Reading for Writing as Reciprocal Reinforcement in Vocabulary Acquisition

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Abstract

This paper revisits Swain’s Pushed Output Hypothesis to set a basis for explaining the merits of reading for writing in L2 instruction. Writing assignments are a type of pushed output that help students understand the gap between what they would like to communicate and what they are able to communicate. Although the gap results from lack of linguistic ability in syntax as well as lexis, this paper will focus on how reciprocal reinforcement in reading and writing creates a greater depth of semantic processing that aids in greater retention of newly acquired vocabulary words. Reciprocal reinforcement of vocabulary in reading-for-writing lessons can aid in raising students awareness of their gaps between understanding new vocabulary and being able use those words to create meaningful messages. This conscious-raising function of reciprocal reinforcement triggers cognitive processes such as language learners testing their individual hypotheses of how the target language works.

Keywords: EFL writing, EFL reading, reading for writing, schemata building
1. Introduction
The term reciprocal reinforcement is not a common expression in second language acquisition research. However, in other fields it refers to situations that produce complementary or mutual benefits. Behaviorists use the term to explain a conditioned response in forming relationships. That is, people like people who make them feel good about themselves. Organizational theorists use the term to explain a common business phenomenon in which investments trigger returns and returns trigger investment. For this paper, reciprocal reinforcement refers to a scaffolding approach in lesson design and program development for second language teaching.

Reciprocal reinforcement is an approach to curriculum design that presents lesson materials for developing receptive skills as comprehensible input and accordingly focuses on encouraging second language (L2) students to use specifically targeted language forms and features from those lesson materials to produce comprehensible output. Thus, students may acquire new language in the form of grammatical chunks, morphemes or vocabulary during lessons that focus on receptive skills and then test their individual hypotheses about how to use those newly acquired language forms and features to communicate and express their ideas. This trial-and-error testing can be encouraged by instructors through pushed output. As students move from the stage of receiving comprehensible input to attempting to produce comprehensible output, they build a deeper understanding of how to use the target language.

Although second language (L2) teachers and program designers can integrate various types of reciprocal reinforcement into syllabi design, this paper will primarily focus on how reading for writing can create opportunities for L2 students to enhance their lexical knowledge through deep processing of targeted vocabulary. Beginning with a focus on lexical input processing (Barcroft, 2004), teachers can intentionally introduce new vocabulary through readings. As students gradually comprehend meanings and nuances of new words, teachers can encourage pushed output (Swain, 1985) in writing assignments to raise students’ awareness of how to use the targeted vocabulary. Accordingly, the primary purpose of this paper is to discuss how reciprocal reinforcement of vocabulary in reading-for-writing lessons can aid in raising students awareness of their gaps between understanding new vocabulary and being able use those words to create meaningful messages. The paper will also include guidelines for designing lessons that focus on building vocabulary through reciprocal reinforcement in reading and writing.

2. Reading for Writing
Some L2 programs use a skills-based syllabus rather than an integrated-skills syllabus. In such programs, L2 reading and L2 writing are taught separately. However convenient or logical this arrangement may seem, it is counterintuitive to the principles of language acquisition. Isolation of these skills ignores the interactive relationship of reading and writing and the value that connecting the teaching of these skills can have on students’ language acquisition (Hirvela, 2004; Tsai, 2006). Specifically, the bifurcation of L2 reading and L2 writing courses can lead to incongruent pedagogical approaches and goals. Basically, the isolation of skills in teaching a second language changes the purpose for practicing a particular skill. According to Leki (1993), isolating L2 reading can result in instructors and students getting lost in details of hunting for main ideas and learning
suffixes or prefixes instead of focusing on decoding the texts. This isolation disregards the need for reading to be a purposeful, real world activity. In addition, Nation (2009) asserts that L2 reading courses should involve the practice of other language skills. Reading, as meaning-focused input, provides background knowledge for meaning-focused output.

