

An Investigation of the Relationship Between Grammar Type and Efficacy of Form-Focused Instruction

Schenck, Andrew Douglas
(State University of New York (SUNY) Korea)

Schenck, Andrew. An Investigation of the Relationship Between Grammar Type and Efficacy of Form-Focused Instruction. *The New Studies of English Language & Literature* 69 (2018): 223-248. Because phonological, semantic, and morphosyntactic characteristics of grammatical features can have a significant impact on form-focused instruction, utilization of different grammatical features to test new language teaching techniques may conflate determinations of efficacy or inefficacy. The purpose of this study was to holistically examine different types of instruction, comparing them with grammatical features to evaluate effectiveness. Forty-six experimental studies of form-focused instruction were selected for study. Comparison of effect sizes suggests that the efficacy of form-focused instruction differs considerably based upon the type of grammatical feature targeted. Input-based instruction (e.g., input enhancement or explicit rule presentation) appears more useful for features like the plural -s, past -ed, and third person singular -s, which are phonologically insalient, yet morphologically regular. Output-based instruction (e.g., corrective feedback or recasts), in contrast, appears more effective with grammatical features such as questions, phrasal verbs, conditionals, and articles, which are syntactically or semantically complex. Overall, the results suggest that differences in grammar be considered before curricula or pedagogical interventions are designed. (State University of New York, Korea)

Key words: grammar, form-focused instruction, semantic complexity, syntactic complexity, phonological salience, input-based instruction, output-based instruction

I. Introduction

Grammar instruction has consistently swung along a pendulum, moving from an emphasis on accuracy at one end, toward an emphasis on meaning and fluency at the other. Initially, a more explicit, synthetic approach toward linguistic accuracy, called focus on forms (FonFS), was employed

to convey grammar rules needed for proficiency. Via this approach, a language was broken down into constituent parts and modeled for the learner (Long and Robinson 1998). Learners then used pattern drills and grammatical generalizations (Hendrickson 1978), which only included a limited amount of pragmatic information for natural communication (Muller 1965). Using this approach, students were able to utter some phrases or grammatical structures (Miller and Ney 1967), yet they had problems conveying meaning in real situational contexts (Chastain and Woerdehoff 1968; Hendrickson 1978; Samimy 1989).

Following widespread recognition that explicit instruction was, at least in part, ineffective, research highlighting the impact of implicit cognitive processes of language development became more prevalent (Broszkiewicz 2011). Theorists like Chomsky (1975, 1981, 1986) suggested that an unconscious, innate language acquisition device governed linguistic development (Mitchell and Myles 2004). Because learners could discern complex rules of syntax from limited amounts of input, termed Poverty of Stimulus (POV), innate cognitive processes became regarded as the key components of language development (Berwick, Pietroski, Yankama, and Chomsky 2011; Foraker, Regier, Khetarpal, Perfors, and Tenenbaum 2009). Due to this largely cognitive view of language learning, researchers concluded that, while careful manipulation of input could foster morphosyntactic development, conscious knowledge of grammatical features was superfluous for acquisition (Krashen and Terrell 1983). Instead of explicitly emphasizing grammatical accuracy or drills, educators like Prahbu (1987) developed communicative approaches that emphasized authentic, meaningful tasks (Beretta and Davies 1985). These approaches did facilitate communication, yet they failed to cultivate grammatical competence needed for advanced proficiency. French immersion programs in Canada, for example, which utilized large amounts of input and numerous communicative tasks, continued to promulgate glaring errors

with morphology and syntax (Williams 1995).

Although more recent meta-analyses appear to settle the debate, affirming the efficacy of explicit grammar instruction (Norris and Ortega 2000; Spada and Tomita 2010), opponents continue to assert that explicit techniques for grammatical emphasis are ineffective. VanPatten (2014: 107), for example, points out that prescriptive rules are not what “winds up in the learner’s mind/brain.” Although it is true that cognitive conceptions of grammar do not match instructional designs, pedagogical emphasis of grammar still appears to have an impact. Research of the Teachability Hypothesis, for example, suggests that introduction of a grammatical feature at the proper cognitive stage of development could be effective (Pienemann 1989, 1999, 2005). While research does indeed suggest a link between type of grammatical feature and the effectiveness of instructional emphasis, understanding of this relationship remains limited. More research of the impact of grammar type on form-focused instruction is needed so that educators can develop more effective curricula and instruction.

II. Literature Review

Concerning education, Pogrow (2006: 143-144) stated, “The problem is not progressivism, traditionalism, or good intentions. All are essential components of good education. The problem is that influential groups seeking to establish their philosophical dominance invariably take their ideas to illogical extremes.” As with other aspects of education, polarization of language educators toward ideological extremes may have precluded identification of a necessary balance between emphasis on grammatical accuracy and promotion of communication. In addition, arguments over supremacy of individual techniques for form-focused instruction may have hampered the identification of mitigating

circumstances (e.g., type of grammatical feature) which make pedagogical techniques effective or ineffective (Schenck 2017). Researchers, eager in their attempts to provide support for a teaching technique, may neglect to identify circumstances in which a technique is ineffective.

Currently, there is a range of potential techniques to foster grammatical accuracy while maintaining communicative competence. These techniques, which range along a spectrum from more implicit to explicit, differ based upon their modification of either input or output. While research suggests that the input/output distinction may have a significant impact on form-focused instruction (Schenck 2017), controversy over this and other mitigating factors continue to fuel debate, thereby preventing concrete determinations of effectiveness. Because each type of form-focused instruction (input vs. output) may be influenced by mitigating factors like grammar type, more evaluation of these controversies, as well as avenues for further inquiry, must be gleaned from the corpus of existing research.

