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The Impact of Form-Focused Instruction on the Accuracy of Korean Learner Production: A Meta-Analysis of Technique and Timing

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This study examined how key factors of FFI (degree of explicitness, L1 similarity, proficiency level, and grammar type) influence the accuracy of production. A total of 22 experimental studies, all of which had Korean participants and productive assessments of speech or writing, were selected for analysis. Results revealed that explicit grammar emphasis was more effective for morphology that had a small, binary scope (present or absent). Results further revealed that explicit emphasis of grammatical features dissimilar from the L1 significantly increased accuracy of learner speech and writing. In contrast, implicit emphasis was effective with grammatical features that had a larger scope (e.g., many lexical forms or syntactic arrangements), as well as with grammatical features that were similar to the L1. Findings suggest that explicit emphasis of a smaller scope and implicit emphasis of a larger scope are both useful, since they do not cognitively overload the learner during communication.

Key words: Form-Focused Instruction, FFI, explicit, L1, proficiency, grammar, Korean

1. INTRODUCTION

It may be said that if something can be firmly established about Instructed Second Language Acquisition, it is that nothing has been established firmly. Whereas some studies describe the benefits of grammar emphasis for promoting accuracy in speech or writing (DeKeyser, 2015; Ferris, 2004; Goo & Mackey 2013; Sakai 2011), other studies cite the shortcomings of the same techniques (Ellis & Sheen, 2006; Sheen, 2010; Truscott 1996, 1999; VanPatten, 2014). There are no definitive studies suggesting that any type of grammar instruction is a panacea. At the same time, we have to ask, if there is no

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substantial and definitive effect for this instruction, why do purely communicative experiments like the Bangalore Project fall short of providing the accuracy needed in learner speech or writing (Ellis, 2002; Thornbury, 2002)? Secondly, why do efforts to emphasize grammatical features in class, referred to as Form-Focused Instruction (FFI), sometimes fail (Ellis & Sheen, 2006; Sheen, 2010; Truscott 1996, 1999)? It may be that key influences have been missed, limiting the ability to effectively utilize such techniques.

Despite an impressive body of research revealing the benefit of both implicit and explicit FFI (Norris & Ortega, 2000; Spada & Tomita, 2010), some researchers continue to claim that "at any stage of acquisition, mental representation of language is largely unaffected by instructional efforts directed at formal properties of language" (VanPatten, 2014, p. 105-106). It is true that there is a cognitive component to language development. Learners do not merely mimic patterns within the input they encounter (Selinker, 1972). This view is exemplified by analysis of stage-by-stage learner development of grammar. Regarding negation, for example, second language learners may use expressions such as, "I no eat hamburger," which are almost certainly never revealed within aural or textual input (VanPatten, 2014). Although there is certainly a cognitive influence on the processing of grammar for production, unconscious (implicit) knowledge of speaking and writing is still influenced by conscious (explicit) knowledge gained from grammar instruction (DeKeyser, 1994; Ellis, 1994; Kim & Rebuschat, 2010; Sonbul & Schmitt, 2013). It is this influence, the interface between knowledge types, which explains the success of implicit and explicit FFI as a means of improving production (Afitska, 2015; DeKeyser, 2015; Ellis, 2002; Norris & Ortega, 2000; Schenck, 2017; Spada & Tomita, 2010).

Despite empirical evidence for efficacy, there seems to be a continued reluctance to fully embrace FFI. One major reason lies in the polarization of researchers toward ideological extremes. When problems emerged with traditional pedagogical approaches that taught grammar through translation, the learning of rules, or habitual repetition of language drills (Chastain & Woerdehoff, 1968; Hendrickson, 1978; Muller, 1965; Samimy, 1989), researchers tried to find alternative approaches, avoiding integration of language learning strategies. This perspective is illustrated by the development of focus on form, one type of FFI. This technique, which embeds grammar emphasis within more communicative and naturalistic contexts (Doughty & Williams, 2004), was used as an alternative, rather than a complement, to focus on forms, an FFI technique that presents grammatical concepts before a task is performed (R. Sheen, 2003). Such black and white assessment has led to sweeping claims about the effectiveness (or ineffectiveness) of grammar teaching and other FFI techniques. In reality, a holistic perspective is needed to foster synergistic integration and utilization of teaching strategies.

Another reason for the reluctance to fully embrace FFI is methodological inconsistency in past studies, which often included measures of conscious (explicit) knowledge, rather

than unconscious (implicit) knowledge found in speech or writing (VanPatten, 2014). There are indeed methodological inconsistencies in past research that have led to confusion. In addition to widely disparate forms of assessment, variability in proficiency levels, L1s, and grammar types made interpretation and generalization of studies problematic. Due to philosophical and methodological shortcomings with past research, there is a lack of clarity about if and when to used instruction that emphasizes grammar. Comprehensive examination and reinterpretation of research is needed. Variables such as degree of explicitness, L1, learner proficiency, and grammar type may allow for a more comprehensive understanding of how FFI impacts accuracy of the learner. Such inquiry may not only answer questions about if FFI should be used, but when, and in what way. Key variables and trends that affect FFI may be identified, allowing educators to substantially increase learner accuracy in speech and writing. Various types of FFI, as well as potential influences, will be further explained in the literature review.

2. LITERATURE REVIEW

2.1. Types of FFI

Despite controversy over FFI, research has exposed a variety of techniques that can facilitate acquisition. As pointed out by Sharwood Smith (1991), these techniques vary according to explicitness, which refers to the degree of attention directed toward a grammatical feature (Nassaji & Fotos, 2011, p. 39). Activities that require verbal explanation of rules are considered explicit, since they force a learner to pay attention to the target structure. Tasks that indirectly encourage noticing, such as the highlighting or underlining of text, are regarded as implicit. These techniques indirectly engage the learner as meaning in natural communication is negotiated.