The bifurcation of L2 reading and L2 writing courses creates a disconnectedness that is disadvantageous for the L2 learner. Conversely, reading-for-writing courses can aid in establishing connections that facilitate acquisition of language. Brown (2007) emphasizes this point by being very specific about the value of connecting reading and writing:

Clearly, students learn to write in part by carefully observing what is already written. That is, they learn by observing, or reading, the written word. By reading and studying a variety of relevant types of text, students can gain important insights both about how they should write and about subject matter that may become the topic of writing. (p. 347)

Perhaps the key word is relevant. One of the main reasons for teaching L2 reading and L2 writing in the same course is to relate the material that students read to the assignments that students write. This adds meaning and purpose to the activities and tasks that students complete in a given unit. Reading texts provide models for style, vocabulary and specific sentence structures. Therefore, a reading-for-writing course provides students with adequate models for understanding writing assignments on both a macro-level (organization and style) and a micro-level (vocabulary and sentence structure).

Combining L2 reading and L2 writing instruction can “be understood as acknowledging that writing is often the physical artifact of reading/writing encounters” (Carson, 1993, p.85). However, reading for writing is not as simple as providing a reading text and then having students write their thoughts and opinions based on what they have read. The intricate connections between reading and writing require a more complex approach to combining L2 reading and L2 writing instruction. By combining reading-oriented approaches that promote inductive learning such as lexical input processing (Barcroft, 2004) with consciousness-raising deductive teaching approaches such as pushed output (Swain, 1985), students can practice using the rhetorical models, grammatical structures and new vocabulary they have discovered in assigned readings. For example, if the writing goal is to write a movie review, students should first read a significant number of movie reviews. Through the readings of authentic texts, students will begin to understand the organization of information and the general style for a movie review. Additionally, students should realize that movie reviews contain some specific vocabulary that they can use in the writing assignment. Another example could be an assignment in which students are to write a typical comparison and contrast paragraph or essay. Reading a variety of examples for both block organization and point-by-point organization, students begin to understand possibilities for organizing their ideas. Consciousness-raising classroom exercises can help students understand the various adverb clauses that are necessary in a comparison and contrast paragraph. The readings should be full of models for adverb clauses denoting similarities (in the same way, likewise, just as) and adverb clauses denoting contrast (however, whereas, while, although).
3. Comprehensible Input and Comprehensible Output

3.1 Importance of Vocabulary Acquisition
The greater an L2 learner’s lexical knowledge is, the greater the likelihood of reading material
being comprehensible input and the greater the learner’s ability will be for producing
comprehensible output. Although there may be other factors that cause failure to produce
comprehensible output, vocabulary errors can be more detrimental to communication than
grammatical errors (Barcroft, 2004; Folse, 2008). Insufficient vocabulary is more likely than
insufficient grammar to produce global errors in communication. Insufficient grammar may lead
to local errors that do not impede communication, whereas insufficient vocabulary may inhibit the
L2 learner’s ability to send the desired message. As a simple example, assume the intended
message is, “The weather is better today than yesterday.” If the L2 learner’s grammatical
knowledge is insufficient, the message may still be comprehensible: Today weather more good.
Yesterday weather no good. The learner may be lacking the grammatical knowledge to accurately
express comparisons; however, the errors are only local and do not impede communication. The
output is still comprehensible. Insufficient vocabulary, on the other hand, may render the message
incomprehensible: The wonder is better today than yesterday. The use of an incorrect word
constitutes a global error that impedes communication.

3.2 Reading as Input
Krashen (1985) postulates in his widely accepted Input Hypothesis that L2 learners acquire
language when messages are comprehensible. If the level of the language is slightly higher than
the learner’s linguistic competence (commonly referred to as i +1), learners will acquire new
language provided the input is comprehensible. This early research has become the foundation for
Krashen advocating the power of reading in second language acquisition. Stressing that reading
material should be meaningful and interesting to capture the L2 reader’s attention, Krashen (2004)
claims that reading large amounts of text increases reading comprehension and vocabulary
acquisition as well as having an influence of developing writing skills.