2.1 Input-Based Instruction

Pedagogical techniques that manipulate input, referred to as input-based instruction (Ellis 2012), may come in many forms. Concerning the modification of text, input-based instruction may come in two forms: textual enhancement and input enrichment. Textual enhancement (TE), which describes the use of underlining, bolding, capitalization, or other forms of highlighting, has been hypothesized to increase acquisition through consciousness raising (Smith 1981, 1991, 1993). Several studies reveal that textual enhancement can have a positive impact on noticing or the acquisition process (Alanen 1995; Lee 2007; Rassaei 2012, 2015a), yet there appears to be little impact on production (Cho 2010). Moreover, while careful structuring of TE may

have a significant impact on efficacy (Sarkhosh, Taghipour, and Sarkhosh 2013), it may adversely decrease comprehension of content (Lee 2007). Input enrichment (IE), which refers to “the process of seeding input with extra tokens of the target structure” (Rassaei 2012: 5), may promote noticing of a grammatical feature through frequent exposure within input (Reinders and Ellis 2009). As with TE, the efficacy of IE is not unilaterally effective within all studies (Leow 1997; Rassaei 2012). Loewen, Erlam, and Ellis (2009), for example, found that flooding input with third person singular -s, while focusing explicit attention on another grammatical feature, had little impact on either implicit or explicit knowledge.

In addition to textual enrichment and enhancement, methods of aural input modification have been used to focus attention on grammatical features. One traditional form of aural input enhancement is explicit rule presentation, which is often taught deductively before learner production (Sheen 2002). Different forms of rule presentation may be effective, such as positive evidence, which provides exemplars describing the correct usage of grammar, or negative evidence, which denotes the presentation of common learner errors (Kubota 1997). As with other forms of input-based instruction, rule presentation may only be effective in some circumstances. The approach appears useful with some features like participial adjectives, yet is relatively ineffective with grammatical features like the passive voice (Williams and Evans 1998). More research is needed to identify the grammatical features best served by this pedagogical technique.

Processing Instruction (PI) is yet another form of input modification which can promote more efficient processing of form/meaning connections (Benati 2005; Uludag and VanPatten 2012). In the sentence, “I walked to school yesterday,” PI may be used to emphasize the past -ed, a phonologically insalient feature that is often ignored when a lexical equivalent (e.g., *yesterday*) is present (VanPatten 2004). While this

technique does not overtly emphasize rules, explicit inductive rule learning may occur in referential activities, which provide feedback about learner interpretation of morphological meaning (Marsden and Chen 2011). Like other forms of input-based instruction, efficacy of PI may differ based upon implementation. Contextual factors like language or type of grammatical feature may impact the effect of treatments. In a study by Comer and deBenedette (2011), for example, traditional pattern drills had a larger effect for production over PI for Russian prepositional phrases. Albeit insignificant, the finding suggests that characteristics of a grammatical feature may impact the efficacy of PI.

2.2 Output-Based Instruction

In contrast to techniques that modify input, output-based instruction attempts to enrich and enhance learner production of a grammatical form (Rassaei 2012). Following the research of Swain (1993, 2005), who claimed that comprehensible input alone is insufficient to ensure interlanguage development, studies examined the impact of utilizing output to push noticing and acquisition (Izumi 2002; Izumi, Bigelow, Fujiwara, and Fearnow 1999). Results suggested that increased output could be more beneficial than input modification for grammatical features like the passive (Izumi 2002). In addition to increased output, studies have also shown that output enhancement, through provision of corrective writing feedback, can promote acquisition of grammatical features like the English article (Bitchener and Knoch 2008, 2009a, 2009b, 2010a, 2010b). Like corrective feedback, recasts, clarification requests, and prompts are forms of output enhancement that promote grammatical accuracy (Harris and Duibhir 2011; Long and Robinson 1998; Lyster and Saito 2010; Rassaei 2015b). Prompts, in particular, which cue learners that a particular morphosyntactic feature is required,

have been shown to improve acquisition of the past simple tense (Yang & Lyster 2010).

As with input-based instruction, forms of output-based instruction have received criticism. While some feel that corrective feedback for writing is effective (Bitchener, Young, and Cameron 2005; Ferris 2004), others believe that it has little or no effect on the acquisition process (Truscott 1996, 1999). Concerning recasts, some researchers feel that their impact is substantial (Goo and Mackey 2013; Sakai 2011), yet others claim it has been “overstated”(Ellis and Sheen 2006; Sheen 2010). Conflicting results garner doubt for the utilization of pedagogical techniques designed to hasten the acquisition of grammar, explaining claims by researchers like VanPatten (2014), who suggest that explicit forms of instruction have little or no impact on learner development of implicit knowledge.

2.3 Form-Focused Instruction: What to Use

Although extensive study of both input-based and output-based instruction has been conducted, research has not been able to definitively conclude the efficacy of either approach. The problem appears to be caused by widespread adoption of a one-size-fits-all methodology, which fails to consider the impact of mitigating contextual factors (Goo and Mackey 2013). Among the contextual influences largely ignored in experimental studies is the disparity of grammatical features. Albeit limited, some research has examined the impact of different grammatical features on the efficacy of form-focused instruction (Schenck 2017; Spada and Tomita 2010). Not surprisingly, results are mixed. Some studies suggest, for example, that instructional emphasis is more effective with simple grammatical features (Williams and Evans 1998), while others imply that emphasis is equally effective for both types of grammatical feature (Housen, Pierrard, and Van Daele 2005). One major issue with

such studies appears to be categorization of grammatical features. Assignments of difficult and easy grammatical attributes may be overly simplistic or even inaccurate. In a study by Spada and Tomita (2010), for example, complex and simple categorizations were determined by using transformations, despite evidence suggesting that there is no link between transformations and degree of difficulty or ease of acquisition (Goldschneider and DeKeyser 2005: 53).