Whereas some feel that implicit techniques like bolding, underlining, or italicizing of text improves language development (Alanen, 1995; Lee, 2007; Rassaei, 2012, 2015; Sarkhosh, Taghipour, & Sarkhosh, 2013), others argue that the same techniques have little or no impact on speaking or writing (Cho 2010). Likewise, there is a lack of consensus about the implicit flooding of input with examples of a target feature; not all experimental adaptions of the technique appear to be equally effective (Leow, 1997; Rassaei, 2012). Overall, variability of results suggests that while implicit techniques increase the opportunity for consciousness raising (Sharwood Smith, 1981, 1991, 1993), they do not always guarantee perception. In addition, some grammatical features like the third person singular -*s* may be more difficult to perceive and acquire, explaining problems with FFI that uses textual modification (Loewen, Erlam, & Ellis, 2009).

Like other types of textual adjustment, Processing Instruction (PI) increases the likelihood that attention is paid to grammatical form. PI is implemented in the following three steps (Nassaji & Fotos, 2011, p. 24):

1. Learners are provided with information about the target linguistic form or structure.
2. Learners are informed of the input processing strategies that may negatively affect their processing of a target structure.
3. Learners carry out input-based activities that help them understand and process the form during comprehension.

While the technique does not explicitly outline grammar rules, more direct attention to form is drawn through explanation of processing strategies (Benati, 2005; Uludag & VanPatten, 2012). The activities also increase saliency of morphological forms and associated meanings through inductive reasoning (Marsden & Chen, 2011). Like other types of textual modification, evidence does not reveal a definite impact on the accuracy of learner production. This perspective is revealed by a study of the regular past tense in Chinese (n=47) and Greek (n=30) secondary schools; the study revealed that while scores on an interpretation task were higher for the PI group, accuracy in production was lower than both the traditional (explicit) instruction and meaning-based output groups (Benati, 2005). Another study also revealed that traditional pattern drills had a larger impact on productive tasks than PI with respect to Russian prepositional phrases (Comer & deBenedette, 2011). In general, results of PI studies indicate that, while the technique is promising, there is no clear positive impact on learner speech or writing.

Like techniques designed to improve input, pedagogical strategies that enhance learner output may encourage the noticing of grammatical features (Swain, 2004). In a study by Izumi (2002), a text reconstruction task, referred to as a dictogloss, was used to enhance the use of relative clauses for ESL learners. Results suggested that learners who are pushed to produce output will outperform learners who are only exposed to input for comprehension. Results further suggested that visual input enhancement is not a replacement for student tasks that require meaningful output (Izumi, 2002). Although output enhancement via dictogloss is not explicit, student groups may explicitly talk about grammar as they construct a story. This action, referred to as meta-talk, may improve language performance, explaining results of prior research (Storch, 2008). Increased accuracy due to output-based instruction may also be related to grammatical feature type. Features such as the relative clause require a syntactically driven word order, which may best be facilitated through practice in speech or writing.

Activities that provide feedback have also revealed potential gains for learners. In the form of direct and explicit explanation of errors, written corrective feedback has been used

to produce significant achievement in learner accuracy for the past simple tense and definite article; at the same time, the effect on prepositions has been limited (Bitchener, Young, & Cameron, 2005). Explicit discussion of grammatical rules without correcting an error, referred to as metalinguistic feedback, has also revealed gains in writing for the indefinite article (Shintani & Ellis, 2013). While written feedback may be effective (Ferris, 2004), the technique is not without controversy. Some researchers have insisted that it is superfluous (Truscott, 1996, 1999). Like written feedback, the use of recasts and prompts in oral communication has both supporters and detractors. While some believe the techniques increase accuracy in speech (Goo & Mackey 2013; Sakai 2011), others believe this impact is negligible (Ellis & Sheen, 2006). According to Sheen (2010), the degree to which either oral or written feedback is explicit appears to signal the effectiveness of a technique, with more explicit forms of feedback leading to more significant gains in accuracy. While insightful, more research may be needed to assess the accuracy of this claim.

2.2. Key Influences on the Effectiveness of FFI

While there are a number of promising techniques for the emphasis of grammar, results often fluctuate widely, making definitive assertions of efficacy difficult. Various pedagogical methods are effective in some studies, and not in others. One main reason for this variability is illustrated by Williams (1995), who found that L1 influence affects the efficacy of some FFI techniques. Within L2 input that is flooded with a syntactic feature, learners acquire new word orders, yet lack the ability to discern inaccuracy of word orders that are permissible in their L1 (Williams, 1995). This issue appears to suggest that more grammatical emphasis is needed for problems caused by L1 interference. While potentially useful, this assertion is not easy to verify through past research. A major methodological flaw, linguistic variability of participants, has limited interpretation of L1 influence in most findings. Like the study of Izumi (2002), which used participants from a host of different nationalities (Arabic, Chinese, French, Japanese, Kazah, Korean, Persian, Polish, Portuguese, Spanish, Thai, and Turkish), most research results represent a collation of highly disparate native influences. More focused study of participants with a single L1 is needed to better understand how grammatical features should be emphasized.

Like L1 disparities, characteristics of grammatical features may influence the effects of FFI (Schenck, 2017, 2018). Grammatical features differ in many ways. While the past *-ed* and plural *-s* are highly systematic in form and insalient (hard to hear or perceive due to small size and lack of sonorant vowels), the past irregular tense is highly variable in form and very salient (easy to hear or perceive due to large size and presence of sonorant vowels). Third person singular *-s*, while being both systematic and insalient, also has an

inter-phrasal quality (a link between the subject and its predicate) (Pienemann, 1999, 2005). Unlike other morphological features, the definite article, while morphologically regular, has a great deal of semantic complexity. It is imbued with a variety of meanings that include general cultural use (e.g., the sun), immediate situational use (e.g., Don't go in there. The dog will bite you!), perceptual situational use (e.g., Pass me the salt.), and local use (e.g., the car/the pub) (Celce-Murcia, Larsen-Freeman, & Williams, 1999). Due to such high variability of grammatical characteristics, the impact of FFI is, not surprisingly, often inconsistent in past studies of diverse target features. Some pedagogical techniques such as explicit rule presentation or input flood appear effective for the highly systematic and less salient morphological features like the plural -*s* and past -*ed* (Schenck, 2017). These same techniques, however, may not be equally effective when third person singular -*s* is emphasized (Loewen, Erlam, & Ellis, 2009), which suggests that the inter-phrasal quality has some influence. Other FFI techniques such as corrective feedback appear more effective with syntactic features (e.g., relative clauses or question inversion) or lexical features (e.g., past irregular) (Schenck, 2017, 2018). While such research is insightful, further investigation is needed to clearly understand how grammar type impacts the efficacy of implicit and explicit emphasis of grammatical features.