3.3 Writing as Pushed Output
The Output Hypothesis (Swain, 1985) is more of a complementing hypothesis than a competing
hypothesis. Swain maintains that being ‘pushed’ to produce output is a concept that parallels the i
+1 concept of comprehensible input (p. 248-9). Swain reasons that language learning also occurs
when L2 students become aware of gaps between what they desire to communicate and what they
are able to communicate. By realizing these gaps in linguistic knowledge of L2, learners are able
to modify output with a heightened awareness (Swain, 1985, Swain and Lapkin, 1995). The process of
modifying output to render a message comprehensible highlights three important functions of
output. First, an L2 learner notices what needs to be known to communicate the message in the
L2. Then, through trial-and-error testing of a new hypotheses, the learner makes choices on how
to communicate the desired message. The third function of output is a metalinguistic function that
involves the deep processing of and reflecting on L2 knowledge (Swain, 1995, Swain and Lapkin,
1995). It should be noted that other researchers have referred to pushed output as forced output
(e.g., Barcroft, 2004). In addition this paper uses the term guided output to indicate that writers
modify output through revision based on an instructor’s editing comments and/or peer feedback.
Reading as input differs from writing as output in that reading is decoding a message while writing is transcribing a message. To decode the message a learner needs an adequate level of linguistic and topical background knowledge for the input to be comprehensible. Likewise, the learner needs an adequate ability to use linguistic structures and topical vocabulary to produce comprehensible messages. This further emphasizes the connections of comprehensible input in reading and comprehensible output in writing because it is through the decoding of messages that L2 students learn how to organize and transcribe their ideas (Brown, 2007).

The connections between reading and writing go well beyond decoding and transcribing. Tierney and Leys (1986 as cited in Carson, 1993) claim the connections involve information storage, information retrieval, discovering of new information, logical thought processing and communication. These connections are part of a shared process since the way a reader comprehends text is similar cognitively to the way a writer composes a text (Carson, 1993; Hirvela, 2004). Both reading and writing require significant background knowledge; therefore, schemata-building activities are essential in the pre-reading and pre-writing stages of the process. Schemata-building activities increase the funds of knowledge for the L2 learner enabling the L2 reader to understand specific content while decoding a text and, in the same way, enabling an L2 writer to have a greater pool of information and vocabulary to draw on while transcribing a text.

These connections strengthen the argument for why L2 reading and L2 writing should be combined in ESL/EFL programs. Since the process that an L2 reader uses in decoding the meaning of a text is so similar to the process that an L2 writer uses to create meaning, it makes sense to emphasize reading for writing so that newly acquired knowledge and language skills will have a reciprocal effect on skills development for the L2 reader/writer. In this sense, reading for writing is not just an approach; it is a facilitative strategy for instruction in L2 literacy classrooms (Tsai, 2006).

4. Reciprocal Reinforcement

4.1 Reciprocal Reinforcement and Levels of Processing

By using varying degrees of pushed output, L2 writing instruction can activate deeper levels of language processing. L2 writers need to spend time consciously thinking about how to express their intended message. Writing affords L2 learners time to make decisions about appropriate grammatical structures and vocabulary. Writers also receive feedback during the revision process that can guide them in rendering messages more comprehensible. It is during this process that an L2 writer will reflect upon choosing the most appropriate words to convey the intended message. These word choices require L2 writers to push past the surface knowledge of new vocabulary and consider nuances, collocations, formality and related grammar. This is a move from shallow processing of a word’s structure and sound to a deep processing of encoding the range of meaning for the word. Craig and Lockhart (1972) reasoned that while shallow processing of new vocabulary only results in short-term retention, deep processing is likely to result in storing new vocabulary in the long-term memory.

According to Craig and Lockhart (1972), learners process information in three ways. Shallow processing involves structural processing and phonemic processing. Structural processing is limited to the appearance of words and phonemic processing relates to the encoding of how a word
sounds. Structural processing and phonemic processing involve maintenance rehearsal. This level of learning vocabulary would be similar to the memory process in rote memorization. Repeated practice of identifying appearance and sound aid a learner in short-term retention, but do not activate metalinguistic cognitive processes for deep understanding of new vocabulary.