In contrast to the simple and complex attributes often assigned in research methodologies, grammatical features differ in a myriad of ways (Schenck and Choi 2011). As pointed out by White (2009), grammatical features differ according to lexical and grammatical information encoded within the feature. Whereas verbs, nouns, adjectives, prepositions, and adverbs include meaning associated with agents and actions, tense, negation, determiners, inflection, and number have a grammatical function, modifying lexical aspects of an expression. In addition to lexical and functional characteristics, grammatical features vary according to perceptual salience, semantic complexity, morphological regularity, and syntactic complexity (Goldschneider and DeKeyser 2005). Some features are more phonologically salient within input than others, which may impact the acquisition process (Song, Sundara, and Demuth 2009). Lexical features like irregular past verbs, for example, are more salient within verbal input, since they include an entire word with sonorant consonants and vowels, whereas features such as the plural *-s* often contain only one non-voiced consonant (e.g., *books*) (Yavas 2006). Yet another difference between morphosyntactic features is regularity of form. Some features are more systematic than others. The past *-ed*, for example, is highly systematic, while irregular past tenses and phrasal verbs vary significantly. Like irregularity of form, interphrasal complexity may differ significantly depending on grammatical feature type. Whereas question formation requires syntactic movements between phrases (subject noun

phrase and verb phrase), the plural -s feature does not need to be moved from the adjacent noun phrase which it modifies. Pienemann (1999, 2005) confirms that these characteristics do indeed impact the acquisition process. Finally, some grammatical features like the definite and indefinite article, while highly systematic in form, are 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 and Larsen-Freeman 1999).

Despite large differences between grammatical features, they are often treated as a uniform component in which to test the efficacy of various pedagogical techniques. In truth, some forms of instruction may be effective only with specific grammatical features. More research is needed to establish the impact of grammar type on the efficacy of form-focused pedagogical techniques.

III. Research Questions

According to the need for further research of the relationship between form-focused instruction and grammatical feature type, the following questions were posed:

1. How does grammatical feature type impact the efficacy of a form-focused treatment? In what ways is form-focused instruction that emphasizes either input or output (input-based or output based instruction) impacted by type of grammatical feature targeted?
2. How does grammatical feature type impact the efficacy of specific techniques for form-focused instruction (e.g., textual modification of input, modification of oral input, explicit rule presentation, output modification through writing feedback, output modification through oral feedback and increased output)?

IV. Method

The purpose of this study was to examine the impact of various types of grammatical features on the efficacy of form-focused instruction. Theories for the development of form-focused instruction may be divided into two groups based on their emphasis of either input or output. For the purposes of this study, any form-focused technique that modified input to enhance learner production was defined as input-based instruction, whereas any technique that modified or enhanced learner output was defined as output-based instruction.

To locate research studies for the meta-analysis, various sources such as Ebscohost, Proquest, Sage journals, and Google Scholar were systematically searched 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) with keywords that identify treatments or methods (control group, form-focused instruction, focus-on-form, focus-on forms, PI, recasts, text enhancement, dictogloss, output, input, explicit).

4.1 Independent Variables

The search for grammatical treatments yielded 350 studies, which were systematically analyzed to ensure that each had a treatment which could be separated into two independent variables: input-based or output-based instruction. Treatments that modified the input that learners are exposed to or are required to process (Ellis 2012: 285) were labeled input-based instruction. Text enhancement, text enrichment, Processing Instruction, comprehension enhancement, and explicit rule presentation were included within this category. In contrast, treatments that modified the output that learners produce was labeled output-based instruction.

Corrective feedback, metalinguistic feedback, recasts, prompts, clarification requests, dictogloss, and increased output were included in this category. In addition to distinctions between input- and output-based instruction, each study had to have a control group, as well as both pretest and posttest scores. After evaluating the studies discovered through the initial search, 46 met the criteria for inclusion in the present study (studies denoted by an asterisk in the bibliography).

4.2 Dependent Variable (Effect Size)

Assessments from the selected studies were used to determine effect sizes, which served as the dependent variable. An important point is that these assessments fell along a continuum, which ranged from explicit to implicit evaluation of knowledge. The link between these two types of knowledge is still controversial (Tarone 2014). Although some researchers have taken a non-interface position (Krashen 1981; Paradis 1994), which posits that there is no link between the two types, extensive research suggests, at the very least, that there is a weak interface (DeKeyser 1994; Ellis 1994; Kim and Rebuschat 2010; Sonbul and Schmitt 2013). Since there may, indeed, be a link between explicit and implicit knowledge, holistic collation of assessment types may reveal grammatical relationships which warrant further inquiry. Simultaneously looking at assessments based upon explicit or implicit knowledge could yield more insights, yet the number of available experimental studies is currently limited. This issue is confounded by utilization of assessments which integrate knowledge types.

Effect size was computed in a series of steps. First, an effect size for the experimental group was obtained by inserting pretest scores (M_2), posttest scores (M_1), and associated standard deviations (SD_2 and SD_1) into the Cohen's d formula for effect size (Spada and Tomita 2010: 307):

$$d = [M_1 - M_2] / [\text{SQRT}[(SD_1SD_1 + SD_2SD_2)/2]]$$

If information about pretest/posttest scores was unavailable, and the percentage of improvement was available, effect size was determined using an arcsine transformation chart (Lipsey and Wilson 2001: 204).

