improvement in the learners' sentence production ability, the present study investigated the learners' writing samples collected in the two production tasks (i. e., ETT and PDT), especially focusing on changes in quantity of sentence production. The discussion is centered on changes both in the occurrence of *no response* and in the use of the light verb *get*.

As shown in Table 4.50, the frequency of *no response* decreased considerably in the construction-based groups in both posttests as opposed to that of the non-constructional group. This suggests that the construction-based groups actively attempted to generate ASCs.

TABLE 4.50

Frequency of *No Response* by the Groups Across the Test Sessions

CNG (/3672)			COG (/3672)			NCG (/3672)		
Pre (%)	**IPost* (%)**	**DPost (%)**	**Pre (%)**	**IPost (%)**	**DPost (%)**	**Pre (%)**	**IPost (%)**	**DPost (%)**
335 (9.1)	0 (0.0)	7 (0.2)	328 (8.9)	7 (0.2)	21 (0.6)	359 (9.8)	206 (5.6)	231 (6.3)

* IPost = Immediate Posttest, DPost = Delayed Posttest

It should be noted that the researcher tried to ensure that the learners in the present study were aware that the tasks they took on were part of the mid-term examination, encouraging their active and keen participation in the tasks. Thus, it was less likely that the results of *no response* were attributable to their laid-back attitudes towards these tasks.

An investigation into the use of the light verb *get* observed in ASCs may cast some light on the source of the large decrease in the percentage of *no response* in the construction-based groups. The frequency of ASCs in which the light verb *get* was used is shown in Table 4.51, which is also graphically demonstrated in Figure 4.9.

TABLE 4.51

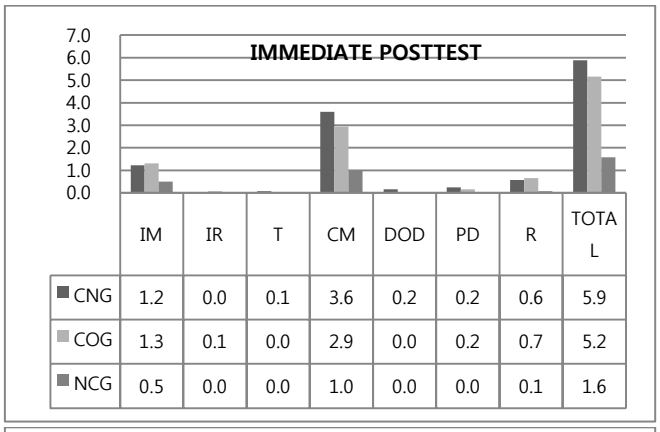
Frequency of Each ASC Type Using the Light Verb *Get* by the Groups in the Two Posttests

ASCs	Immediate Posttest			Delayed Posttest		
	CNG (%)	COG (%)	NCG (%)	CNG (%)	COG (%)	NCG (%)
IM	43 (1.2)	46 (1.3)	18 (0.5)	21 (0.6)	43 (1.2)	11 (0.3)
IR	0 (0.0)	4 (0.1)	0 (0.0)	4 (0.1)	7 (0.2)	0 (0.0)
T	4 (0.1)	0 (0.0)	0 (0.0)	4 (0.1)	0 (0.0)	4 (0.1)
CM	128 (3.6)	103 (2.9)	36 (1.0)	143 (4.0)	121 (3.4)	46 (1.3)
DOD	7 (0.2)	0 (0.0)	0 (0.0)	7 (0.2)	7 (0.2)	0 (0.0)
PD	7 (0.2)	7 (0.2)	0 (0.0)	7 (0.2)	0 (0.0)	4 (0.1)
R	21 (0.6)	25 (0.7)	4 (0.1)	25 (0.7)	11 (0.3)	0 (0.0)
TOTAL	210 (5.9)	185 (5.2)	57 (1.6)	214 (6.0)	189 (5.3)	64 (1.8)

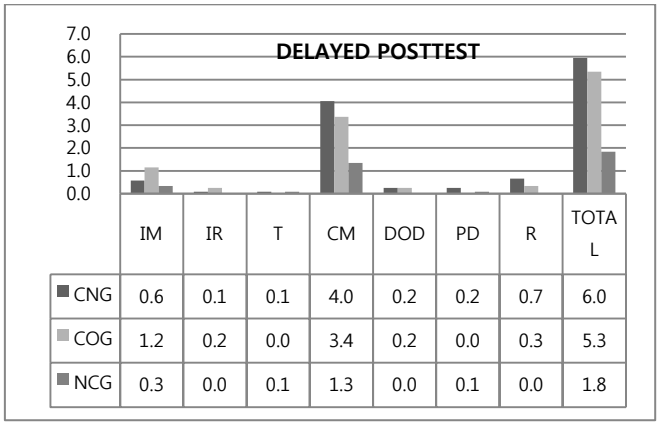
As light verbs are semantically ‘light’, they are able to fully represent the constructional meanings; this is assumed to play a facilitative role in the learners’ internalization of ASCs (Goldberg, 1999). The verb *get*, among the light verbs, is considered to be the most effective one in the acquisition of the ASCs as it can occur in almost all ASCs. It was presumed to serve as a useful means for the productive use of the target constructions due to its easy accessibility.

Table 4.51 shows that the construction-based groups made more frequent use of the general purpose verb than the non-constructional group in the two

posttests. Note that no occurrence of the verb was observable in the pretest.



	IM	IR	T	CM	DOD	PD	R	TOTAL
CNG	1.2	0.0	0.1	3.6	0.2	0.2	0.6	5.9
COG	1.3	0.1	0.0	2.9	0.0	0.2	0.7	5.2
NCG	0.5	0.0	0.0	1.0	0.0	0.0	0.1	1.6



	IM	IR	T	CM	DOD	PD	R	TOTAL
CNG	0.6	0.1	0.1	4.0	0.2	0.2	0.7	6.0
COG	1.2	0.2	0.0	3.4	0.2	0.0	0.3	5.3
NCG	0.3	0.0	0.1	1.3	0.0	0.1	0.0	1.8

FIGURE 4.9

Proportions of Each ASC Type Using the Light Verb *Get* by the Groups in the Two Posttests

The use of the light verb was conspicuous in the caused-motion construction, indicating that the learners internalized the construction successfully through the medium of the verb. In addition, the constructional networks seemed to be helpful in maintaining the use of the verb particularly in the resultative

construction. The learners were likely to use the light verb *get* whenever they had difficulty with the retrieval of appropriate heavy verbs in the timed tasks. It might also be possible that they were able to direct their attentional resources to the scenes or the propositional meanings of those complex constructions due to the reduced cognitive burden by the use of the light verb.

Once again, it is worth drawing attention to the way in which the scenes or propositional meanings one tries to describe or convey are mapped into their corresponding ASCs. The basic scenes or situations that we encounter in daily life have close ties with basic argument structures whose meanings are linked with those of ASCs. The connection between the scenes and the ASCs is assumed to enable language speakers to express the scenes effectively using ASCs. This process may provide an explanation for the findings that the construction-based groups showed a sharp decrease in the ratio of *no response* and a remarkable increase in the use of the light verb *get*. In other words, the constructional knowledge obtained through the construction-based instruction seems to have played a significant role in the learners' sentence production ability.

In order to obtain a clearer picture of the findings in relation to the verb *get*, an analysis was carried out as to how *no responses* in the pretest changed after the instructional treatments. Each of the test items that were left blank by the learners in the pretest was identified, and an examination was made to see how

the blanks changed in the immediate and delayed posttests. The analysis was performed only with correct answers. Their responses were classified into the following patterns: ASCs with the light verb *get*, ASCs with the relevant heavy verbs, and *no response*. Figure 4.10 presents the group percentage of *no response* according to patterns in the two posttests.

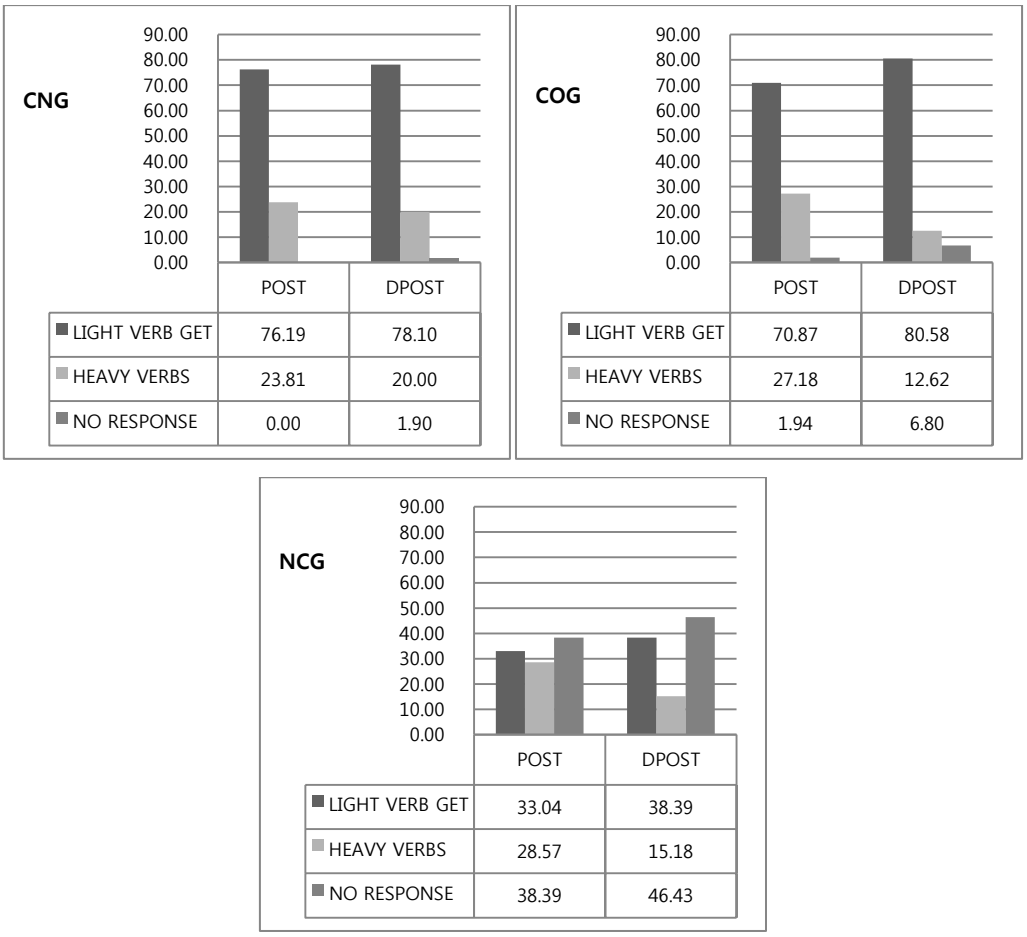


FIGURE 4.10

Proportions of Patterns of *No Response*

by the Groups in the Two Posttests

The construction-based groups used the light verb *get* more often than the relevant heavy verbs in producing ASCs in the two posttests. They had a strong tendency to make an excessive use of it. Nevertheless, considering that they had failed to formulate them in the pretest, the focal point of attention should be that they did make attempts to produce target constructions using linguistic resources available to them. In contrast, based on the fact that the non-constructional group left many test items blank in the posttests, they seemed to have difficulty in constructing the relevant sentence structures. The non-constructional group tended to be less active in using the light verb despite the fact that they were exposed to the usefulness of the verb as much as the experimental groups during instruction. This indicated that the role of the light verb can be more effective when it was presented to the learners within the construction-based approach.