Yet another factor masking the true significance of past FFI studies is inadequate consideration of correct timing in methodological design, which may be highly dependent upon a learner's language proficiency. Because learners develop grammar in predictable stages (Pienemann, 2005), there may be a distinct time, a "Goldilocks Zone," in which the introduction of FFI instruction is effective for specific grammatical features. Research even suggests that a feature just above the level of a learner's proficiency may be "teachable" (Dyson, 2018; Dyson & Håkansson, 2017; Pienemann, 1989). If there is indeed a correct time to introduce a pedagogical technique, learners will need enough cognitive capacity to handle both the FFI activity and complexity of a grammatical feature. As FFI activities become more explicit, cognitive load increases, just as load increases when grammatical features become more complex (Rahimpour & Salimi, 2010; VanPatten & Rothman, 2015). Because learners at initial stages of linguistic development can only use basic lexical features (e.g., nouns, verbs and adjectives) to describe actions and agents (VanPatten, 2004), morphology associated with nouns (e.g., the plural -*s* and indefinite article) or verbs (e.g., the progressive -*ing* and past -*ed*) may benefit from FFI. As learners gain competence with basic words and morphological features, cognitive load may decrease, allowing for pedagogical emphasis of more complex grammatical structures. Intermediate learners may benefit from FFI activities that emphasize relationships between multiple words and phrases, such as the possessive -*s* or third person singular -*s* (Pienemann, 2005). Advanced learners may benefit from FFI activities that emphasize the construction of multiple clauses and sentences (e.g., relative clauses and conditionals) (Pienemann, 1999, 2005).

Because cognitive capacity and language proficiency may be a key determinant of the success of a pedagogical technique, what grammatical feature is being emphasized should be carefully considered. FFI techniques may sometimes fail if the learner does not have the proficiency level to support the complexity of a feature, explaining inconsistent findings within past research. While timely introduction of a feature is essential (Gholami & Zeinolabedini, 2018), very few studies have examined the impact of FFI instructional types at different proficiency levels. Furthermore, the effect of introducing grammatical features of different complexity at variable levels of proficiency is not well known. Without a holistic understanding of timing and grammatical features, educators lack the ability to effectively utilize FFI techniques.

As revealed through analysis of past research, there are several key factors that have not been adequately considered when conducting FFI, leading to highly inconsistent results. Although such studies provide insightful information to further our understanding of how grammar should be emphasized, they are not placed in a broader context based upon learner characteristics and grammatical complexity. Thus, predictions cannot be accurately made as to how and when FFI should be used. This problem may be illustrated through studies such as that by Williams and Evans (2004). While this study appropriately separated grammatical feature types (participial adjectives and passives) and designed activities according to degree of explicitness, the scope was limited. More grammatical features and FFI techniques needed to be examined to provide a holistic perspective. Furthermore, participants, who were all at the same proficiency level (intermediate), came from a host of different countries. While the method of this study was sound for the time in which it was designed, results reflect only a small facet of a complex linguistic process. Without comprehensive knowledge of FFI influences, teachers cannot hope to learn when and how to effectively use FFI techniques.

Essentially, past studies have failed to provide a holistic perspective from which FFI can be effectively used. More information is needed to understand how and when different types of grammatical features should be emphasized. As may be gleaned from past research, the following key factors must be considered to effectively utilize FFI:

1. The degree to which a technique is implicit or explicit
2. The learner's L1
3. The learner's proficiency level
4. The complexity of a grammatical feature

While impossible in past experimental studies, more holistic meta-analysis yields the potential to address questions about technique and timing in FFI. Through holistic investigation of past studies in one L1 context, more effective pedagogical techniques may

be developed to cultivate accuracy in productive tasks like speaking and writing. To better understand the effects of an L1, this study was designed to examine South Korean participants. An examination of participants who use the Korean language, which has both linguistic differences and similarities to English, may heighten our understanding of how an L1 influences the efficacy of FFI. Collectively, study of major influences on FFI may facilitate the design of more effective curricula and educational technology, thereby hastening the speed of learner acquisition.

2.3. Research Questions

According to the need for further research of FFI, the following questions have been posed:

1. How does type of FFI (degree of explicitness or implicitness) affect the accuracy of Korean learner production? Is explicit FFI more effective with some grammatical features?
2. How does a Korean learner's L1 influence the efficacy of FFI? Is FFI more effective with L1 similar or L1 dissimilar features?
3. How does Korean learner proficiency influence the efficacy of FFI? What grammatical features should be emphasized at what levels?

3. METHOD

The purpose of this study was to holistically examine key influences of Form-Focused Instruction (FFI), thereby exposing better strategies for timing and technique. A search for studies to be included within the meta-analysis was conducted via Google. Search strings using keywords for grammatical features (plural, past tense, past regular, past irregular, passive, third person, questions, article, definite article, indefinite article, phrasal verb, verb particle, conditional), types of FFI treatments (form-focused instruction, focus-on-form, focus-on forms, PI, recasts, text enhancement, dictogloss, output, input, explicit, control group), and participants (Korean) were used to find experimental studies relevant for analysis. In addition to systematic search of Google, two national Korean organizations for foreign language instruction were systematically searched: The Korean Association of Teachers (KATE) and the Korean Association of Foreign Language Education (KAFLE). Over 20 years of journal articles were searched for both organizations, yielding 22 relevant studies for analysis.