Next, effect size for the control group was obtained using the Cohen's *d* formula. As a final step, the effect size for the experimental group was subtracted from that of the control group. Subtracting the effect size of the control group helped to ensure that the effect size obtained reflected the treatment itself, rather than extraneous contextual factors.

All effect sizes for the same grammatical feature and type of instruction were averaged and graphically compared. First, input-based and output-based instructional types were compared. Next, instructional types were further separated into six types of input-based and output-based instruction: textual modification of input (text enhancement and enrichment); modification of oral input (PI and comprehension-based); input through explicit rule presentation; output modification through writing feedback (corrective and metalinguistic feedback); output modification through oral feedback (recasts, prompts, and clarification requests); and increased output (dictogloss or additional tasks). This subdivision allowed for more detailed analysis of instructional techniques and the impact of grammatical feature types.

V. Results and Discussion

Comparison of effect sizes for input-based and output-based instruction yielded several differences based upon grammatical feature. Effect sizes for the plural *-s* ($d = 2.94$), past regular *-ed* ($d = 2.00$), passive ($d = 1.89$), and third person singular *-s* ($d = 1.32$) were each larger for input-based instruction (See Figure 1). Each of these grammatical features

includes highly systematic morphological components. The plural *-s*, third person singular *-s*, and past *-ed* are all highly regular in form. Whereas the passive tense may include both regular and irregular forms, it does have a substantial systematic component (*-ed* as in “the car was fixed”). Overall, results suggest that careful modification of input is most effective for less salient and systematic grammatical features. This finding may be explained by the Lexical Preference Principle (VanPatten 2004). As pointed out by VanPatten (2004), learners focus attention on lexical features before grammatical ones. Because lexical features often convey the same meaning as functional grammar (e.g., I painted [functional] a fence *yesterday* [lexical]), the less salient functional features are often rendered redundant and unnecessary. Priming a learner’s lexicon may help learners utilize a less salient, systematic target feature without disrupting cognitive resources needed for other aspects of production. Results suggest that like PI, other forms of input modification or enhancement promote learning and/or acquisition of this grammatical feature type.

In contrast to less salient and redundant features, effect sizes for questions ($d = 1.60$), the article ($d = 1.56$), phrasal verb ($d = 2.14$), conditional ($d = 2.23$), past irregular ($d = 5.76$), and *so/such* ($d = 6.20$) were larger for output-based instruction (See Figure 1). All of the features, in contrast to those better served by input-based instruction, were phonologically salient, consisting of words or phrases. This finding suggests that special modification of input for such features may be less effective or unnecessary. Because learners tend to concentrate on these highly salient and lexical features (Lexical Preference Principle), smaller amounts of input or exemplars may be needed; instead, output-based instruction may be needed to encourage correct use of the features.

In addition to salience, features with large effect sizes for output-based instruction had many lexical variants and syntactic complexity. With the exception of the article, all features include multiple words and

grammatical features. Phrasal verbs, for example, include verbs, particles, and embedded objects; questions, which require inversion of a noun phrase (subject) with a verb phrase (auxiliary), include a number of words; the conditional requires the combination of multiple clauses, each of which has a number or lexical and grammatical elements; finally, the so/such distinction requires use of both adjective and noun phrases,

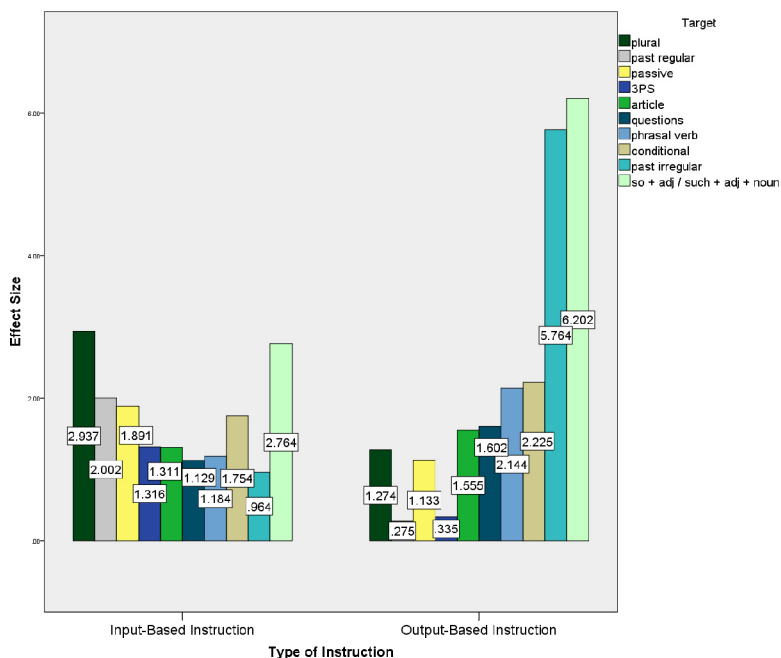


Figure 1. Efficacy of different treatment types, separated based on grammatical feature.

which must be utilized in a distinct word order. The complexity of relationships between multiple elements within these grammatical features may explain why output-based instruction is more effective. While the learner may comprehend features within input, they may have

little experience utilizing the components in correct word order. Output-based instruction may facilitate the operation of a cognitive syntactic encoder, which handles assembly of lexical constituents and inflection (Bock and Levelt, 1995). Via output-based instruction, operation of the cognitive syntactic and encoding mechanism may be encouraged, explaining larger effect sizes for features that are more syntactically complex. Because these same features are also phonologically salient, verbal recasts, prompts, and clarification requests may be easier to hear, further explaining larger effect sizes for output-based instruction.