4.2.3.2 Accuracy

So far, the discussion has been focused on the issue relating to constructional productivity. In order to gain a more comprehensive view of how the construction-based instruction has an influence on improvement in the learners' sentence production, it may be necessary to look into the learners' improvement in the accuracy.

The present study analyzed the learners' errors in the three production tasks

(i.e., ETT, PDT, and GWT). According to Ellis and Barkhuizen (2005), there are two ways of describing errors: *a linguistic error* and *a surface structure error*. The former invloves general categories relating to *basic sentence structure*, *verb complementaion*, *noun phrase*, *verb phrase*, and *prepositionla phrase*, and so forth. The latter includes *omission*, *addition*, *misinformation* (i.e., the use of the wrong form of the word or structure), and *misordering* (i.e., the incorrect placement of words). The two ways are not mutually exclusive but can be usefully combined in error description. Table 4.52 presents the error categories based on these two ways of error description.

Since Dulay and Burt's (1973, 1974) studies on the acquisition of grammatical morphemes, L2 learners' accuracy in grammatical morphemes have been a major concern of L2 development research. This may be partly because L2 learners tend to produce errors predominantly in these formal properties in spoken or written communication. More fundamentally, it may be related to the fact that L2 learners have already acquired the ability to structure meanings by means of syntactic forms.

However, Korean learners of English seem to have difficulty in formulating basic argument structures, let alone functional categories. Note that functional categories such as verbal inflections, plural-*s*, and articles cause little communication breakdowns due to their little semantic contribution to the overall sentence meaning.

TABLE 4.52

Error Categories

Linguistic Category	Surface Structure Category	Linguistic/Surface Structure Category
Noun phrase	Omission	Subject-omission
		Direct Object-omission
		Indirect Object-omission
		Complement-omission
Verb phrase		Verb-omission
Adjective phrase		Complement-omission
Preposition phrase		Preposition-omission
Verb phrase	Addition	Regularization*: be*-insertion
	Misordering (MO)	Misordering
Verb phrase	Misinformation (MI)	Subject-verb agreement
		Tense
		Progressive
Noun Phrase		Plural-*s*
Determiner Phrase		Article

From this view, it seems to be more meaningful to pay attention to the learners' accuracy in arguments structures than grammatical morphemes. Accurate suppliance of the verb-arguments for each ASC was the major concern of the error analysis. Table 4.53 presents the frequency of the error types by each group, leaving out 'grammatical morpheme errors'.

TABLE 4.53

Frequency of Error Types Except for Grammatical Morpheme Errors by Each Group

Error Types	CNG			COG			NCG		
	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)
S-omission	5 (0.1)	2 (0.1)	3 (0.1)	7 (0.2)	4 (0.1)	2 (0.1)	7 (0.2)	4 (0.1)	8 (0.2)
DO-omission	7 (0.2)	3 (0.1)	3 (0.1)	9 (0.3)	2 (0.1)	0 (0.1)	11 (0.3)	5 (0.1)	9 (0.3)
IO-omission	71 (2.0)	4 (0.1)	7 (0.2)	71 (2.0)	7 (0.2)	7 (0.2)	64 (1.8)	51 (1.4)	53 (1.5)
V-omission	7 (0.2)	1 (0.0)	2 (0.1)	8 (0.2)	2 (0.1)	2 (0.1)	4 (0.1)	4 (0.1)	6 (0.2)
C-omission	125 (3.5)	22 (0.6)	33 (0.9)	118 (3.3)	25 (0.7)	43 (1.2)	135 (3.8)	112 (3.1)	116 (3.3)
MO	78 (2.2)	4 (0.1)	7 (0.2)	64 (1.8)	7 (0.2)	11 (0.3)	85 (2.4)	54 (1.5)	60 (1.7)
P-omission	185 (5.2)	4 (0.1)	15 (0.4)	196 (5.5)	18 (0.5)	21 (0.6)	178 (5.0)	120 (3.3)	151 (4.3)
Be-insertion	136 (3.8)	22 (0.6)	11 (0.3)	125 (3.5)	4 (0.1)	14 (0.4)	146 (4.1)	105 (2.9)	112 (3.2)
Total number of utterances	3567	3672	3670	3569	3567	3562	3560	3629	3515

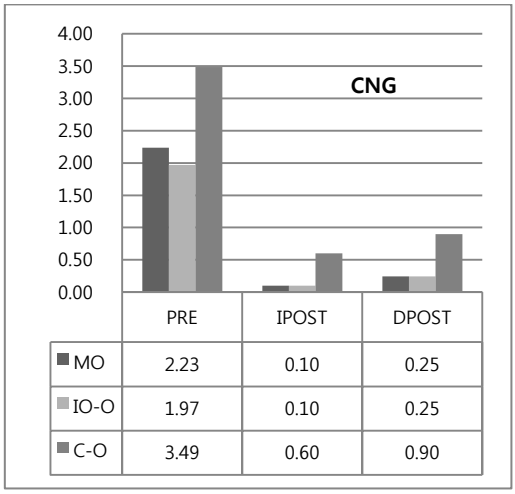
Among the error types presented in Table 4.53, the three error types (i.e., *subject-omission*, *direct object-omission*, and *verb-omission*) were less than 0.5%;

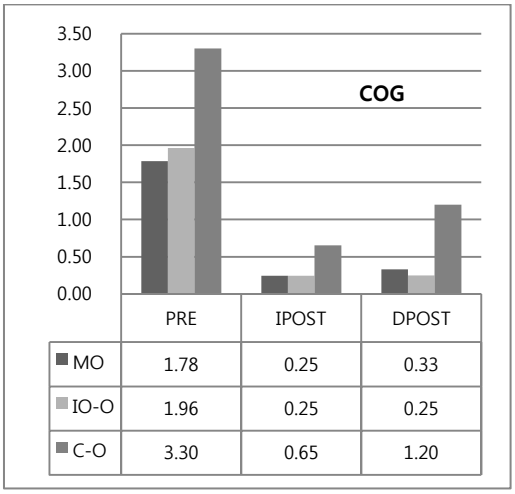
hence they were excluded from the analysis. On the other hand, as the error types of *preposition-omission* and *be-insertion* had little to do with constructional accuracy, the two types were also omitted; however, they are discussed in the last section due to their saliency. Consequently, the study focused on the following three error types: *misordering*, *indirect-object omission*, and *complement-omission*. The percentage of these three types by each group is presented in Table 4.54, which is also graphically shown in Figure 4.11.

TABLE 4.54

Frequency of the Error Types by the Groups Across the Test Sessions: *Misordering*, *Indirect Object-Omission*, and *Complement-Omission*

Error Types	CNG			COG			NCG		
	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)
MO	78 (2.2)	4 (0.1)	7 (0.2)	64 (1.8)	7 (0.2)	11 (0.3)	85 (2.4)	54 (1.5)	60 (1.7)
IO-omission	71 (2.0)	4 (0.1)	7 (0.2)	71 (2.0)	7 (0.2)	7 (0.2)	64 (1.8)	51 (1.4)	53 (1.5)
C-omission	125 (3.5)	22 (0.6)	33 (0.9)	118 (3.3)	25 (0.7)	43 (1.2)	135 (3.8)	112 (3.1)	116 (3.3)





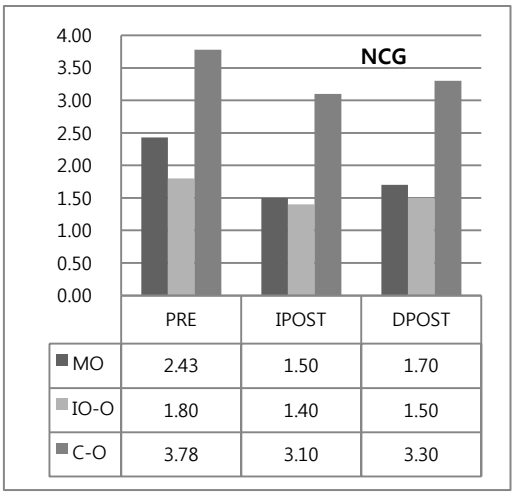


FIGURE 4.11

Proportion of the Error Types by the Groups Across the Test Sessions: *Misordering*, *Indirect Object-Omission*, and *Complement-Omission*

There was a sharp decrease in each of the errors in the construction-based groups (CNG & COG) in the immediate and delayed posttests, whereas there was a slight decrease in the non-constructional group (NCG).

The ‘misordering error’ is related to the incorrect placement of words, as in examples (1) through (4) below.

(1) He sent a love letter Sandy.	(CNG10, PDT, Pretest)
(2) I pushed into the cage into monkey.	(COG3, ETT, Pretest)
(3) She is painting blue the wall.	(NCG3, PDT, Pretest)
(4) James kicked open the door.	(NCG15, ETT, Pretest)

As demonstrated in Figure 4.11, it seems clear that the constructional instruction was effective in increasing the learners’ constructional accuracy. This may provide evidence that the learners obtained constructional knowledge through the construction-based instruction, which enabled them to yield target-like word order more effectively.

Regarding the argument-dropping phenomena such as ‘indirect object-omission’ and ‘complement-omission,’ the former was the most frequent error type of double object dative (DOD[20]) in the pretest, as in examples (5) through (7) below.

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[20] The ditransitive construction (DI) is subdivided into two constructions: double object dative (DOD) and prepositional dative (PD). The former has the structure of ‘SUBJ+V+OBJ (recipient)+OBJ (transferred object)’, with the central semantics of ‘X causes Y to receive Z’ and the latter ‘SUBJ+V+OBJ (transferred object)+OBL (direction plus goal)’, ‘X causes Y to move Z’. DOD is separated from PD in that it has the core meaning of ‘the actual successful transfer’, but PD merely implies ‘the change of location, more specifically transfer of ownership’. Thus PD is represented by a metaphorical extension of CM which is connected to IM in hierarchical networks.

(5) He kicked a ball. (CNG6, ETT, Pretest)

(6) She gave a present. (COG9, PDT, Pretest)

(7) Susan gives a coin. (NCG3, GWT, Pretest)

The construction-based groups made a sharp decrease in the error in the two posttests on the three production tasks, whereas the non-constructional group made a small decrease. This construction is one of the marked constructions for Korean EFL learners, causing considerable accessibility difficulties. This may be partly because the learners tended to prefer prepositional dative to double object dative on the grounds that, arguably, Korean dative construction has structural tendency of taking the form of prepositional dative rather than that of double object dative. The results indicate that the constructional knowledge helped them to correct the omission error effectively.