Because the efficacy of FFI may vary based upon grammatical feature type, degree of

explicitness, proficiency level, and L1 interference, these variables were operationalized within the study. In order to be included within the present meta-analysis, each experimental study needed to have:

1. An FFI treatment (including time for treatment and methods of delivery)
2. Pretest and Posttest measures of production (either oral or written)
3. Information about the type of grammatical feature targeted
4. Information about the technique necessary to determine degree of explicitness
5. Participants that used only Korean as their L1

Information about proficiency was variable and inconsistent. Thus, this criterion was considered in the study, but was not a requirement. Because delayed posttests were often not conducted, only immediate posttests were used for analysis. Out of 57 studies found through the search, 22 met criteria for inclusion. Within the selected research, a total of 66 treatment groups were present. Because excessive duration could also impact the results of a treatment, only studies conducted over one semester were chosen. While there was some variability in treatment delivery, the similarity in Korean university classes (conducted twice a week at one and a half hours each) helped to enforce some consistency. Average treatment length was two class sessions (three hours). Nearly all treatments had from two to four sessions and ranged from two weeks to one month (see Appendix A for more information).

3.1. Independent Variables

3.1.1. Grammar types

While grammatical features are diverse, they have some common characteristics which allow for categorization into three types. The first type is morphology. Morphological features, which White (2009) may term functional categories, denote aspects of agreement, tense, determination, and number. They are highly systematic affixes or units imbued with grammatical meaning (past *-ed*, plural *-s*, definite article *the*, and third person singular *-s*). In contrast to morphology, lexical items require the use of a new word form, namely, a verb, noun, adjective, adverb, or preposition (White, 2009). These features, such as the past irregular tense, require the learning of new words. A final category for grammatical features is syntax, which refers to a target structure that is correct when a particular word order is used. This category was used for target grammar such as SVO, question inversion, and the that-trace filter (**Who do you believe that goes jogging every morning?* vs. *Who do you think goes jogging every morning?*) (Kim, 2014). In total, four categories were made

for target structures in this study: morphological, lexical, syntactic, and combined. Combined features included multiple categories. The *if* conditional, for example, included aspects of word order and verb tense (either morphological or lexical). Likewise, the present perfect progressive included both regular morphological features and irregular lexical features. Thus, these types of features were included in the fourth category.

3.1.2. Explicit vs. implicit FFI

Most simply, explicit FFI can be defined as any pedagogical technique requiring conscious attention on form (VanPatten & Rothman, 2015). Implicit FFI, in contrast, may push learners to correct a form without explicit information. According to De Graaff and Housen, 2009, the dichotomy between implicit and explicit may be discerned using the characteristics listed in Table 1 (p. 737).

TABLE 1

Differences Between Implicit and Explicit Form-Focused Instruction (FFI)

Implicit FFI	Explicit FFI
1. attracts attention to language form	1. directs attention to language form
2. language serves primarily as a tool for communication	2. language serves as an object of study
3. delivered spontaneously and incidentally	3. predetermined and planned (main focus of activity
4. unobtrusive	4. obtrusive (interrupts communication)
5. presented in context	5. presents target forms in isolation
6. no rule explanation	6. use of rule explanation
7. encourages free use of target form	7. controlled practice of target form

In accordance with this research, any FFI treatment that promoted conscious processing of rules, such as metalinguistic feedback, traditional grammar instruction, or the use of graphic organizers, were labeled as explicit. While recasts may be made more explicit through vocal emphasis of a grammatical form (Kim, 2012), they still represent more implicit pedagogical styles in comparison to metalinguistic feedback and traditional grammar instruction. Both direct and indirect forms of written feedback were identified as implicit. These techniques involve the correction of errors in a communicative context (the essay), yet do not provide explicit information about rules. While direct instruction does provide a correct form, learners must still cognitively determine rules through viewing the correction. The dictogloss may also compel learners to explicitly discuss grammar through meta-talk (Storch, 2008), yet the technique does not involve explicit instruction from the teacher. Thus, the dictogloss was assigned to the implicit category. All 66 treatment groups were used for comparison of effect size for implicit and explicit instruction.

3.1.3. L1 similarity

Due to the large number of both similarities and differences from English grammar, Korean was chosen as the L1 for all participants of experimental studies. There are a large number of FFI studies that examine only Korean participants, further making study of the Korean L1 an ideal choice. It was thought that, through learning how differences in L1 affect FFI, insights may be gained that can make teaching more effective for learners from diverse language backgrounds.

While other attributes like phonological similarity or the free/bound attribute may contribute to acquisition of morphological features, they do not apply to syntactic word ordering (Luk & Shirai, 2009). For consistency, L1 Similarity was simply determined through examining presence or absence of a particular feature in the native language. In Korean, for example, learners have past regular morphology such as 했다, which is used as a regular ending for many verbs. There are also irregular past endings such as (e.g., 쳤다, 불렀다, etc.). Thus, these features were assigned a value of 1, which meant present in Korean. Conditional structures are also present in Korean and were assigned the value of 1. Grammatical features that were absent in Korean, such as the definite article, present perfect tenses, and participial adjectives (e.g., exciting vs. excited) were assigned the value 0. In addition, syntactic features that required a specific word order such as the that-trace filter, verb + noun phrase + to (e.g., *He asked me to go*), and questions were not present in Korean and, thus, were assigned a value of 0. Of the 66 treatment groups, 6 had combined scores for multiple grammatical features (one L1 similar and one L1 dissimilar). Thus, these groups were not included in comparisons of effect size for this variable.

3.1.4. Proficiency level

Assessments of participants' proficiency levels varied into two significant ways. In some studies, learners were assessed by TOEIC scores. In other studies, general assessments of beginner, intermediate, or advanced (with high or low) were used. To collate these levels, the *Educational Testing Service's* (2016) correlation table for TOEIC and CEFR scores was used. This table had six CEFR levels: beginner (A1), high beginner (A2), intermediate (B1), high intermediate (B2), advanced (C1), and high advanced (C2). First, all participants assigned generic levels like intermediate or high intermediate were assigned to a CEFR level. Beginner or low beginner participants, for example, were assigned to the level A1. High beginner learners were assigned to the level A2. In cases where TOEIC scores were reported, the values were used with the correlation chart to determine proficiency level. Scores below a minimum score for a level were assigned to the preceding level. In cases where a range of scores was reported, this range was averaged. Of the 66 treatment groups

within the study, only 50 had information for calculating proficiency level. Thus, 16 treatment groups were excluded from analysis of effect size.