5.1 Effect Size Based on Instruction Type

Analysis of distinct instructional types also yielded new insights concerning the impact of different grammatical features (Appendix A). While text enhancement tended to have a lower effect size for most grammatical features, it was highest for the article ($d = 1.90$). Perhaps text enhancement increases saliency of this feature, yet retains a focus on the complex pragmatic and semantic information needed to understand usage. Explicit rule presentation had a low effect size ($d = .58$) for the article. It appears that highlighting of morphological forms is effective, but the semantic complexities of the feature cannot be easily conveyed through explicit discussion of rules. This view may also explain lower scores for questions ($d = .59$), which are imbued with a variety of rhetorical and pragmatic meanings, making understanding of situational contexts essential.

Explicit rule presentation was most effective for the third person singular *-s* feature ($d = 1.84$). It was also high for the conditional ($d = 2.05$) feature, albeit not the highest. Correct use of these grammatical features requires inter-phrasal or inter-clausal cognitive processing for correct construction. Explicit instruction may facilitate an understanding

of syntactic links between lexical elements of phrases and clauses. Rule presentation appeared less effective when more salient grammatical features with simple form/meaning mappings were emphasized. Explicit instruction was ineffective for the past irregular feature ($d = .96$), which had a much larger effect size for recasts ($d = 5.76$). Phrasal verbs, likewise, had smaller gains for explicit presentation of rules ($d = 1.18$). Results suggest that explicit pedagogical explanations of grammar should be isolated to syntactically complex grammatical features.

Recasts appeared more effective with salient features with many simple form/meaning mappings. For the past irregular verb, effect size was very large ($d = 5.76$). Since past tense verbs each have a one to one form/meaning mapping, learners may easily perceive and benefit from recasts. Learners may also benefit from recasts that target salient lexical features like the prepositional phrase. In contrast to the past irregular tense, recasts had relatively little impact on the past regular and third person singular *-s* features, yielding effect sizes of .14 and .33 respectively. Since these features are less phonologically salient, learners may have difficulty hearing teacher feedback, explaining this finding.

Corrective feedback appeared more effective for syntactically complex grammatical features. Conditional sentences ($d = 3.25$) and questions ($d = 3.46$) both had the highest effect sizes for corrective feedback and metalinguistic explanation. This pedagogical approach may help learners to correct problems with syntactic and semantic encoding. An explicit focus on errors in output may stimulate a monitor, thereby facilitating heightened cognitive processing. Phrasal verbs may also benefit from corrective feedback, yet no research was located to confirm this notion. This feature did reveal a large effect size for the dictogloss ($d = 2.14$), which was nearly twice as large as explicit instruction ($d = 1.18$).

VI. Conclusion

Results suggest that efficacy of form-focused instruction differs significantly based upon type of grammatical feature. Input-based instruction, which primes the lexicon before production, appears more useful for features like the plural *-s*, past *-ed*, and third person singular *-s*, which are phonologically insalient, yet morphologically regular. Output-based instruction, in contrast, appears more effective with grammatical features that are syntactically or semantically complex. Features like questions, phrasal verbs, conditionals, and articles, for example, revealed a benefit from pedagogical interventions that pushed output or provided feedback. Overall, the results suggest that differences in grammar be considered before curricula or pedagogical interventions are designed.

In addition to study of input- and output-based instruction, inquiry of individual pedagogical techniques yielded the following suggestions:

1. Input enhancement may be more effective for semantically or pragmatically complex features (e.g., articles and questions).
2. Explicit instruction may help learners identify syntactic relationships between phrases (e.g., third person singular or conditionals).
3. Explicit instruction may be less effective for grammatical features with complex semantic or pragmatic meanings (e.g., articles and questions).
4. Recasts may be useful with phonologically salient grammatical features that have many different form/meaning mappings (e.g., past irregular).
5. Corrective feedback may be more effective for teaching semantically or syntactically complex grammatical features;

explicit rule presentation may not provide all the semantic, pragmatic, or syntactic information necessary for production.

6. Additional output (e.g., dictogloss) may be more effective with questions, conditionals, and phrasal verbs, which require syntactic ordering of constituents.

Results suggest that input enhancement may be useful in focusing learner attention on minor aspects of form, while retaining an intense focus on meaning. This technique is beneficial for features like the English article, which are syntactically simple, yet semantically very complex. Secondly, explicit presentation of rules appears useful for outlining simple syntactic relationships between grammatical features or word order. Finally, various forms of output-based instruction appear to promote correction of highly salient features with multiple words or word forms.

While information obtained from this study was insightful, it should be evaluated with caution. Methodological differences between studies, such as differences in type of assessment, may impact the results. Moreover, several types of instruction lack data concerning a number of grammatical features (See Appendix A). Despite such limitations, interesting relationships between instruction and grammatical features have emerged, which warrant further investigation. As illustrated by this study, more holistic inquiry may clarify questions about different pedagogical techniques, thereby increasing the effectiveness of form-focused instruction.

Works Cited

- Alanen, R. "Input Enhancement and Rule Presentation in Second Language Acquisition." *Attention and Awareness in Foreign Language Learning*. Ed. R. Schmidt. Honolulu: University of Hawaii Press, 1995. 259-302.
- Benati, A. "The Effects of Processing Instruction, Traditional Instruction and