The third way learners process information about vocabulary is semantic processing which involves encoding the meaning of a word and how the word relates to other words with similar meanings. Semantic processing is a metalinguistic function of pushed output. Semantic processing requires an L2 learner to reflect on knowledge about L2 vocabulary. This deep processing involves elaborative rehearsal to analyze various aspects of a word such as subtle nuances, collocations and related grammar. Craig and Lockhart (1972) reasoned that the deeper the level of information processing, the easier it is to recall the information.

In L2 instruction, reading initiates the structural processing of vocabulary and listening initiates the phonemic process. As productive skills, speaking and writing require semantic processing. In conversation, this may take place as speakers negotiate meaning through collaborative effort to arrive at comprehensible output. For writing, the L2 learner can take more time for reflection on vocabulary; thus, moving to deeper levels of semantic processing and elaborative rehearsal. This occurs as output is pushed or guided.

Figure 1: Reciprocal Reinforcement of Vocabulary

4.2 Reciprocal Reinforcement as a Step Process
According to Barcroft (2004) L2 learners need ample time for lexical input processing in order to develop their linguistic competence at multiple levels. Therefore, L2 course designers and instructors should carefully consider how reciprocal reinforcement of lexical input and output aids in creating opportunities for deep processing of new vocabulary. Viewing reciprocal reinforcement as a step process should allow L2 learners ample time for lexical input processing.
1. **Incidental Input (Receptive Skills Practice)**

   New vocabulary appears in readings. The words may relate to a specific topic or specific grammatical structures common to a rhetorical mode. Instructors encourage students to ask questions about new words.

2. **Intentional Input (Increase frequency and awareness)**

   As key words appear more frequently in the reading, instructors provide easy definitions and examples to facilitate understanding of the text. Pictures and videos associated with the reading may aid in schemata building at this stage.

3. **Encouraged Output (Structural and Phonemic)**

   Pronunciation practice of new words and entering new words into a vocabulary notebook help to move L2 learners through the phonemic processing and structural processing of the words.

4. **Guided Output (Highly Intentional – cloze exercises, matching, word features)**

   Post-reading review of key words using common vocabulary building exercises help to raise awareness of the nuances and collocations associated with the targeted vocabulary. L2 learners begin a conscious level of semantic processing at this stage. Output is guided by the structure of the exercise and therefore, highly intentional.

5. **Guided Output (Less intentional – Using new vocabulary in assignments)**

   Students are encouraged to use the new vocabulary in writing and speaking assignments related to the readings. During the revision process of a writing assignment, instructors provide feedback on the accuracy and comprehensibility of vocabulary use.

6. **Incidental Output (Elaborate Rehearsal)**

   The L2 learner understands new vocabulary well enough to use the words spontaneously in writing or speaking. Through deep lexical processing, the L2 learner is able to achieve long-term retention of the acquired vocabulary.

### 4.3 Reciprocal Reinforcement in Reading for Writing

As vocabulary acquisition is interdependent on other language features for the production of comprehensible output, it is worth noting how reading for writing naturally generates reciprocal reinforcement for metalinguistic reflection on L2. The interconnectedness among the acquisition of lexical, syntactical, semantical and phonological features of language are justification for considering points of reciprocal reinforcement in course design. Emphasizing reciprocal reinforcement in course design has pedagogical and logistical benefits.

**Efficiency in Building Schemata**

If reading material is linked to writing assignments, pre-reading techniques such as watching videos or topical discussions for building schemata will be effective in the idea-generating stage for a writing assignment. It is in the idea-generating stage that L2 students begin to process topic-related vocabulary. Therefore, the reading material should fortify students’ newly acquired content knowledge of topics for writing assignments.
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Reading is Idea Generating
Reading is valuable in the pre-writing stage for triggering a thought process to spawn ideas and encourage students to see topics from a variety of angles. Tabatabaei and Ali (2012) found that reading-based pre-writing activities significantly improved the writing performance of L2 learners in their study sample. Consequently, they recommend using a variety of reading tasks as pre-writing activities. Such tasks would contribute to the lexical input processing for L2 learners.