Due to inconsistencies in past research, proficiency scores must be interpreted with caution. While results of this meta-analysis can help identify trends leading to better timing of FFI, results must be substantiated through more precise experimental studies of multiple proficiency levels.

3.2. Dependent Variable (Effect Size)

Effect sizes of studies included for study, which served as the dependent variable, came only from assessments of accuracy in productive tasks. The aim of this study was to examine the impact of FFI on implicit knowledge or procedural knowledge, which represents the ability to speak or write accurately without conscious consideration of a target feature. Ellis (2009) has illustrated that the best way to examine such knowledge is through:

1. Elicit feeling or communication of ideas, not rules.
2. Pressure on learners to prevent conscious correction of language errors.
3. Focus on meaning not form.
4. Avoidance of metalanguage.

All assessments chosen for examination within this study involved production with a focus on meaning, communication, and avoidance of metalanguage. Most, yet not all, had time constraints to prevent conscious correction of errors (see Appendix A for more information).

Effect size was calculated by inserting pretest scores (*M2*), posttest scores (*M1*), and associated standard deviations (*SD2 and SD1*) into the Cohen's *d* formula for effect size (Spada & Tomita, 2010, p. 307):

$$d = [M1 - M2] / [\mathrm{SQRT}[(SD1SD1 + SD2SD2]/2]$$

Results of the formula were then compared according to: the degree of explicitness, L1 similarity, and proficiency level. Differences in effect sizes for the independent variables were graphically compared and then subdivided by grammatical feature type. It was hoped that further analysis of grammatical features could glean additional insights concerning how and when FFI should be introduced.

4. RESULTS AND DISCUSSION

4.1. Type of FFI: Implicit vs. Explicit

Average effect sizes of implicit and explicit FFI were quite similar, yielding values of 1.90 and 1.91, respectively (Table 2).

TABLE 2

Mean Effect Sizes for Implicit and Explicit FFI

	Implicit vs. Explicit FFI	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Cohen's D	Implicit	49	1.90	1.64	.23
	Explicit	17	1.91	1.26	.30

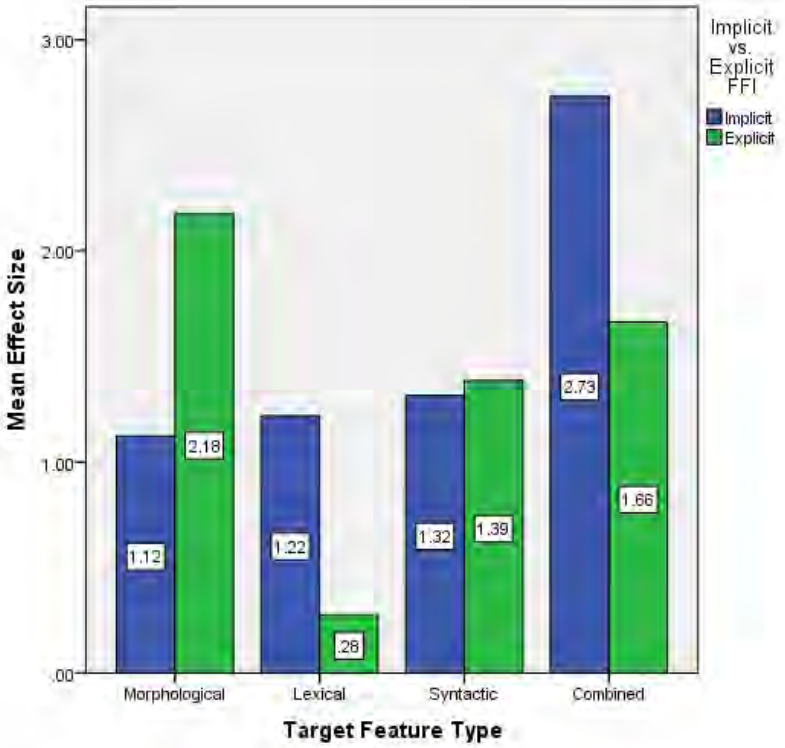
While it is tempting to conclude that there is no significant difference between utilization of either technique, separation of data based upon grammatical feature type yielded very different results (Figure 1). Although seemingly similar when overall group means were calculated, separation of instructional styles (explicit vs. implicit) by grammar type yielded a large difference in effect size for morphological, lexical, and combined features (Figure 1).

Regarding morphology, explicit instruction (d = 2.18) had nearly double the effect size of the implicit type (d = 1.12). A reason for this finding may lie in characteristics of morphological features, which are primarily "binary" in nature. Plural -*s*, for example, is either present or absent. Such a limited scope may allow for explicit focus without undue strain on cognitive resources, thereby allowing for increased accuracy in natural communication. Since all assessments were communicative and productive in nature, the claim that explicit instruction is only effective for tests of conscious knowledge (VanPatten, 2014) is partially refuted. Explicit instruction seems to have a substantial impact on accuracy of morphological features in speech and writing.

According to Figure 1, implicit instruction was more effective for lexical features like the past irregular tense. Whereas effect size for implicit instruction was 1.22, effect size for explicit instruction was only .28. While there were not many groups available for this category (three implicit groups and one explicit group), the disparity may suggest that explicit instruction is either unproductive or unnecessary for lexical features, which are easy to perceive within input, yet highly diverse. Learners may be able to perceive these features more naturally through implicit instruction. At the same time, this form of instruction does not drain cognitive resources through conscious concentration on a range of grammatical forms (e.g., past irregular tense or phrasal verb). Unlike lexical features, syntactic features did not appear to benefit more from either implicit or explicit FFI. Effect

FIGURE 1

Mean Effect Sizes for Implicit and Explicit FFI Based on Grammar Type



sizes for this feature type were roughly the same, 1.32 and 1.39 for implicit and explicit instruction, respectively. This finding may suggest that learners benefit from productive tasks that target form regardless of degree of explicitness.