- Meaning-based Output Instruction on the Acquisition of the English Past Simple Tense." *Language Teaching Research* 9.1 (2005): 67-93.
- Beretta, A., and A. Davies, "Evaluation of the Bangalore project." *ELT Journal* 39.2 (1985): 121-27.
- Berwick, R. C., P. Pietroski, B. Yankama, and N. Chomsky. "Poverty of the Stimulus Revisited." *Cognitive Science* 35.7 (2011): 1207-42.
- Bitchener, J., and U. Knoch. "The Value of Written Corrective Feedback for Migrant and International Students." *Language Teaching Research* 12.3 (2008): 409-31.
- _____. "The Relative Effectiveness of Different Types of Direct Written Corrective Feedback." *System* 37.2 (2009a): 322-29.
- _____. "The Value of a Focused Approach to Written Corrective Feedback." *ELT Journal* 63.3 (2009b): 204-11.
- _____. "Raising the Linguistic Accuracy Level of Advanced L2 Writers with Written Corrective Feedback." *Journal of Second Language Writing* 19.4 (2010a): 207-17.
- _____. "The Contribution of Written Corrective Feedback to Language Development: A Ten Month Investigation." *Applied Linguistics* 31.2 (2010b): 193-214.
- Bitchener, J., S. Young, and D. Cameron. "The Effect of Different Types of Corrective Feedback on ESL Student Writing." *Journal of Second Language Writing* 14.3 (2005): 191-205.
- Bock, K., and W. Levelt. "Language Production: Grammatical Encoding." *Handbook of Psycholinguistics*. Ed. M. Gernsbacher. New York: Academic Press, 1995. 945-84.
- Broszkiewicz, A. "The Effect of Focused Communication Tasks on Instructed Acquisition of English Past Counterfactual Conditionals." *Studies in Second Language Learning and Teaching* 1.3 (2011): 335-63.
- Celce-Murcia, M., D. Larsen-Freeman, and H. A. Williams. *The Grammar Book: An ESL/EFL Teacher's Course* (2nd ed.). New York: Heinle & Heinle Publishers, 1999.
- Chastain, K. D., and F. J. Woerdehoff. "A Methodological Study Comparing the Audio-Lingual Habit Theory and the Cognitive Code-Learning Theory." *The Modern Language Journal* 52.5 (1968): 268-79.
- Cho, M. Y. "The Effects of Input Enhancement and Written Recall on

- Noticing and Acquisition.” *Innovation in Language Learning and Teaching* 4.1 (2010): 71-87.
- Chomsky, N. *The Logical Structure of Linguistic Theory*. New York: Plenum, 1975.
- _____. *Lectures on Government and Binding*. Dordrecht: Foris, 1981.
- _____. *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger, 1986.
- Comer, W. J., and L. deBenedette. “Processing Instruction and Russian: Further Evidence Is in.” *Foreign Language Annals* 44.4 (2011): 646-73.
- DeKeyser, R. “Implicit and Explicit Learning of L2 Grammar: A Pilot Study.” *TESOL Quarterly* 28 (1994): 188-94.
- Ellis, N. C. “Consciousness in Second Language Learning: Psychological Perspectives on the Role of Conscious Processes in Vocabulary Acquisition.” *AILA Review* 11 (1994): 37-56.
- Ellis, R. *Language Teaching Research and Pedagogy*. West Sussex: Wiley-Blackwell, 2012.
- Ellis, R., and Y. Sheen. “Reexamining the Role of Recasts in Second Language Acquisition.” *Studies in Second Language Acquisition* 28.4 (2006): 575-600.
- Ferris, D. R. “The ‘Grammar Correction’ Debate in L2 Writing: Where are We, and Where Do We Go from Here? (And What Do We Do in the Meantime...?)” *Journal of Second Language Writing* 13.1 (2004): 49-62.
- Foraker, S., T. Regier, N. Khetarpal, A. Perfors, and J. Tenenbaum. “Indirect Evidence and the Poverty of the Stimulus: The Case of Anaphoric one.” *Cognitive Science* 33.2 (2009): 287-300.
- Goldschneider, J., and R. DeKeyser. “Explaining the ‘Natural Order of L2 Morpheme Acquisition’ in English: A Meta-analysis of Multiple Determinants.” *Language Learning* 55 (2005): 27-77.
- Goo, J., and A. Mackey. “The Case Against the Case against Recasts.” *Studies in Second Language Acquisition* 35.1 (2013): 127-65.
- Harris, J., and P. O. Duibhir. *Effective Language Teaching: A Synthesis of Research*. Dublin: National Council for Curriculum and Assessment, 2011.
- Hendrickson, J. M. “Error Correction in Foreign Language Teaching: Recent

- Theory, Research, and Practice." *The Modern Language Journal* 62.8 (1978): 387-98.
- Housen, A., M. Pierrard, and S. Van Daele. "Rule Complexity and the Efficacy of Explicit Grammar Instruction." *Investigations in Instructed Second Language Acquisition*. Eds. A. Housen & M. Pierrard. Amsterdam: Mouton de Gruyter, 2005. 35-269.
- Izumi, S. "Output, Input Enhancement, and the Noticing Hypothesis." *Studies in Second Language Acquisition* 24.4 (2002): 541-77.
- Izumi, S., M. Bigelow, M. Fujiwara, and S. Fearnow. "Testing the Output Hypothesis." *Studies in Second Language Acquisition* 21.3 (1999): 421-52.
- Kim, J. K., and P. Rebuschat. *At the Interface of Explicit and Implicit Knowledge: Evidence for Synergistic Effects in L2 Development*. Paper Presented at the Second Language Research Forum, October 14-17, University of Maryland, College Park. 2010.
- Krashen, S. D. *Second Language Acquisition and Second Language Learning*. London: Pergamon Press, 1981.
- Krashen, S. D., and T. D. Terrell. *The Natural Approach*. New York: Alemany Press, 1983.
- Kubota, M. "Instructional Effects of Positive and Negative Evidence on Prepositional/phrasal Verbs." *IRLT (Institute for Research in Language Teaching) Bulletin* 11 (1997): 1-39.
- Lee, S. K. "Effects of Textual Enhancement and Topic Familiarity on Korean EFL Students' Reading Comprehension and Learning of Passive Form." *Language Learning* 57.1 (2007): 87-118.
- Leow, R. P. "The Effects of Input Enhancement and Text Length on Adult L2 Readers' Comprehension and Intake in Second Language Acquisition." *Applied Language Learning* 8.2 (1997): 151-82.
- Lipsey, M. W., and D. B. Wilson. *Practical Meta-analysis*. London, England: Sage Publications, 2001.
- Loewen, S., R. Erlam, and R. Ellis. "The Incidental Acquisition of Third Person -s as Implicit and Explicit Knowledge." *Implicit and Explicit Knowledge in Second Language Learning, Testing and Teaching*. Eds. R. Ellis, S. Loewen, C. Elder, R. Erlam, J. Philp, & H. Reinders. Bristol, UK: Multilingual Matters, 2009. 262-80.