On the other hand, the ‘complement-omission’ was the most frequent error type of the resultative construction in the pretest, as in examples (8) through (10) below.

(8) She wiped the mirror. (CNG2, ETT, Pretest)

(9) Sandy shot him dying. (COG1, PDT, Pretest)

(10) She painted the roof with yellow. (NCG7, ETT, Pretest)

The resultative construction is believed to be the most difficult sentence structure for the learners to learn due to its structural complexity. It is defined structurally as 'SUBJ+V+OBJ+$COMP_{[ADJ]}$', with the core meaning of 'X CAUSES Y to BECOME Z'. It is connected with the caused-motion construction via a metaphorical extension link and with the intransitive-resultative construction through a subpart link in the hierarchical networks.

As shown in Table 5.5, only the construction-based groups were successful in reducing this error significantly in the immediate posttest as opposed to the non-constructional group. In addition, in the delayed posttest, the instructional effect was maintained better in the networked group than the construction-only group, indicating the long-term effects of the network-based instruction. Overall, it was evident that the construction-based instruction was effective for Korean EFL learners to obtain the constructional knowledge to the level that they were able to retrieve and use the most marked and complex structure.

4.2.3.3 Other salient errors

In addition to the error categories discussed above, there were two salient error types identified in the learners' production data in the pretest: 'preposition-omission' and '*be* insertion.' Both are regarded as the errors Korean learners of English often make in the acquisition of the target language.

The ‘preposition-omission’ error was observed only in the intransitive-motion (IM) and caused-motion (CM) constructions. The error type in the two constructions is exemplified in (11) through (16) below.

(11) She hikes the mountain.	(IM, CNG1, PDT, Pretest)
(12) She ran the hospital.	(IM, COG16, ETT, Pretest)
(13) Jane is walking the stairs.	(IM, NCG5, PDT, Pretest)
(14) I put a strawberry jam the bread.	(CM, CNG8, PDT, Pretest)
(15) I pushed the monkey the cage.	(CM, COG4, ETT, Pretest)
(16) Tom throws Sam’s doll the fence.	(CM, COG5, GWT, Pretest)

Table 4.55 shows the frequency of the error type in the intransitive-motion and caused-motion constructions by the groups across test sessions.

The preposition-dropping error decreased considerably only in the construction-based groups across the two posttests. In contrast, the non-constructional group was prone to drop the relevant prepositions in the immediate posttest and even fell back to their pretest level in the delayed posttest.

TABLE 4.55

Frequency of the *Preposition-Omission* Error in IM & CM by the Groups Across Test Sessions

ASCs	CNG			COG			NCG		
	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)
Intransitive-motion	64 (1.8)	0 (0.0)	7 (0.2)	57 (1.6)	7 (0.2)	11 (0.3)	79 (2.2)	46 (1.3)	64 (1.8)
Caused-motion	121 (3.4)	4 (0.1)	7 (0.2)	139 (3.9)	11 (0.3)	7 (0.2)	104 (2.9)	75 (2.1)	86 (2.4)
Total	185 (5.2)	4 (0.1)	14 (0.4)	196 (5.5)	18 (0.5)	18 (0.5)	173 (5.1)	121 (3.4)	150 (4.2)

The researcher presented the particles first in the assembly of the intransitive-motion and caused-motion constructions, stressing their prominent status in the constructions. It was based on Tomasello's (1992) report that particles assumed a noticeable status in the initial stage of first language development. The non-constructional group's attention was also directed to the particles by making them bold-faced as an input enhancement, in addition to the explanation of their grammatical role. Thus it was less likely that the decrease of 'preposition-omission' error was entirely due to a special emphasis on the particles only in the construction-based groups.

The preposition-omission error may be attributable to L1 transfer. According to Talmy (1985, 1991), the Korean language belongs to *verb-framed* languages, whereas the English language is included in *satellite-framed* languages. In

English, a particle, which is a satellite to a verb, carries the core information of the path of movement. In contrast, in Korean, the verb itself conveys this information. In addition, the verb conveys information on manner of movement in English, whereas the gerundive pattern is used in Korean. This typological difference between the two languages may be a source of Korean EFL learners tending to drop prepositions in the constructions which include self-movement and caused movement. That is, the 'path-conflation pattern' in Korean verbs may give rise to the 'path-embedded verb cluster' in Korean EFL learners' production of the intransitive-motion and caused-motion constructions. The constructional approach seemed to play a crucial role in the learners effectively overcoming this error.

On the other hand, the other salient error was misinformation[21] – overgenerated *be*,' as in examples (17) through (20) below.

(17) A taxi was run go down the road. (CNG4, ETT, Pretest)

(18) He is look very happy. (COG6, ETT, Pretest)

(19) I am pushed the monkey. (NCG7, ETT, Pretest)

(20) He is hit the ball. (CNG10, PDT, Pretest)

[21] It refers to the use of the wrong form of the word or srtucture (Dulay, Burt, & Krashen, 1982).

Table 4.56 shows that there was a marked decrease in the use of the overgenerated *be* construction in the construction-based groups, whereas the non-constructional group still tended to resort to the construction even after instruction.

TABLE 4.56

Frequency of the *Be-insertion* Error by the Groups Across the Test Sessions

Error Types	**CNG**			**COG**			**NCG**		
	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)	Pre (%)	IPost (%)	Dpost (%)
Be-insertion	136 (3.8)	22 (0.6)	11 (0.3)	125 (3.5)	4 (0.1)	14 (0.4)	146 (4.1)	105 (2.9)	112 (3.2)

Korean EFL learners, especially novice learners, tend to overuse the verb *be* in the initial stage of the acquisition of the target language. It may be due to the L1 transfer effect, namely topic-comment structure (Li & Thompson, 1976; Yip, 1995). The error has been assumed to be hard for the EFL learners to surmount. However, the result that the construction-based groups hardly used the verb *be* in the two posttests may imply that the construction-based treatment was effective enough for Korean EFL learners to unlearn the error. Thus, the constructional approach needs to be taken into account in attempts to help the EFL learners to avoid the overgenerated *be* construction.

CHAPTER 5.
CONCLUSION

This chapter draws the conclusion of the present study by summarizing the major findings and presenting pedagogical implications. The limitations of the current study and the suggestions for future research are also provided.

5.1 Major Findings and Pedagogical Implications

The present study explored the effects of construction-grammar-based instruction on Korean college English learners' improvements in sentence production ability. The major findings of the study are summarized as follows.

First, although all three groups were homogeneous in the level of sentence production at the beginning of the present study, each group was differently affected by the instructional treatments. All the instructional treatments were effective for the learners' improvements in sentence production in the immediate and delayed posttests. However, the construction-based groups showed more significant improvements in their sentence production than the non-constructional group. The effect of the construction-based instruction was proved to be durable over four weeks of the posttest period. Notably, as revealed in the results of the grammaticality judgment task in the two posttests, the construction-

based groups obtained constructional knowledge through the construction-based instruction.

Second, regarding the relative effects of the two types of construction-based instruction, there were no network effects on the learners' overall sentence production in the immediate posttest. However, there were significant differences between the network-based group and the non-networked groups in the double object dative and resultative constructions. In the delayed posttest, in general, the networked-based instruction had lasting effects on the learners' improvement in sentence production. There was a general tendency for the network-based group (CNG) to outperform the non-networked groups (COG and NCG). The constructional networks played a crucial role in maintaining treatment effects relatively longer than the non-networked approach.

The samples of learner language obtained from the two sentence production tasks (i.e., ETT and PDT) were examined in terms of the productivity and accuracy of ASCs. The examination on constructional productivity focused on both changes in the percentage of 'no response' and the use of the light verb *get*. The percentage of 'no response' decreased considerably in the construction-based groups in both posttests while the non-constructional group did not. This implies that the construction-based groups actively tried to produce ASCs in both posttests. On the other hand, an investigation into changes in the use of the light verb *get* showed that the construction-based groups utilized the verb more

frequently than the non-constructional group in the immediate and delayed posttests. Furthermore, an exploration into how ‘no response’ changed in later tasks showed that the construction-based groups replaced ‘no response’ with sentences using *get*. In contrast, the non-constructional group left many test items blank, which indicated that they had problems with producing sentences.

The analysis of the constructional accuracy focused on the error types such as ‘misordering’, ‘indirect object-omission’ and ‘complement-omission.’ Each of the errors decreased sharply in the construction-based groups in the two posttests, whereas they decreased slightly in the non-constructional group. This result indicated that the construction-based instruction was effective enough to improve Korean EFL learners’ constructional knowledge, through which they were able to use them correctly.

Lastly, there were two salient error types identified in the learners’ production data in the pretest: ‘preposition-omission’ and ‘*be* insertion.’ These are considered to be the errors Korean EFL learners commit very often in the acquisition of the target language. The percentage of the preposition-dropping errors decreased dramatically in the construction-based groups in the two posttests. However, the non-constructional group tended to drop the relevant prepositions in the immediate posttest and even fell back to their pretest level in the delayed posttest. On the other hand, the use of the overgenerated *be* construction decreased significantly in the construction-based groups.

The findings of the present study offer instructional implications on the improvement of Korean EFL learners' sentence production ability. Korean EFL learners are not exposed to sufficient input and opportunities for meaningful interactions. The provision of well-organized input reflecting linguistic systems of the target language was assumed to play an essential role in overcoming the limitations resulting from the contextual restrictions (Yang, 2008, 2010). This well-organized input is closely associated with the choice of linguistic features in organizing teaching content. When it comes to the sentence production of EFL learners, the teaching content needs to reflect the linguistic system of the target language, especially in terms of the syntactic and semantic properties of the sentences, alongside systematicity among sentence structures.

Korean EFL learners have considerable difficulty in generating even basic sentences in communication, and thus equipping them with the ability to produce sentences is very important. In addition, in such EFL settings, the ability to produce sentences requires instructional support.

The most general implication for instruction that can be drawn from the findings of the present study is that constructional knowledge is important to the learners' sentence production ability. By drawing on the constructional knowledge, the learners retrieved appropriate constructions and used them correctly. This would seem to be a sufficient justification for the construction-based instruction in order to enhance EFL learners' sentence production ability.

For this reason, the study suggests that ASCs need to be incorporated into the English curriculum, especially in the organization of grammatical materials.

In addition, the inheritance hierarchies among ASCs impose a degree of systematicity on the apparently overwhelming number of ASCs that should be acquired (Littlemore, 2009). This systematicity has important implications for the organization of grammar in EFL contexts with regard to the teaching sequence. The network-based instruction can be a powerful predictor of success in sentence production. Thus, in accordance with Goldberg's (1995) hierarchical networks, ASCs need to be presented to the learners in determined order from the easy and core ones such as intransitive-motion, intransitive-resultative, and transitive constructions to the more difficult and peripheral ones such as caused-motion, ditransitive, and resultative constructions.

On the other hand, the light verb *get* seemed to play a strategic role in the learners' sentence production, suggesting the employment of the verb in the construction-based instruction.