Combined target structures appeared to benefit more from implicit instruction ($d = 2.73$) than explicit instruction ($d = 1.66$). As in the case of lexical grammatical features, the larger scope of combined target features may drain cognitive resources when taught explicitly, explaining why the effect size was lower. Overall, effect sizes suggest that, whereas explicit instruction is useful for simple and systematic features that can easily be explained, implicit instruction is more useful for lexical and combined target structures that have a larger scope. Thus, features such as plural -*s*, past -*ed*, or progressive -*ing* may best be learned through explicit instruction; features such as the past irregular tense or phrasal verbs may best be taught through implicit instruction. Essentially, implicit instruction lessens the cognitive load of diverse lexical and syntactic forms, thereby allowing a learner to process structures in productive activities like speech or writing.

4.2. L1 Similarity

Results suggest that L1 similarity does indeed have an impact on the effectiveness of form-focused instruction. The effect of FFI on features with no similarity to the Korean L1 was considerably larger (Table 3).

TABLE 3

Differences in FFI Effect Size based on L1 Similarity

	L1Similarity	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Cohen's D	None	37	2.13	1.15	.19
	Similar	23	1.12	1.40	.29

The mean average for L1 dissimilar features was 2.13, a value higher than the mean average of L1 similar features (M = 1.12). Results suggest that FFI is more effective for grammatical features that are highly dissimilar from the learner's L1.

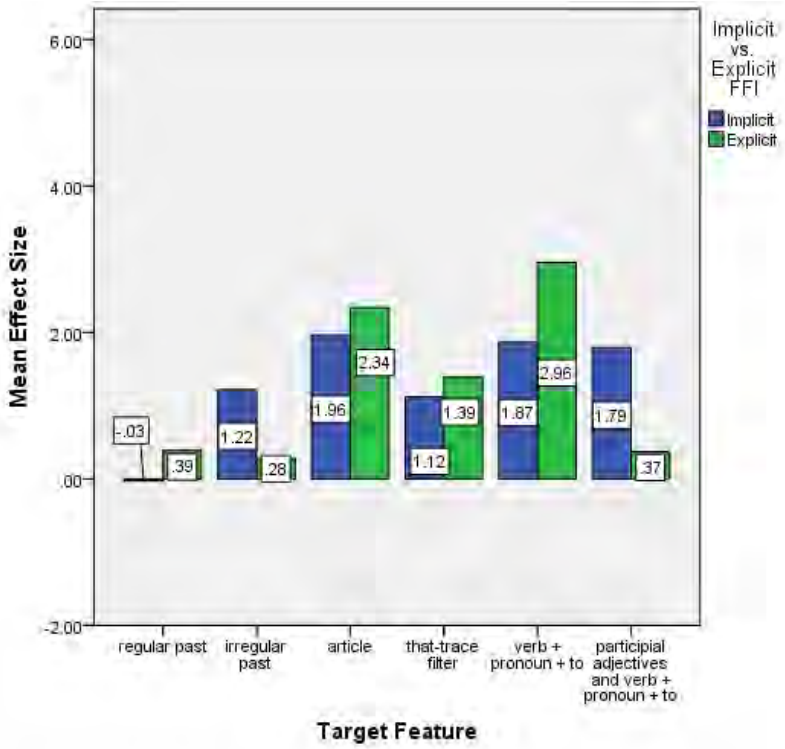
There were no significant differences between use of implicit or explicit FFI with either L1 similar or L1 dissimilar features. For L1 dissimilar features, mean effect sizes for implicit and explicit FFI were 2.14 and 2.12 respectively. L1 similar features had lower effect sizes overall. Whereas implicit instruction for L1 similar features had a mean effect size of 1.20, explicit instruction had an effect size of only .33. Although not significantly different, heightened values for implicit instruction with L1 similar features might be an indication that explicit emphasis is unnecessary or even counterproductive when there is little linguistic interference. Explicit instruction may unnecessarily draw cognitive resources away from a natural inclination to use an L1 similar feature correctly, explaining the discrepancy. It appears that similar grammatical features are more naturally acquired through implicit instruction.

Effects sizes for individual grammatical features also appear to reveal a coexisting influence between L1 similarity (or dissimilarity) and instructional type (explicit vs. implicit). As revealed in Figure 2, L1 similar features like the regular past and irregular past show smaller effect sizes than other L1 dissimilar features (article, that-trace filter, verb + pronoun + to, and participial adjective).

Nearly all L1 dissimilar features, with the exception of those in a collated study (combination of participial adjectives and verb + pronoun + to), benefitted more from explicit instruction. This finding provides further support for the hypothesis that explicit instruction is more beneficial for L1 dissimilar features. Learners may need explicit emphasis to better understand the semantic and syntactic differences caused by L1 interference.

FIGURE 2

Mean Effect Sizes for Implicit and Explicit FFI Based on Grammatical Feature



For L1 similar features, the effect of implicit vs. explicit instruction may have been influenced by grammatical feature type. Whereas the past *-ed* had a negative effect size for implicit instruction (d = -.03), there was a larger positive effect size for explicit instruction (d = .39). As previously suggested, a simple binary scope (present or absent) may heighten the utility of explicit pedagogical styles, allowing for increased accuracy without overloading cognitive resources needed for natural communication. In contrast to its regular counterpart, the past irregular tense had a larger effect size for implicit instruction (d = 1.22) than explicit instruction (d = .28). Acquisition of this feature's highly diverse lexical forms may require an implicit style, which can reduce cognitive load, thereby promoting more effective communication in speech or writing.

While it is true that average effect sizes for L1 similar features tended to be lower than other L1 dissimilar features, implicit instruction does appear to have a greater impact on lexically diverse features like the past irregular. Combined morphosyntactic targets (participial adjective and verb + pronoun + to) also have a higher effect size for implicit instruction. Commonalities between lexical and combined features suggest that, when

grammar has a larger scope, more indirect and less obtrusive forms of pedagogical emphasis are needed. In the case of L1 dissimilar features, explicit emphasis appears to be more effective. Absence of a grammatical feature in the learner's L1 may signify a need for explicit FFI.