- Long, M., and P. Robinson. "Focus on Form: Theory, Research and Practice." *Focus on Form in Classroom Second Language Acquisition*. Eds. C. Doughty & J. Williams. Cambridge, UK: Cambridge University Press, 1998. 15-41.
- Lyster, R., and K. Saito. "Oral Feedback in Classroom SLA." *Studies in Second Language Acquisition* 32.2 (2010): 265-302.
- Marsden, E., and H. Y. Chen. "The Roles of Structured Input Activities in Processing Instruction and the Kinds of Knowledge They Promote." *Language Learning* 61.4 (2011): 1058-98.
- Miller, B. D., and J. W. Ney. "Oral Drills and Writing Improvement in the Fourth Grade." *The Journal of Experimental Education* 36.1 (1967): 93-99.
- Mitchell, R., and F. Myles. *Second Language Learning Theories* (2nd ed.). London, UK: Hodder Arnold, 2004.
- Muller, D. "The Effect upon Pronunciation and Intonation of Early Exposure to the Written Word." *Modern Language Journal* 49.7 (1965): 411-13.
- Norris, J. M., and L. Ortega. "Effectiveness of L2 Instruction: A Research Synthesis and Quantitative Meta-analysis." *Language Learning* 50 (2000): 417-528.
- Paradis, M. "Neurolinguistic Aspects of Implicit and Explicit Memory: Implications for Bilingualism." *Implicit and Explicit Learning of Languages*. Ed. N. C. Ellis. London: Academic Press, 1994. 393-419.
- Pienemann, M. "Is Language Teachable?: Psycholinguistic Experiments and Hypotheses." *Applied Linguistics* 10.1 (1989): 52-79.
- Pienemann, M. *Language Processing and Second-language Development: Processability Theory*. Amsterdam: John Benjamins Publishing Company, 1999.
- Pienemann, M. *Cross-Linguistic Aspects of Processability Theory*. Amsterdam: John Benjamins Publishing Company, 2005.
- Pogrow, S. "The Bermuda Triangle of American Education: Pure Traditionalism, Pure Progressivism, and Good Intentions." *Phi Delta Kappan* 88.2 (2006): 142-50.
- Prabhu, N. S. *Second Language Pedagogy*. Oxford: Oxford University Press, 1987.
- Rassaei, E. "The Effects of Input-Based and Output-Based Instruction on L2

- Development." *TESL-EJ* 16.3. (2012). 12 Nov. 2017
<<http://www.tesl-ej.org/wordpress/issues/volume16/ej63/ej63a2/>>.
- Rassaei, E. "Effects of Textual Enhancement and Input Enrichment on L2 Development." *TESOL Journal* 6.2 (2015a): 281-301.
- _____. "Oral Corrective Feedback, Foreign Language Anxiety and L2 Development." *System* 49 (2015b): 98-109.
- Reinders, H. and R. Ellis. "The Effects of Two Types of Input on Intake and the Acquisition of Implicit and Explicit Knowledge." *Implicit and Explicit Knowledge in Second Language Learning Testing and Teaching*. Eds. R. Ellis, S. Loewen, C. Elder, R. Erlam, J. Philp, & H. Reinders. Bristol: Multilingual Matters, 2009. 281-302.
- Sakai, H. "Do Recasts Promote Noticing the Gap in L2 Learning?" *The Asian EFL Journal Quarterly* 13.1 (2011): 357-85.
- Samimy, K. K. "A Comparative Study of Teaching Japanese in the Audio-lingual Method and the Counseling-learning Approach." *The Modern Language Journal* 73.2 (1989): 169-77.
- Sarkhosh, M., B. Taghipour, and H. Sarkhosh. "Differential Effect of Different Textual Enhancement Formats on Intake." *Procedia-Social and Behavioral Sciences* 70 (2013): 544-59.
- Schenck, A. "Learning to Improve Grammar Instruction through Comprehensive Analysis of Past Research." *International Review of Applied Linguistics in Language Teaching* 55.2 (2017): 165-95.
- Schenck, A, and W. K. Choi. "Extending the Utility of Acquisition Order Research Through Examination of Causes and Associated Effects." *New Studies of English Language and Literature* 48 (2011): 227-42.
- Sheen, R. "'Focus on Form' and 'Focus on Forms'." *ELT Journal* 56.3 (2002): 303-5.
- Sheen, Y. "Differential Effects of Oral and Written Corrective Feedback in the ESL Classroom." *Studies in Second Language Acquisition* 32.2 (2010): 203-34.
- Smith, M. S. "Consciousness-raising and the Second Language Learner." *Applied Linguistics* 2 (1981): 159-68.
- _____. "Speaking to Many Minds: On the Relevance of Different Types of Language Information for the L2 Learner." *Interlanguage Studies Bulletin (Utrecht)* 7.2 (1991): 118-32.