5.2 Limitations of the Study and Suggestions for Future Research

The present study has several limitations. First, the present study was primarily concerned with the learners' written performance due to practical

constraints. Thus, future research on the EFL learners' samples of speech is needed to substantiate the results of the current research.

Second, regarding instructional methods, it was true that explicit instruction on ASCs was proven to play an effective role in the learners' improvements of the ability to generate sentences. However, the influence would be more powerful provided that the learners were afforded opportunities to engage in a variety of meaningful communicative activities or tasks. That is, the instructional guidelines of the study involve the need to engage learners in systematic and meaningful tasks or activities. Therefore, it would be worth investigating the effectiveness of the construction-based approach by incorporating these activities or tasks into the instruction phase.

Third, the number of the participants was not large enough, which makes it somewhat difficult to generalize the findings of the present study to other EFL contexts. In addition, the fact that the network-based instruction was not statistically significant in the immediate posttest might be due to the limited number of participants. Future studies thus need to be carried out with a large number of participants in order to validate the results of the present study.

Fourth, the four-week interval between the immediate posttest and the delayed posttest might be too short to assert lasting impacts of the two construction-based instructions. To gain more reliable findings of the long-term effects, further studies are to be conducted with an extended posttest period.

Lastly, as the present study mainly focused on the instructional effectiveness, the learners' individual differences were not taken into account. However, there are many variables that influence the learners' sentence production ability, for instance, language aptitude, motivation, cognitive capabilities, and memory. This requires attention to a range of issues on the effects of individual differences in EFL learners' sentence production ability in future studies.

With these limitations, the study is significant in that it showed that the construction grammar-based instruction can have positive effects on Korean college English learners improving their sentence production ability. This suggests an alternative to traditional grammar instruction of sentence structures. Furthermore, the present study opens a new prospect on grammatical competence in foreign language learning and sheds some light on the direction of the future studies on EFL learners' improvements in sentence production.

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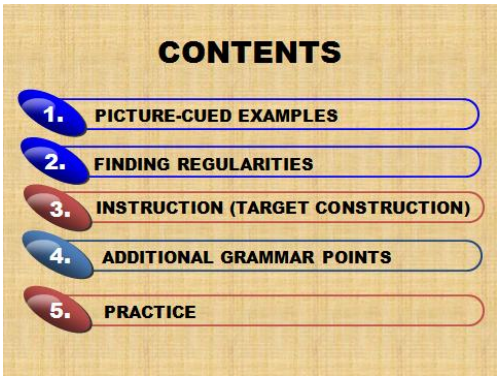
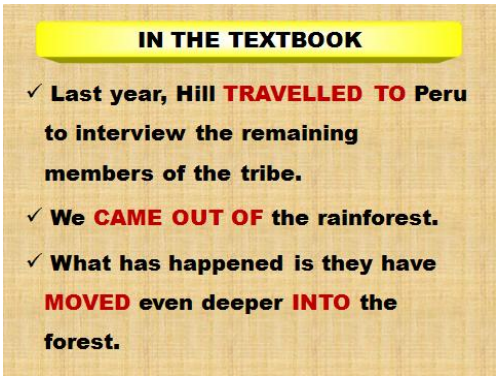
APPENDICES

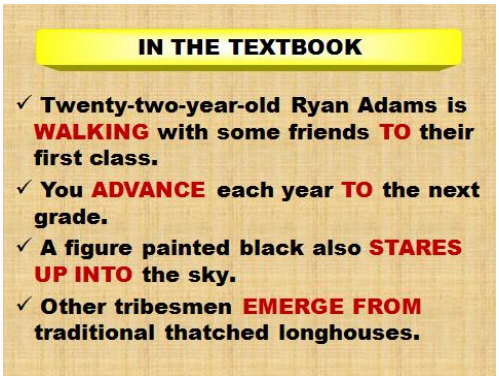
APPENDIX 1. Instruction Material Samples

1.1 CNG

1.1.1 Intransitive-motion construction







❖ 영어로 어떻게 표현할 수 있을까요?

❖ 영어로 어떻게 표현할 수 있을까요?

❖ 다음 예문의 공통점을 찾아봅시다.

- ❖ **Alice went to the woods.**
- ❖ **The turtle got to the top.**
- ❖ **How can I get to the post office?**
- ❖ **She walked into the dormitory.**
- ❖ **I ran into the bathroom.**
- ❖ **He jumped out of the classroom.**

☞ **I GO/GET TO SCHOOL.**

❖ GO: 가는 행위

- '주체'와 '장소'를 요구함

(반드시 이 두 요소는 나타나야 함)

- 가는 주체: NP (Subject) ☞ I
- 장소: PP ☞ TO SCHOOL

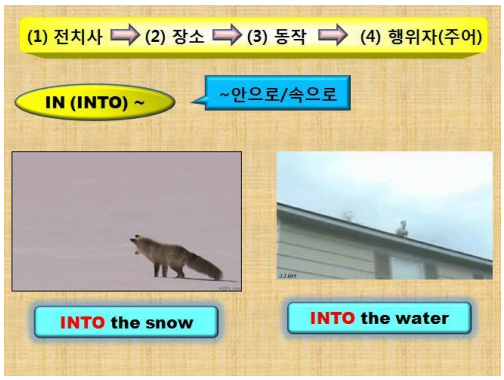
❖ 목표구문: 자동-이동구문

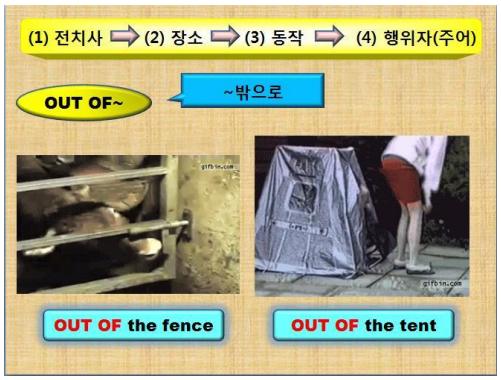
- 형태: 주어(X)+동사+(방향)전치사+장소(Y)
- 의미: "X가 Y로 (스스로)이동한다."

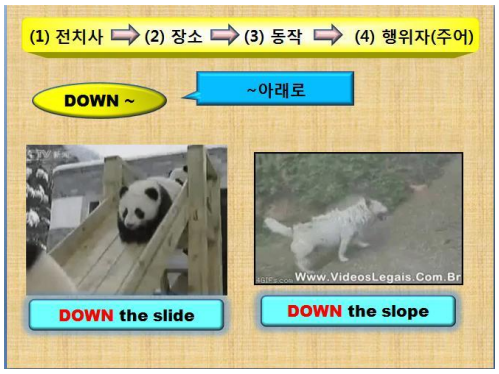
	이동자	이동	전치사(방향)	장소
이동	s	GO GET	(~안으로): IN(TO) (~밖으로): OUT OF	the room
			(~위로): UP (~아래로): DOWN	the wall the street
			(~에 접촉하여): ON (~에 분리되어): OFF	the table

❖ 목표 장면(상황)의 생성 순서

방향: INTO ⇩ 장소: the snow ⇨ 동작: GO/GET/JUMP ⇧ 이동자: The fox







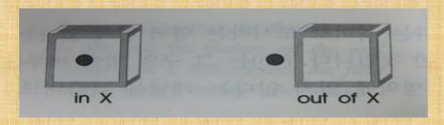
❖ 전치사의 개념

- 전치사 : 공간상의 위치관계 표현 (Dimension)
  - ✓ **John is AT the library now.**
  - ✓ **John is ON the chair.**
  - ✓ **John is IN the chair.**
  - ✓ **We went (IN)TO the door.**
  - ✓ **He climbed OUT OF the water.**

❖ 전치사의 개념

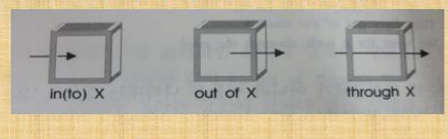
- 전치사 : 공간상의 위치관계 표현
  - ✓ He ran UP / DOWN the hill.
  - ✓ We came FROM the theater.
  - ✓ There's a green label ON the bottle.
  - ✓ That's a place OFF the map.

❖ 전치사의 개념 (형상화)



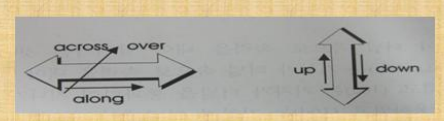
The food is IN the cupboard.
He was OUT OF the room.
I have a house IN the city.
They stayed OUT OF the district.

❖ 전치사의 개념 (형상화)



They flew OUT OF the country.
We walked THROUGH the park.
He ran INTO the house.
He climbed OUT OF the water.

❖ 전치사의 개념 (형상화)

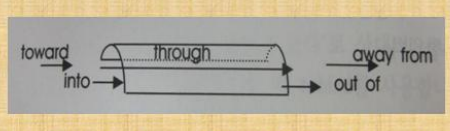


We walked ACROSS the street.
We walked ALONG the river bank.
He ran UP / DOWN the hill.
He drove UP / DOWN the street.

❖ 전치사의 개념 (형상화)

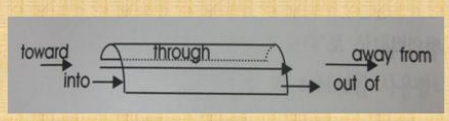
The dictionary is ON the shelf.
There is a fly ON the ceiling.
Our favorite restaurant is just OFF the road.
The house is just OFF the main road.

❖ 전치사의 개념 (형상화)



- The train went TOWARD the tunnel.
- The train went INTO the tunnel.
- The train went THROUGH the tunnel.
- The train went OUT OF the tunnel.
- The train went AWAY FROM the tunnel.

❖ 전치사의 개념 (형상화)



- He looked THROUGH the window.
- We went THROUGH the park.
- They ran INTO the streets.
- They flew OUT OF the country.
- John stayed AWAY FROM home.

❖ 방향 전치사 + "구체적인 동작" 결합

방향 전치사 + "구체적인 동작" 결합

JUMP | INTO | the snow

방향 전치사 + "구체적인 동작" 결합

CRAWL | OUT OF | the tent

방향 전치사 + "구체적인 동작" 결합

RACE | TO(WARD) | the camera

방향 전치사 + "구체적인 동작" 결합

RUN | UP | the slide

방향 전치사 + "구체적인 동작" 결합

MOVE | DOWN | the slide

EXAMPLES (BASIC VERBS)

- ❖ Alice **WENT (IN)TO** the woods.
- ❖ I **CAME (IN)TO** my room.
- ❖ She **WALKED OU OF** the stadium.
- ❖ I **RAN INTO** the bathroom.
- ❖ The bat **FLIES INTO** the cave.

☞ I GO/GET TO SCHOOL.

EXAMPLES (EXTENDED VERBS)

- ❖ I **JUMPED INTO** the library.
- ❖ His family **MOVED INTO** a fancy house.
- ❖ She **DIVED INTO** the Han River.
- ❖ He **CLIMBED UP** the mountain.
- ❖ Leaves **FALL OFF** trees.