4.3. Proficiency Level

Results of differences by proficiency level suggests that level of acquisition has a role in determining the efficacy of FFI (Table 4). Groups at lower proficiency levels appear to benefit more from FFI.

TABLE 4
Effect Size Based on Proficiency Level

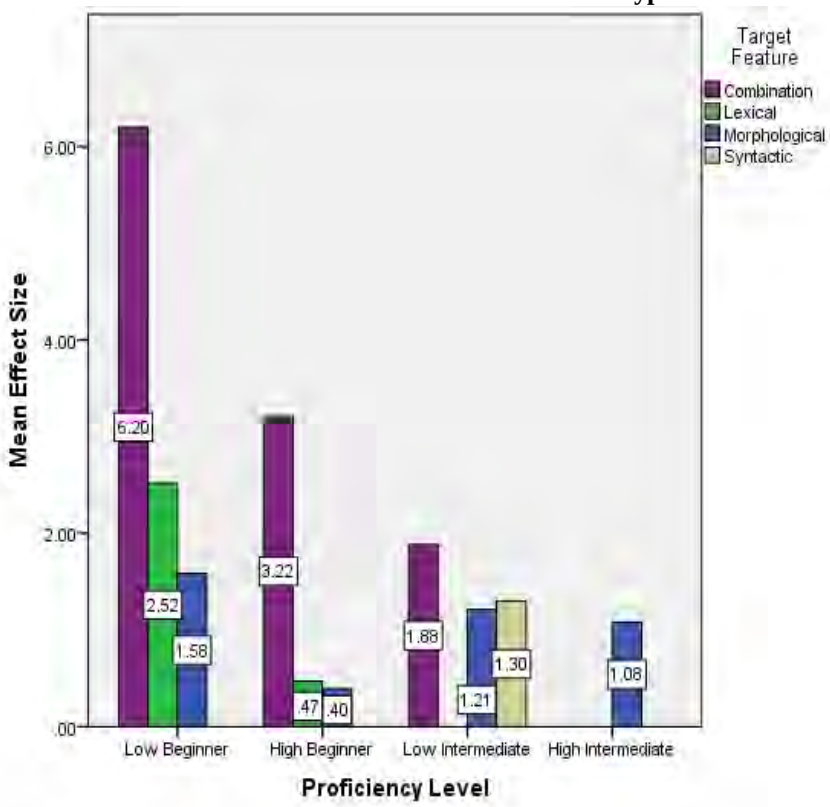
Proficiency Level	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Low Beginner	4	4.13	3.06	1.53
High Beginner	10	1.55	1.59	.50
Low Intermediate	34	1.52	1.18	.20
High Intermediate	2	1.08	.77	.55

Charting grammatical features graphically exemplifies the statistical relationship between FFI and proficiency level (Figure 3). Lower levels of language competence tended to have larger effect sizes for each grammatical feature type, with the exception of morphological features, which were relatively stable across proficiency levels. Overall, FFI instruction appears to be more useful at lower levels. As learners gain competence in the use of grammar and move on to higher proficiency levels, they may benefit more from an emphasis on content, rhetorical aspects of language, or even sentences with advanced clauses (e.g., conditional sentences and relative clauses).

The consistency of effect size for morphological features may suggest that small "binary" features with a limited scope (e.g., plural -*s*, past -*ed*, third person singular -*s*) can be emphasized at all proficiency levels, without adversely affecting production. Before introducing these features, however, known acquisition orders (e.g., Processability Model) and common frameworks of language proficiency (e.g., Common European Framework of Reference) must be collated. This will allow educators to understand when a morphological feature can be effectively emphasized (Pienemann, 2005).

Results of effect sizes based on proficiency level and the implicit/explicit attribute, while limited, provide interesting results for further inquiry (Appendix B). At the beginner levels, implicit forms of instruction had a higher mean average (d = 2.99) for effect size than explicit forms of instruction (d = .33). At the low intermediate level, the implicit group mean (d = 1.38) was lower than the explicit group mean (d = 1.76), albeit only slightly. For

FIGURE 3
Mean Effect Sizes for FFI Based on Grammar Type



the high intermediate level, there was a clear advantage for explicit instruction, which had an average effect size (d = 1.63) that was more than double the implicit group (d = .53). Learners at higher levels of proficiency may be better able to handle the cognitive load from more explicit forms of FFI. Because of the limited number of groups at the lowest and highest proficiency levels, more extensive study of the interaction between proficiency level and degree of explicitness is needed to check validity of the results.

Overall, this study confirms results of prior research, which suggests that low proficiency FFI is more effective (Schenck, 2017). While insightful, additional research is needed to establish which grammatical features should be emphasized at each stage of linguistic development. Because prior studies assessed proficiency of participants in highly disparate ways, more precise measures of linguistic competence are needed to improve our understanding of timing in FFI.

5. CONCLUSION

Intensive study of Korean learners has yielded key insights that may increase the effectiveness of FFI. Because grammar type, degree of explicitness, L1, and proficiency level all affect FFI, technique and timing cannot be truly understood without simultaneous and holistic consideration of factors. Overall, results suggest that type of grammatical feature is a significant determinant of the efficacy of FFI. Morphological features (e.g., past -*ed*) were more highly influenced by explicit techniques. The binary nature of these features, which were either present or absent, may not cognitively overload the learner when explicitness increases. In contrast to morphological features, lexical features (e.g., past irregular tense) and combined grammatical features were more accurately produced when implicit FFI was employed. This finding may suggest that more complex and variable grammatical features overload cognitive resources when taught explicitly. Regarding syntax, very similar effect sizes for implicit and explicit FFI may suggest that all productive tasks compel learners to use the correct word order, regardless of degree of explicitness. Concerning influence from the L1, presence or absence of a grammatical feature in Korean appears to impact the effectiveness of instruction. FFI used with L1 dissimilar grammatical features yielded larger effect sizes. As for proficiency level, FFI at lower levels was more effective. The efficacy of FFI at each proficiency level, however, was influenced by degree of explicitness. Whereas implicit FFI was more effective at lower levels of proficiency, explicit FFI was more useful at higher levels.