- _____. "Input Enhancement in Instructed SLA: Theoretical Bases." *Studies in Second Language Acquisition* 15.2 (1993): 165-79.
- Sonbul, S., and N. Schmitt. "Explicit and Implicit Lexical Knowledge: Acquisition of Collocations under Different Input Conditions." *Language Learning* 63.1 (2013): 121-59.
- Song, J. Y., M. Sundara, and K. Demuth. "Phonological Constraints on Children's Production of English Third Person Singulars." *Journal of Speech, Language, and Hearing Research* 52.3 (2009): 623-42.
- Spada, N., and Y. Tomita. "Interactions Between Type of Instruction and Type of Language Feature: A Meta-analysis." *Language Learning* 60.2 (2010): 263-308.
- Swain, M. "The Output Hypothesis: Just Speaking and Writing Aren't Enough." *Canadian Modern Language Review* 50.1 (1993): 158-64.
- _____. "The Output Hypothesis: Theory and Research." *Handbook of Research in Second Language Teaching and Learning* 1 (2005): 471-83.
- Tarone, E. "Enduring Questions from the Interlanguage Hypothesis." *Interlanguage: 40 Years Later*. Eds. Z.-H. Han & E. Tarone. Amsterdam: John Benjamins, 2014. 7-26.
- Truscott, J. "The Case against Grammar Correction in L2 Writing Classes." *Language Learning* 46.2 (1996): 327-69. 12 Nov. 2017
<<http://dx.doi.org/10.1111/j.1467-1770.1996.tb01238.x>>.
- Truscott, J. "The Case for 'the Case against Grammar Correction in L2 Writing Classes': A Response to Ferris." *Journal of Second Language Writing* 8.2 (1999): 111-22. 12 Nov. 2017
<<http://dx.doi.org/10.1016/s1060-374380124-6>>.
- Uludag, O., and B. VanPatten. "The Comparative Effects of Processing Instruction and Dictogloss on the Acquisition of the English Passive by Speakers of Turkish." *International Review of Applied Linguistics in Language Teaching* 50.3 (2012): 189-212.
- VanPatten, B. *Processing Instruction: Theory, Research, and Commentary*. Mahwah: Lawrence Erlbaum Associates, 2004.
- VanPatten, B. "On the Limits of Instruction: 40 Years after 'Interlanguage'." *Interlanguage: 40 Years Later*. Eds. Z.-H. Han & E. Tarone. Amsterdam, Netherlands: John Benjamins, 2014. 105-26.
- Williams, J. "Focus on Form in Communicative Language Teaching: Research

- Findings and the Classroom Teacher.” *TESOL Journal* 4.4 (1995): 12-16.
- Williams, J., and J. Evans. “What Kind of Focus and on Which Forms?” *Focus on form in Classroom Second Language Acquisition*. Eds. C. Doughty & J. Williams. Cambridge: Cambridge University Press, 1998. 139-55.
- White, L. *Second Language Acquisition and Universal Grammar*. New York: Cambridge University Press, 2009.
- Yang, Y., and R. Lyster. “Effects of Form-focused Practice and Feedback on Chinese EFL Learners’ Acquisition of Regular and Irregular Past Tense Forms.” *Studies in Second Language Acquisition* 32.2 (2010): 235-63.
- Yavas, M. *Applied English Phonology*. Malden, MA: Blackwell Publishing, 2006.

Appendix A

Table A1
Effect Sizes for Different Types of Instruction

Instruction	Target Feature	Effect Size	Target Feature	Effect Size
Modification of text input (Text Enhancement or Enrichment)	3PS	1.18	phrasal verb	
	article	1.90	plural	
	conditional	1.68	possessive determiner	
	participial adjective	.86	quantifiers	1.66
	passive	1.07	questions	
	past	.	so / such	3.24
Modification of oral input (PI and Comprehension Based)	past irregular	.	WILL	4.74
	past regular	.		
	3PS	.	phrasal verb	
	article	.	plural	4.86
	conditional	.	possessive determiner	
	participial adjective	.	quantifiers	
PI and Comprehension Based)	passive	3.16	questions	1.14
	past	.	so / such	
	past irregular	.	WILL	
	past regular	1.98		

Explicit Rule Presentation	3PS	1.84	phrasal verb	1.18
	article	.58	plural	1.02
	conditional	2.05	possessive determiner	1.85
	participial adjective	1.96	quantifiers	.54
	passive	1.46	questions	.59
	past	.	so / such	1.82
	past irregular	.96	WILL	
	past regular	.87		
Modification of written output (Corrective and Metalinguist. Feedback)	3PS	.	phrasal verb	.
	article	1.64	plural	.
	conditional	3.25	possessive determiner	.
	participial adjective	.	quantifiers	.
	passive	.74	questions	3.46
	past	.	so / such	.
Modification of oral output (Recasts, Prompts, and Clarif.)	3PS	.33	phrasal verb	.
	article	1.13	plural	.
	conditional	.	possessive determiner	.
	participial adjective	.	quantifiers	.
	passive	.	questions	1.09
	past	.	so / such	.
Additional Output (Dictogloss, Output, and Interaction)	past irregular	5.76	WILL	.
	past regular	.14		
	3PS	.	phrasal verb	2.14
	article	1.46	plural	1.27
	conditional	1.37	possessive determiner	.
Additional Output (Dictogloss, Output, and Interaction)	participial adjective	.	quantifiers	.
	passive	1.65	questions	.77
	past	-.46	so / such	6.20
	past irregular	.	WILL	
past regular	.60			

schcnck@hotmail.com

Received: December 18, 2017

Revised: February 12, 2018

Accepted: February 19, 2018