☞ I GO/GET TO SCHOOL.

EXAMPLES (IN THE TEXTBOOK)

☞ I GO/GET TO SCHOOL.

- ✓ Last year, Hill **TRAVELLED TO** Peru to interview the remaining members of the tribe.
- ✓ We **CAME OUT OF** the rainforest.
- ✓ What has happened is they have **MOVED** even deeper **INTO** the forest.

PRACTICE 1

그림을 보고 빈칸에 들어갈 말을 채우세요.

연못에 과자를 던졌는데...

The fish (GO) (TO) the snack.

GET
RUN
RACE
TOWARD

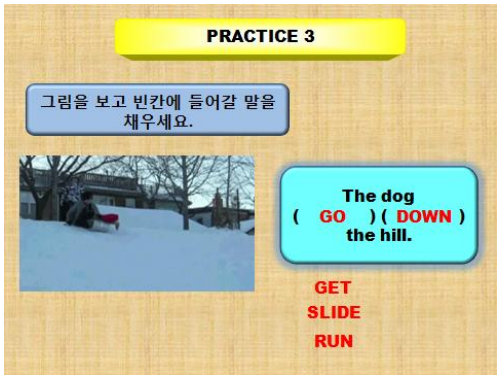
PRACTICE 2

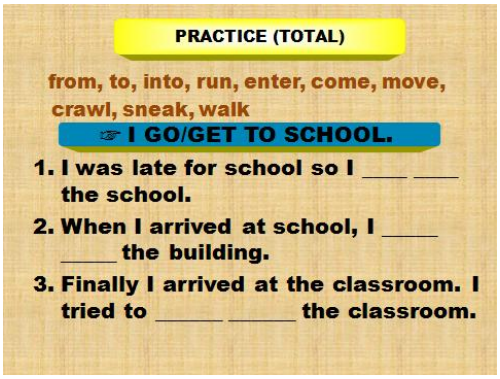
그림을 보고 빈칸에 들어갈 말을 채우세요.

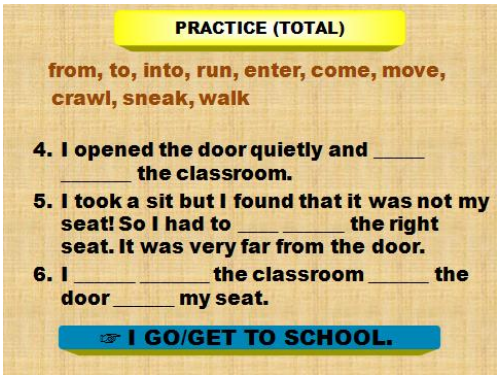
나가고 싶어...

The turtle tries to (GO) (OUT OF) the basin.

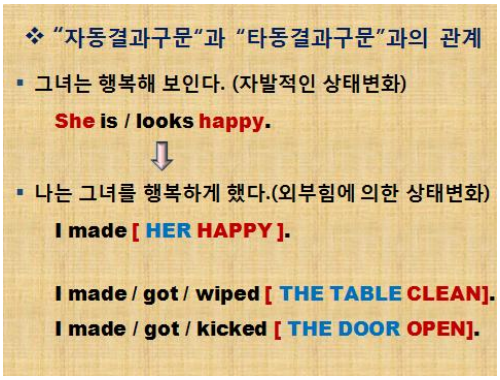
GET
WALK
MOVE







1.1.2 Resultative construction



❖ "사역이동구문"과 "타동결과구문"과의 관계

- 그녀는 병을 동굴로 차 넣었다. [장소의 변화]

  She kicked THE BOTTLE INTO the cave.

⇩

- 그녀는 그를 발로 차서 멍들게 했다. [상태의 변화]

  She kicked HIM BLACK AND BLUE. [강한 사역]

❖ "타동결과구문"의 연장[확장]

- 그녀는 나를 행복하게 했다. [상태의 변화]

  She MADE [GOT] ME HAPPY. [강한 사역]

⇩

- 그녀는 나로 하여금 피아노를 방으로 밀어 넣게 했다.

  She MADE [GOT] ME PUSH THE PIANO INTO THE ROOM. [강한 사역]

⇩

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 도왔다.

  She HELPED [GOT] ME (TO) PUSH THE PIANO INTO THE ROOM. [중간 사역]

❖ "타동결과구문"의 연장[확장]

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 도왔다.

  She HELPED [GOT] ME PUSH [TO PUSH] THE PIANO INTO THE ROOM. [중간 사역]

⇩

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 보았다.

  She SAW ME PUSH [PUSHING] THE PIANO INTO THE ROOM. [중간 사역]

❖ "타동결과구문"의 연장[확장]

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 보았다.

  She SAW ME PUSH [PUSHING] THE PIANO INTO THE ROOM. [중간 사역]

⇩

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 발견했다.

  She FOUND ME PUSHING THE PIANO INTO THE ROOM. [중간 사역]

⇩

❖ "타동결과구문"의 연장[확장]

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 발견했다

  She FOUND ME PUSHING THE PIANO INTO THE ROOM. [중간 사역]

⇧

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 발견했다.

  She FOUND THAT I PUSHED THE PIANO INTO THE ROOM.

⇧

- 그녀는 그 피아노를 발견했다.

  She FOUND THE PIANO.

❖ "타동결과구문"의 연장[확장]

- 그녀는 내가 피아노를 방으로 밀어 넣기를 원했다.

  She WANTED [GOT] ME TO PUSH THE PIANO INTO THE ROOM. [약한 사역]

⇧

- 그녀는 피아노를 방으로 밀어 넣기를 원했다.

  She WANTED TO PUSH THE PIANO INTO THE ROOM.

⇧

- 그녀는 그 피아노를 원했다.

  She WANTED THE PIANO.

1.2 COG

1.2.1 Resultative construction

❖ 목표구문: 타동결과구문

- 형태: 주어(X)+동사+목적어(Y)+보어(Z)
- 의미: "X가 Y로 하여금 Z(의 상태)가 (즉시)되게 하다."
- 외부힘이 대상에 직접적인 행위를 가하고, 도중에 시간적 공백 없이 행위의 종료와 동시에 대상의 상태변화가 일어나야 함 (외부힘이 대상의 상태를 변화시킴)

외부힘 (X)	행위	상태 변하는 자(Y)	변한상태(Z)
S	MAKE WIPE KICK (GET)	her the table the door	HAPPY CLEAN OPEN

❖ 목표구문: 타동결과구문

- 나는 그녀를 행복하게 했다.(외부힘에 의한 상태변화)

  I made [HER HAPPY].

  I made / got / wiped [THE TABLE CLEAN].

  I made / got / kicked [THE DOOR OPEN].

- 그녀는 그를 발로 차서 멍들게 했다. [상태의 변화]

  She kicked HIM BLACK AND BLUE. [강한 사역]

❖ "타동결과구문"

- 그녀는 나를 행복하게 했다. [상태의 변화]

  She MADE [GOT] ME HAPPY.

- 그녀는 나로 하여금 피아노를 방으로 밀어 넣게 했다.

  She MADE [GOT] ME PUSH THE PIANO INTO THE ROOM.

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 도왔다.

  She HELPED [GOT] ME (TO) PUSH THE PIANO INTO THE ROOM.

❖ "타동결과구문"

- 그녀는 그 피아노를 원했다.

  She wanted the piano. [타동구문]

- 그녀는 그 피아노를 발견했다.

  She found the piano. [타동구문]

- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 발견했다

  She found me pushing the piano into the room.

❖ "타동결과구문"

- 그녀는 피아노를 방으로 밀어 넣기를 원했다.

  She wanted to push the piano into the room. [타동구문]

- 그녀는 행복해 보인다. [자동이동구문]

  She is / looks happy.

- 그녀는 병을 동굴로 차 넣었다. [사역이동구문]

  She kicked the bottle into the cave.

1.3 NCG

1.3.1 Intransitive-motion construction

❖ 목표구조: SVPP

• 주어+동사+전치사구(전치사+명사)

	이동자	이동	전치사(방향)	장소
이동	S	GO GET	(~안으로): **IN(TO)** (~밖으로): **OUT OF**	the room
			(~위로): **UP** (~아래로): **DOWN**	the wall the street
			(~에 접촉하여): **ON** (~에 분리되어): **OFF**	the table

❖ 목표 장면(상황)의 묘사

The fox GO/GET/JUMP into the snow.

1.3.2 Resultative construction

❖ 목표구조: SVOC

• 형태: 주어(X)+동사+목적어(Y)+보어(Z: 형용사구)

주어(X)	동사	목적어(Y)	보어(Z)
S	MAKE WIPE KICK (GET)	her the table the door	HAPPY CLEAN OPEN

❖ 목표구조: SVOC

▪ 나는 그녀를 행복하게 했다.

I made her happy.

I made / got / wiped the table clean.

I made / got / kicked the door open.

▪ 그녀는 그를 발로 차서 멍들게 했다.

She kicked him black and blue.

❖ 목표구조: SVOC

▪ 그녀는 나를 행복하게 했다.

She made [got] me happy.

▪ 그녀는 나로 하여금 피아노를 방으로 밀어 넣게 했다.

She made [got] me push the piano into the room.

▪ 그녀는 내가 피아노를 방으로 밀어 넣는 것을 도왔다.

She helped [got] me (to) push the piano into the room.

❖ 목표구조: SVOC

▪ 그녀는 내가 피아노를 방으로 밀어 넣기를 원했다.

She wanted [got] me to push the piano into the room.

▪ 그녀는 내가 피아노를 방으로 밀어 넣는 것을 보았다.

She saw me push [pushing] the piano into the room.

▪ 그녀는 내가 피아노를 방으로 밀어 넣는 것을 발견했다.

She found that I pushed the piano into the room.

❖ 목표구조: SVOC

- 그녀는 그 피아노를 원했다.
  She wanted the piano.
- 그녀는 그 피아노를 발견했다.
  She found the piano.
- 그녀는 내가 피아노를 방으로 밀어 넣는 것을 발견했다
  She found me pushing the piano into the room.

❖ 목표구조: SVOC

- 그녀는 피아노를 방으로 밀어 넣기를 원했다.
  She wanted to push the piano into the room.
- 그녀는 행복해 보인다.
  She is / looks happy.
- 그녀는 병을 동굴로 차 넣었다.
  She kicked the bottle into the cave.

APPENDIX 2. Elicited Translation Task

2.1 Pretest

※ Translate the following Korean into English.

1. 그들은 열심히 공부하기로 동의했다.

_____

2. 나는 벽에 그것을 게시했다. (post)

_____

3. James 는 내가 터널을 빠져 나오는 것을 도와줬다.

_____

4 내일 비가 내릴 것으로 생각하니?

_____

5. (Q: 너는 누구에게 그 이야기를 해주었니?)
A: 나는 James 에게 그 이야기를 해주었다.

_____

6. 그녀는 매우 행복해 보인다.

_____

7. 나는 그 원숭이를 우리(cage) 속으로 밀어 넣었다.