Through combined analysis of multiple influences, results of the present study have revealed key insights which may increase the effectiveness of FFI. The following aspects of FFI should be considered when designing instruction:

1. Explicit FFI appears to be more effective for morphological features with a small scope.
2. Implicit FFI may be more effective for lexical features or combined features with a large scope.
3. Either FFI technique may be equally effective for syntactic features.
4. Explicit FFI appears more effective for L1 dissimilar features.
5. FFI (implicit FFI in particular) may be more effective at beginner levels.
6. Explicit FFI may be more effective at higher proficiency levels.

Essentially, grammatical features that are limited in scope, absent from the learner's L1, and developmentally appropriate appear to be best served using explicit FFI. Designing FFI in this way ensures that conscious focus on a grammatical feature does not overload the learner or hinder communication. Implicit FFI, in contrast, appears most effective when

a grammatical feature is larger in scope (including either combined or lexical structures) and present in the L1. Results suggest that an indirect form of emphasis puts less strain on cognition, allowing a learner to communicate while maintaining some awareness of a target structure.

Although insightful, meta-analyses do have limitations. In the future, more comprehensive experimental studies must be designed to expand our understanding of various grammatical features, as well as the diverse pedagogical means used to emphasize them. Such studies must precisely define learner characteristics (L1 and proficiency level) so that the effects of FFI can be placed within context. Without an understanding of learner background, we cannot hope to comprehend how and when a grammatical feature should be introduced. While the magnitude of holistic studies may seem infeasible, a corpus of small research projects may provide the perspective of FFI needed to learn both timing and technique. Through standardized administration of methodologically sound studies, which carefully and consistently measure the key influences of FFI, a comprehensive understanding of the acquisition process may emerge, thereby making it possible for teachers (or even educational software designers) to increase accuracy in speech and writing.

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Reference marked with asterisk(*) were used in the meta-analysis.

APPENDIX A

Information about Studies Used for the Meta-Analysis

Study	Target Feature	Treatment and Treatment Groups	Treatment Duration	Type of Assessment
S. Kim & Y. Cho (2017)	regular past / irregular past	recasts	3 sessions about 30 minutes each	communicative task / 10 minutes
H. Cho (2012)	regular past / irregular past	recast, metalinguistic feedback prompt, elicitation prompt	4 week period / three 50 minute conversational tasks	oral Elicitation Task
D. Kang (2011)	conditional	Input-Enhancement, Input Processing,	2 stage treatment	dictogloss
D. Kang (2003)	conditional	all output and production group, attention to meaning and then form group	6 hours for two weeks	sentence production task
M.J. Song & B.R. Suh, (2008)	conditional	picture cued writing, reading comprehension	3 sessions over a month period	contextual sentence completion task
B.R. Suh (2014)	conditional	direct feedback, indirect feedback	feedback group got 5 minutes to review (2 days later)	production test
M.S. Kim (2012)	regular past	indirect feedback, direct written feedback	writings over 3 week period	timed journal entries (50 minutes)
M. Yang (2008)	present perfect progressive	Input enhancement, dictogloss	2 hour treatment / in 16 week semester	production test / ten minutes
M.J. Song & G. Lee (2017)	article	indirect feedback + metalinguistic information, indirect only	weeks 5-12 writing treatment and answers	blogs and rating with native speaking professor
J.H. Kim (2017)	article	recast, metalinguistic feedback	2 treatment sessions / each group retold a story	picture oral description task
S.S. Jang (2016)	article	direct feedback, metalinguistic feedback, revision	4 sessions over a 4 week period	first third and fourth dictogloss used for analysis

S.S. Jang (2013)	article	indirect, direct, and metalinguistic feedback	3 treatment sessions over 2 weeks	narrative based on meaning not grammar
J.H. Kim (2016)	article	recast and metalinguistic feedback	2 treatment sessions over two weeks	Oral elicitation test
J.E. Kim (2014)	that-trace filter	form-focused instruction and meaning-focused instruction	3 sessions of treatment over 3 days	Oral imitation test
S.S. Jang (2011)	question	recasts, prompts	2 treatments in one week and immediate post-test	speed dictation test / 20 seconds each sentence
B. Kim (2009)	regular past and present perfect	direct, indirect feedback	6 drafts during a 16 week period	40 minute timed writing post-test
J.H. Kim (2012)	regular past and irregular past	recasts	4 - 45 minute sessions	conversation session
N. Kang (2009)	Verb + NP + to infinitive / ask me to	negative feedback, input enhancement	8 - 25 minute form focused treatment over 4 weeks	picture description task / 15 seconds per sentence
M.J. Song (2007)	conditional	input enhancement, picture-cued writing	3 sessions of about 30 minutes over a 3 week period	production test about 30 minutes
M. Yang (2004)	present perfect progressive	comprehension, production	2 hour class	6 sentence production test
Kim, B. (2002)	participial adjectives and Verb + Pronoun + to + V	recast, consciousness raising	Eight 25-minute sessions over 4 weeks	picture cues and responses / recorded responses
K. Yeo (2002)	participial adjectives	input enhancement, dictogloss	20 to 30 minutes twice (once each week for two weeks)	open ended oral questions

APPENDIX B

Effect Sizes for Implicit and Explicit Instruction Based on Proficiency Level

Proficiency Level	Implicit/Explicit	Mean	*N*	*Std. Deviation*
Low Beginner	Implicit	4.13	4	3.06
High Beginner	Implicit	1.85	8	1.65
	Explicit	.33	2	.08
Low Intermediate	Implicit	1.38	22	1.35
	Explicit	1.76	12	.75
High Intermediate	Implicit	.53	1	.
	Explicit	1.63	1	.

Note. Data for explicit low beginner was not available.

Applicable levels: Tertiary

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