_____

8. 그녀는 그 병원으로 달려 들어갔다.

_____

9. 그는 나에게 공을 차주었다. (그래서 나는 그 공을 받았다).

_____

10. 그 햄버거는 맛있는 냄새가 났다.

_____

11. 그는 나로 하여금 그 책을 도서관으로 옮기게 했다.

_____

12. 테이블 위에 책이 한 권 있다.

_____

13. 파리가 윙윙 소리를 내며 터널로 들어갔다. (buzz)

_____

14. 그는 수영하는 법을 배웠다.

_____

15. 그녀는 내게 미소를 지었다. (give)

_____

16. 그 책은 흥미로웠다.

17. 택시가 덜컹덜컹 소리를 내며 거리를 내려왔다. (rumble)

18. 나는 그가 돌멩이 하나를 담장 너머로 (지금) 던지고 있는 것을 보았다.

19. James 는 그를 정문으로 안내했다. (escort)

20. 그 자료는 우리에게 전쟁의 이유를 보여준다.

21. 우리는 버스를 타기로 결심했다.

22. 그 콜라는 맛이 좋다.

23. 그녀는 거울을 깨끗이 닦았다. (wipe)

24. 아이가 머리를 창 밖으로 내 놓았다.

25. 그녀는 그에게 영어를 가르쳤다. (하지만 그가 영어를 배웠는지는 모른다.)

26. 그것은 재미있게 들린다.

27. 그녀는 지붕을 노랗게 칠했다.

28. Bill 은 그 공을 언덕 아래로 굴렸다.

29. 너는 굴러서 그 방을 나갈 수 있니? (roll)

30. 그녀는 테니스 치는 것을 즐겼다.

31. 그녀는 그에게 꽃을 보냈다. (하지만 그가 그 꽃을 받았는지는 모른다.)

32. 그 금속은 감촉이 좋다.

33. James 는 그 문을 발로 차서 열었다.

34. 우리는 그가 천재라는 사실을 믿는다. (우리는 그가 천재라고 믿는다.)

35. 그녀는 사과를 선반 위에 놓았다.

36. 그 성에는 많은 환자들이 산다.

2.2 Immediate Posttest

※ Translate the following Korean into English.

1. 그들은 소풍 가는 것에 동의했다.

_____

2. 나는 칠판에 그것을 게시했다. (post)

_____

3. James 는 내가 수영해서 그 강을 건너는 것을 도와줬다.

_____

4. 내일 눈이 내릴 것으로 생각하니?

_____

5. (Q: 너는 누구에게 그 편지를 읽어주었니?)
A: 나는 James 에게 그 편지를 읽어주었다.

_____

6. 그녀는 매우 불행해 보인다.

_____

7. 나는 그 여우를 목욕탕으로 밀어 넣었다.

_____

8. 그녀는 그 도서관 밖으로 달려 나갔다.

_____

9. 그는 나에게 깡통을 차주었다. (그래서 나는 그 깡통을 받았다).

_____

10. 그 피자는 맛있는 냄새가 났다.

_____

11. 그녀는 나로 하여금 그 핸드백을 차로 옮기게 했다. (carry)

_____

12. 컴퓨터 위에 책 한 권이 있다.

_____

13. 벌이 윙윙 소리를 내며 거실로 들어갔다. (buzz)

_____

14. 그는 낚시하는 법을 배웠다.

_____

15. 그녀는 내게 포옹을 해주었다. (give)

_____

16. 그 약은 쓴 맛이 났다.

_____

17. 버스가 덜컹덜컹 소리를 내며 길을 내려왔다. (rumble)

_____

18. 나는 그가 책을 담장 너머로 (지금) 던지고 있는 것을 보았다.

19. James 는 그를 창문으로 안내했다. (escort)

20. 그 그래프는 우리에게 결과를 보여준다.

21. 그녀는 택시를 타기로 결심했다.

22. 그 우유는 맛이 좋다.

23. 그녀는 유리창을 깨끗이 닦았다. (wipe)

24. 고양이가 머리를 창 밖으로 내 놓았다.

25. 그녀는 그에게 불어를 가르쳤다. (하지만 그가 불어를 배웠는지는 모른다.)

26. 그 음악은 즐겁게 들린다.

27. 그녀는 벽을 하얗게 칠했다.

28. Bill 은 그 공을 산 아래로 굴렸다.

29. 너는 굴러서 그 텐트에서 나갈 수 있니? (roll)

30. 그는 테니스 치는 것을 회피했다.

31. 그녀는 그에게 인형을 보냈다. (하지만 그가 그 인형을 받았는지는 모른다.)

32. 그 비단은 감촉이 부드럽다.

33. James 는 그 문을 (잡아)당겨서 열었다.

34. 우리는 그가 바보라는 사실을 믿는다. (우리는 그가 바보라고 믿는다.)

35. 그녀는 오렌지를 책상 위에 놓았다.

36. 그 집에는 많은 고양이들이 산다.

2.3 Delayed Posttest

※ Translate the following Korean into English.

1. 그녀는 물속에 다이빙하는 것에 동의했다.

_____

2. 나는 화이트보드에 그것을 게시했다. (post)

_____

3. 그는 내가 길을 가로질러 달려가는 것을 도와줬다.

_____

4. 내일 눈이 내릴 것으로 믿니?

_____

5. (Q: 너는 누구에게 그 메시지를 읽어주었니?)
A: 나는 John 에게 그 메시지를 읽어주었다.

_____

6. 그는 매우 슬퍼 보인다.

_____

7. 나는 그 돼지를 차로 밀어 넣었다.

_____

8. 그녀는 그 공원 밖으로 뛰어 나갔다.

_____

9. 그는 나에게 신발을 차주었다. (그래서 나는 그 신발을 받았다).

_____

10. 그 음식은 맛있는 냄새가 났다.

_____

11. 그녀는 나로 하여금 그 돈을 은행으로 옮기게 했다. (carry)

_____

12. 의자 위에 책 한 권이 있다.

_____

13. 벌이 윙윙 소리를 내며 창문으로 나왔다. (buzz)

_____

14. 그는 노는 법을 배웠다.

_____

15. 그녀는 내게 키스를 해주었다. (give)

_____

16. 그 오렌지는 단 맛이 났다.

_____

17. 트럭이 덜컹덜컹 소리를 내며 도로를 올라갔다. (rumble: 덜컹덜컹 소리를 내다)

_____

18. 나는 그가 깡통을 담장 너머로 (지금) 던지고 있는 것을 보았다.

19. James 는 그를 우체국으로 안내했다. (escort)

20. 그 다이어그램(diagram)은 우리에게 그 사건(accident)의 결과를 보여준다.

21. 그는 지하철을 타기로 결심했다.

22. 그 주스는 맛이 좋다.

23. 그녀는 식탁을 깨끗이 닦았다. (wipe)

24. 그 신사는 머리를 창 밖으로 내 놓았다.

25. 그녀는 그에게 일본어를 가르쳤다. (하지만 그가 일본어를 배웠는지는 모른다.)

26. 그 음악은 이상하게 들린다.

27. 그는 담장을 빨갛게 칠했다.

28. Bill 은 눈덩이를 산 아래로 굴렸다.

29. 너는 굴러서 그 거실에서 나갈 수 있니? (roll)

30. 그는 피아노 치는 것을 회피했다.

31. 그녀는 그에게 조그마한 선물을 보냈다.
(하지만 그가 그 선물을 받았는지는 모른다.)

32. 그 종이는 감촉이 부드럽다.

33. James 는 그 창문을 (잡아)당겨서 열었다.

34. 우리는 그가 과학자라는 사실을 믿는다. (우리는 그가 과학자라고 믿는다.)

35. 그녀는 컵을 식탁 위에 놓았다.

36. 그 상자에는 많은 개미들이 산다.

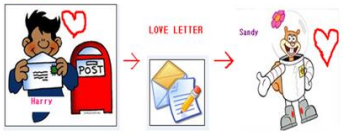
APPENDIX 3. Picture Description Task

3.1 Pretest

9

She ( ).

10



Harry loved Sandy so much.

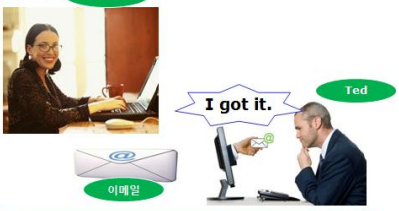
So he decided to ( ).

11

What is the man doing?

He ( ).

12

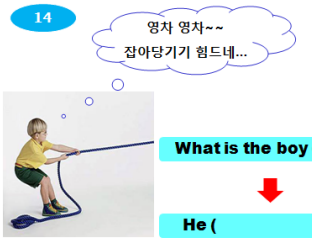


Susie ( ).

13

Mac ( )

14



What is the boy doing?

He ( ).

15

The boy left his house and
( ).

16

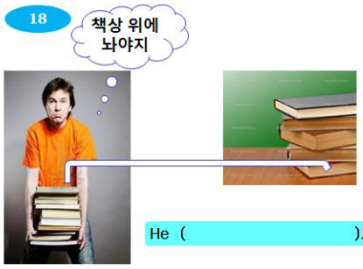
She ( ).

17

What is the woman doing?

She ( ).

18



He ( ).

19

Jane ( ).

20

She ( )

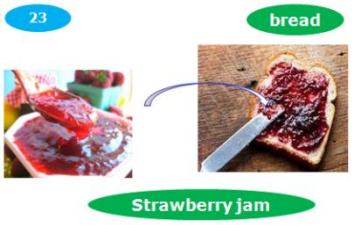
21

The story
( ).

22

It ( ).

23



I ( ).

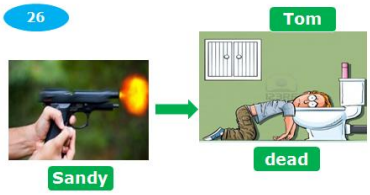
24

The lemon ( ).

25

She ( ).

26



Sandy ( )

27

Bill ( ).

28

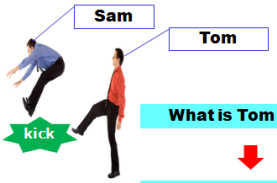
( ).

29

The table was dirty.

The man ( ).

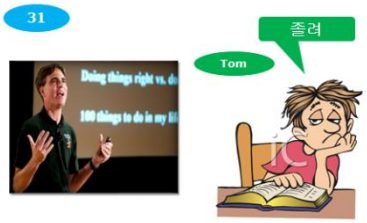
30



What is Tom doing?

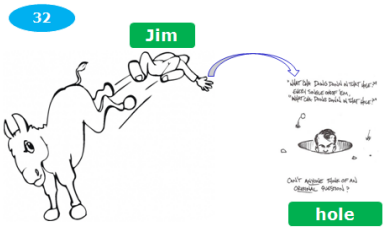
He ( ).

31



His presentation
( ).

32



The donkey ( ).

33

Jack ( ),
so Gary made a goal.

34

Sam asks Tom to ( )

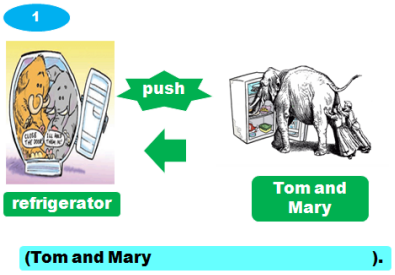
35

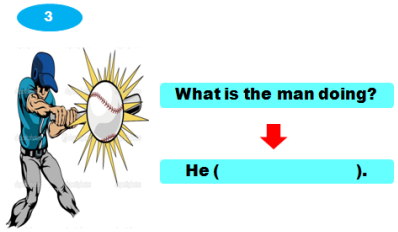
( ).

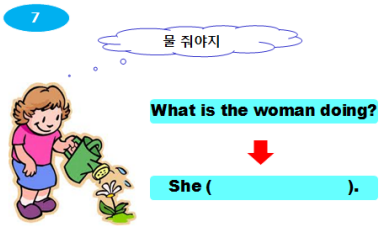
36

John ( ).

3.2 Immediate Posttest







9

Horses ( ).

10

Snow White wants to
( ).

11

What is the woman doing?

She ( ).

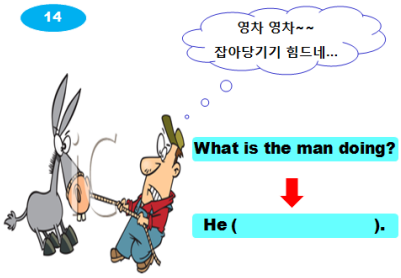
12

Bill ( ).

13

James ( )

14



What is the man doing?

He ( ).

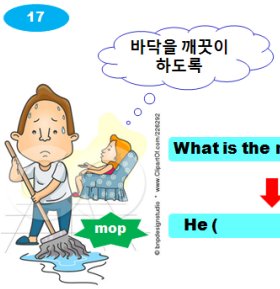
15

Dan
( ).

16

She ( ).

17



What is the man doing?

He ( ).

18

He ( ).

19

The man ( ).

20

They ( )

21

The story ( ).

22

The melons ( ).

23

I ( ).

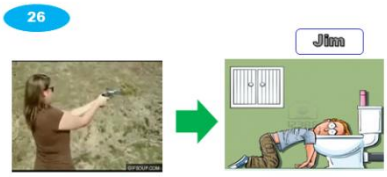
24

It ( ).

25

Sam ( ).

26



She ( )

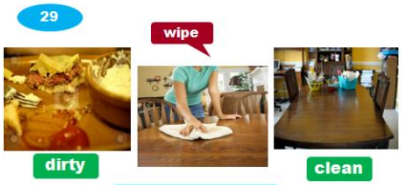
27

Jack ( ).

28

( ).

29



The table was dirty.

The woman ( ).

30

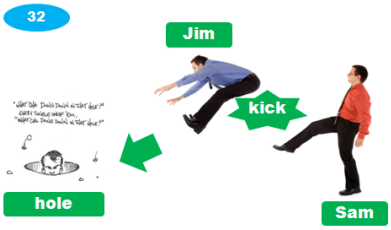
What is Tom doing?

He ( ).

31

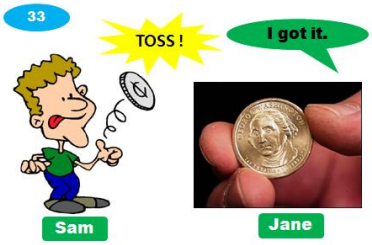
The lecture ( ).

32



Sam ( ).

33



Sam ( ).

34

Sam asks Jane to ( )

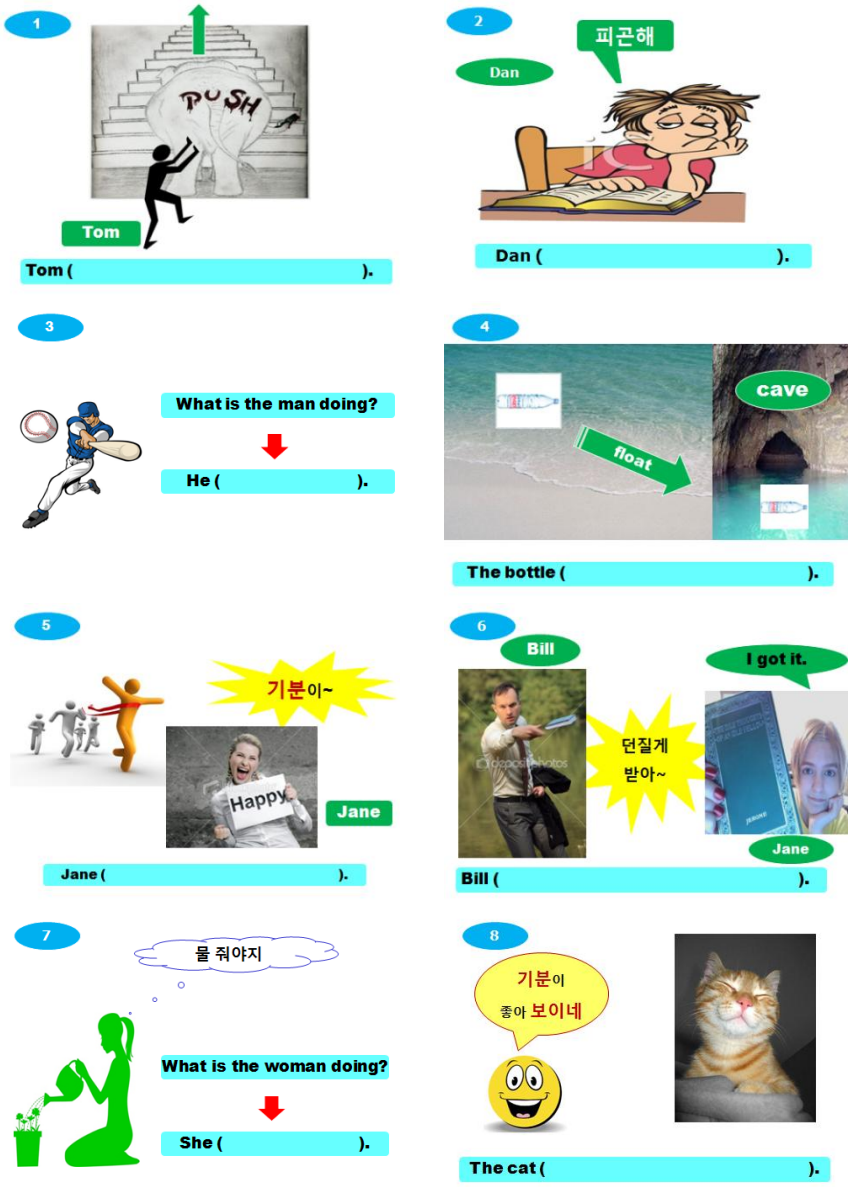
35

( ).

36

James ( ).

3.3 Delayed Posttest



9

A boy fell into the river. But he could not swim.

The rescuer ( ) to save the boy.

10

Snow White

?

send

The witch wants to ( ).

11

얼굴이 더러워졌네..

What is the woman doing?

She ( ).

12

I got your email.

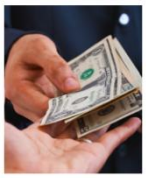
Bill

Jane

Jane ( ).

13

Sam



lend

Karen

Sam ( )

14

영차 영차~~
카트 끌기 힘드네...

What is the man doing?

He ( ).

15

building

(The Spiderman).

16

좀 건네 주세요

sugar

She ( ).

17

바닥을 깨끗이

mop

What is the woman doing?

She ( ).

18

선반 위에 놔야지

The dog ( ).

19

The man ( ).

20

Laura ( )

21

The story ( ).

22

The durian ( ).

23

I ( ).

24

The lemon ( ).

25

She ( ).

26

Tom ( )

27

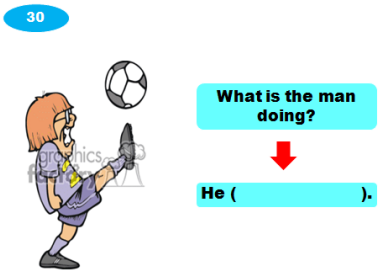
Jack ( ).

28

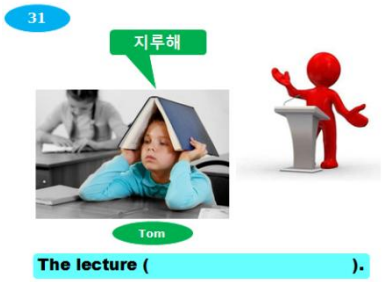
( ).

29

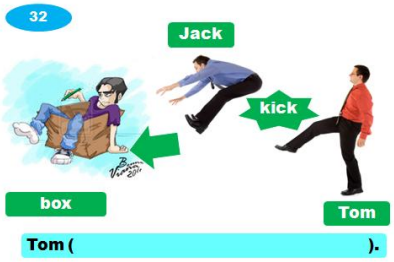
30



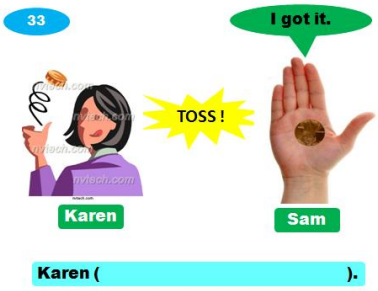
31



32



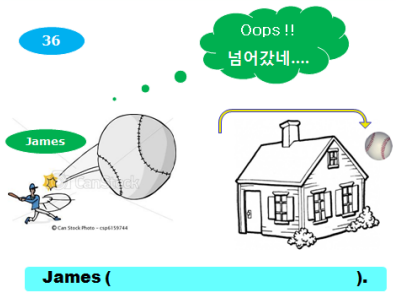
33



34

35

36



APPENDIX 4. Guided Writing Task

4.1 Recalling some scenes or activities

부인: Susan　　남자: Chris　　아이: Sam

나쁜 아이: Tom　　나쁜 아이 형: Jack

(1) 부인이 모자를 쓰고 장갑을 낀다.

(2) 부인이 아이에게 동전을 준다. (아이가 동전을 받음)

(3) C 와 아이가 물을 마신다.

(4) C 가 아이의 접시에 물을 붓는다.

(5) 부인이 아이들에게 선물을 나눠준다. (아이들이 선물을 받음)

(6) 아이가 문밖으로 걸어 나와서 계단에 앉는다.

(7) 부인이 아기 때문에 슬프다.

(8) 아이가 밀가루 반죽을 프라이팬에 넣는다.

(9) C 가 침대에서 나와서 신발을 싣는다.

(10) C 가 의자를 식탁으로 옮겨서 그 의자에 앉는다.

(11) C 가 잼을 pancakes 에 바른다.

(12) 나쁜 아이가 아이의 인형을 담 너머로 던져버린다.

(13) C 가 아이들 쪽으로 달려간다.

(14) C 가 아이에게 엉덩이를 발로 걷어차라고 코치한다.

(15) Jack 이 아이들로 하여금 싸우게 한다.

(16) 싸움 때문에 Jack 이 화가 났다.

(17) 아이가 나쁜 아이를 때려서 땅에 쓰러뜨린다.

(18) Jack 이 C 를 창문 밖으로 끌어낸다.

(19) Jack 이 C 에게 자신을 때리라고 말한다.

(20) 부인이 Jack 에게 C 와 악수하라고 조언한다.

(21) C 가 집으로 걸어 들어간다.

(22) 부인이 C 에게 아이를 병원으로 데려가라고 부탁한다.

APPENDIX 5. Grammaticality Judgment Task

5.1 Pretest

※ 다음 문장들의 문법성을 판단하여 점수를 부여하고, 문법적으로 틀렸다고 생각하는 부분은 밑줄을 긋고 바르게 고치시오.
(1 점: 문법적으로 틀림 2 점: 모르겠음 3 점: 문법적으로 맞음)

1. The boy makes me happily.	1	2	3
2. Susan finishes do the laundry.	1	2	3
3. The soldier had many stones and he threw the enemy them.	1	2	3
4. I walk the school every morning.	1	2	3
5. The food smells badly.	1	2	3
6. He wants that Jane is a genius.	1	2	3
7. I like to send this letter to my grandmother.	1	2	3
8. The waiter believes him to be happy.	1	2	3
9. The man looks happily.	1	2	3
10. After lunch, I put my comic books on the shelf.	1	2	3
11. The man moved out of his car.	1	2	3
12. The man gave the dog a bone.	1	2	3
13. Would you mind coming earlier?	1	2	3
14. The kid pushed his dog the river.	1	2	3
15. He gets angry.	1	2	3
16. Jack hammered the metal flat.	1	2	3
17. The bat flies the cave.	1	2	3
18. Joe sneezed the paper off the desk. (*sneeze: 재채기하다)	1	2	3
19. The melody sounds funny.	1	2	3
20. My father will buy me a piano.	1	2	3
21. I feel that he is wrong.	1	2	3
22. There are some flowers in the garden.	1	2	3
23. Can you buy a cake for me?	1	2	3
24. The soccer player kicked the ball into the goal.	1	2	3
25. This cake tastes delicious.	1	2	3
26. I want to dive into the pool.	1	2	3
27. We found him tired.	1	2	3
28. Silk gets smooth and soft.	1	2	3
29. The soldiers marched into the tent.	1	2	3
30. He showed me into the manager's office.	1	2	3
31. We expect organizing a youth club.	1	2	3
32. The man watered the plants flat.	1	2	3
33. The girl ambled through the tunnel. (*amble: 느릿느릿 걷다)	1	2	3
34. I have a pen and I will hand Tom it.	1	2	3
35. I pulled the man the window.	1	2	3
36. He took the wall down.	1	2	3

5.2 Immediate Posttest

※ 다음 문장들의 문법성을 판단하여 점수를 부여하고, 문법적으로 틀렸다고 생각하는 부분은 밑줄을 긋고 바르게 고치시오.
(1 점: 문법적으로 틀림 2 점: 모르겠음 3 점: 문법적으로 맞음)

1. The girl got me happily.	1	2	3
2. Kelly finishes do the dishes.	1	2	3
3. Sam had many balls and he threw his friend them.	1	2	3
4. I sometimes run the school.	1	2	3
5. The milk smells badly.	1	2	3
6. He wants that Jane gives a hint to the child.	1	2	3
7. I like to send New York this package.	1	2	3
8. The waiter believes her to be generous.	1	2	3
9. The man looks unhappily.	1	2	3
10. After lunch, I put my comic books the shelf.	1	2	3
11. The woman jumped out of the trash can.	1	2	3
12. The woman gave the cat a bone.	1	2	3
13. Would you mind getting the book for me?	1	2	3
14. The kid pushed his dog the carton.	1	2	3
15. He gets mad.	1	2	3
16. I hammered the metal flat.	1	2	3
17. A swallow flies the cave.	1	2	3
18. Joe sneezed the paper off the chair. (*sneeze: 재채기하다)	1	2	3
19. The melody sounds interesting.	1	2	3
20. My father built me a castle.	1	2	3
21. I felt that he was kind.	1	2	3
22. There are the apple trees in the backyard.	1	2	3
23. Can you buy a cake to me?	1	2	3
24. The soccer player kicked the ball the goal.	1	2	3
25. This food tastes delicious.	1	2	3
26. He likes to dive into the water.	1	2	3
27. I found her dead.	1	2	3
28. Silk gets smoothly and softly.	1	2	3
29. The soldiers marched up the mountain.	1	2	3
30. She showed him into the hospital.	1	2	3
31. She expects organizing a senior club.	1	2	3
32. The woman watered the plants flatly.	1	2	3
33. The girl ambled across the road. (*amble: 느릿느릿 걷다)	1	2	3
34. I have a bottle and I will hand Jim it.	1	2	3
35. I pulled to the man the window.	1	2	3
36. Sam took the wall down.	1	2	3

5.3 Delayed Posttest

※ 다음 문장들의 문법성을 판단하여 점수를 부여하고, 문법적으로 틀렸다고 생각하는 부분은 밑줄을 긋고 바르게 고치시오.
(1 점: 문법적으로 틀림 2 점: 모르겠음 3 점: 문법적으로 맞음)

1. The ladies got me sadly.	1	2	3
2. Mr. Kim finished doing his homework.	1	2	3
3. Jane had many keys and she tossed her friend them.	1	2	3
4. I usually crawl the slide.	1	2	3
5. The soup smells bad.	1	2	3
6. They want that Pat threw the hammer.	1	2	3
7. John sent Seoul the piano that I bought for him.	1	2	3
8. Chris believes her to be mad about it.	1	2	3
9. The woman looks excited.	1	2	3
10. After dinner, I put my laptop the shelf.	1	2	3
11. The cat jumped into the water.	1	2	3
12. The woman gave him a small gift.	1	2	3
13. Would you mind bringing the book to me?	1	2	3
14. The man pulled his dog the window.	1	2	3
15. He gets crazy.	1	2	3
16. Pat hammered the metal flat.	1	2	3
17. A bat flies out of the cave.	1	2	3
18. Joe sneezed the foam off the cappuccino. (*sneeze: 재채기하다)	1	2	3
19. The music sounds exciting.	1	2	3
20. My father bought me for a cake.	1	2	3
21. He felt that she was not kind.	1	2	3
22. There are the maple trees in the garden.	1	2	3
23. Bill faxed her a letter.	1	2	3
24. The player kicked the ball into the goal.	1	2	3
25. This bread tastes delicious.	1	2	3
26. He intends to dive into the water.	1	2	3
27. I found her fired.	1	2	3
28. Silk gets softly.	1	2	3
29. The soldiers marched down the mountain.	1	2	3
30. I showed him into the dormitory.	1	2	3
31. She expected joining the club.	1	2	3
32. The man watered some flowers flatly.	1	2	3
33. I ambled toward the road. (*amble: 느릿느릿 걷다)	1	2	3
34. I have a basket and I will hand Sam it.	1	2	3
35. John threw the key onto the roof.	1	2	3
36. I took the fence down.	1	2	3

국 문 초 록

본 연구는 구문문법을 기반으로 하는 문법교수를 탐색했다. 구문문법은 기본적인 언어단위로 형태와 의미의 짝인 구문을 가정하고 그 구문들 간의 위계적인 망을 상정한다(Goldberg, 1995, 2006, 2013).

본 연구는 구문기반 교수가 한국 대학생 영어학습자의 문장생성능력을 향상시키는데 도움을 주는 지의 여부와 만약 그렇다면 어느 정도로 도움을 주는지를 연구했다. 아울러, 구문문법 틀 내에서 '구문망'의 요인이 어느 정도 문장생성능력 발달에 역할을 할 수 있는지에 대해서도 검토되었다. 교수효과를 살펴보기 위해 참가자들은 세 개의 교수 집단으로 나뉘었다: 구문망의 형태로 제시된 구문교수 집단과 구문만의 교수 집단, 그리고 비구문교수 집단. 모든 집단은 세 번의 평가와 여덟 번의 교수과정에 참여했으며 목표 구문은 6개의 핵심 논항구조구문(자동이동구문, 자동결과구문, 타동구문, 이중타동구문, 사역이동구문, 그리고 결과구문)으로 구성되었다. 학습자들의 수행은 유도된 번역 과업, 그림 묘사 과업, 안내된 쓰기 과업, 그리고 문법성 판단 과업을 통해 측정되었다.

주요실험결과는 다음과 같이 요약된다. 첫째, 교수직후의 평가에서 모든 교수처치가 문장생성의 향상에 효과적인 것으로 드러났지만, 구문기반 집단들이 비구문집단에 비해 문장생성에 있어서 보다 두드러진 향상을 보였다. 지속적인 교수효과에 관해서는 구문기반 집단의 학습자들이 문장생성 과업에서 유의미한 성과를 보였고 이것은 교수의 효과가 교수직후의 평가 이후 4주 동안 유효한 것으로 판명되었다. 문법성 판단 과업의 결과는 구문기반 집단들이 명시적 교수를 통해 구문지식을 확보했음을 보여주었다.

둘째, 구문기반 집단들은 교수유형에 무관하게 교수직후의 평가에서 문장생성의 향상에 동일하게 효과적인 것으로 드러났다. 구문망의 효과는 전반적으로는 통계적으로 유의미하지 않았지만 이중타동구문과 결과구문과 같이 개별구문에서는 유의미한 결과를 보였다. 지연사후 평가에서는 구문망의 효과가 학습자들의 문장생성능력에 전반적으로 지속적인 효과를 끼쳤다.

마지막으로 논항구조구문의 생산성과 정확성에 관하여 두드러지는 특징들이 나타났다. 실험집단에서 '무응답' 발생의 비율이 현저히 감소하였고, 이 무응답의 사용패턴

을 분석한 결과, 구문기반 교수를 받은 학습자들은 사전 평가에서 무응답이었던 대부분의 평가항목들에서 경동사 'get'을 사용해서라도 그 공백을 채우려는 경향이 강하게 나타났다. 한 편, 문장생성능력에 관한 본 연구의 취지에 부합되는 어순오류, 간접목적어 누락, 그리고 보어 누락과 같은 동사논항구조와 논항의 문법적 실현과 관련된 오류유형들을 분석한 결과, 구문기반 집단들에서 그 오류들이 크게 감소되었다. 또한, 실험집단에서 전치사 누락과 과잉생성 'be' 구문의 사용이 두드러지게 감소하는 현상도 인상적인 부분이었다.

본 연구는 구문문법 기반 교수가 한국 대학생 영어학습자의 문장생성능력 향상에 도움을 줄 수 있다는 점과 문장구조와 관련하여 전통적인 문법교수 보다 좀 더 나은 대안을 제시한다는 점에서 그 의의와 가치가 있다.

주요어: 구문문법, 구문지식, 문장생성능력, 영어논항구조구문

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