Combining Inductive and Deductive Approaches
Through extensive reading, students acquire new vocabulary and build their grammatical competence (Krashen, 1985; Brown, 1987; Hirvela, 2004; Plakans, 2009; Mo, 2012). In reading-for-writing courses, language acquisition is inductive learning through reading. Once students begin writing, teachers can use a variety of deductive methods to build students’ awareness of how to use new vocabulary and newly acquired grammatical structures. These assignments would be types of guided output. For example, assignments may require students to use specific vocabulary or sentence patterns. To demonstrate they have achieved that goal for the assignment, students will then underline and mark the vocabulary and sentence patterns they have used. However, if the target vocabulary words are not used correctly, the teacher will explicitly review the vocabulary as an additional step in the consciousness-raising process for teaching vocabulary.

Reciprocal Effect for Understanding Texts
Hirvela (2004) explains that the linguistic challenges that differentiate L1 students and L2 students lead to difficulties not only in writing, but also in reading. Therefore, the unique challenges of teaching writing to L2 students may require an explicit emphasis on building reading skills. Grabe (1991) aptly summarizes the reciprocal nature of reading and writing by stating that better writers tend to be better readers since better writers read more. Likewise, better readers tend to write “more syntactically mature prose” (p. 394). It could be inferred that better readers also tend to write more lexically mature prose.

Reading for Writing Strategies
Since both reading and writing require an adequate level of language knowledge such as lexical awareness and grammatical competence, the more reading material that is offered in a writing course the greater the opportunity students will have to acquire knowledge of vocabulary, grammatical structures, or rhetorical features of texts (Tsai, 2006). The pedagogical implication is for teachers to use strategies that facilitate the acquisition of language while scaffolding reading material to encourage the production of target language on written assignments. Many proponents of combining L2 reading and L2 writing courses (Hirvela, 2004; Tsai, 2006; Plakans, 2009) suggest teaching various strategies for reading to write such as mining, writerly reading, rhetorical reading, modeling, and extensive reading. Mining, a common process of gathering information from a text to satisfy a specific goal is similar to skimming and scanning for information. This reading strategy can be easily practiced in task-based exercises to train students how to use mining as a way of collecting necessary content for writing longer essays or research papers. Writerly reading differs from mining in that writerly reading aims to improve students’ use of vocabulary and rhetorical modes by example.
5. Generating Reciprocal Reinforcement in Teaching

When instructors are involved in teaching both L2 reading and L2 writing they gain a better perspective of how students acquire language. This is especially important for understanding how and when students are moving through multiple levels of lexical processing. Barcroft (2004) explains that lexical input processing requires “appropriate types of instruction for different stages of development” (p. 203) and ample time for processing. Through involvement in teaching both L2 reading and L2 writing, teachers have a better perspective for choosing effective types of vocabulary instruction. Teachers also have a better understanding of students’ incremental development in vocabulary acquisition as L2 learners progress from the lexical input processing stage to the stage in which guided output is beneficial to the stage in which students are able to use new vocabulary as comprehensible output.

Below is a list of methods and activities that teachers can use to generate reciprocal reinforcement for effective instruction of L2 reading and L2 writing.

5.1 Combining Intensive and Extensive Reading

Many experts stress the importance of providing as much reading material as possible for students (Krashen, 1985; Brown, 1987; Hirvela, 2004). Reading extensively builds awareness of the ways English is used in written communication (Mo, 2012). However, just providing material and hoping that students will read is certainly not enough. Some motivated students who are adept individual learners may take the initiative to read on their own, but other students may need more encouragement and guidance. Therefore, to integrate reading and writing adequately, Mo (2012) suggests writing exercises such as summarizing and imitation since these types of exercises combine extensive and intensive reading.

Summarizing is valuable practice that requires students to search for main ideas and then restate those ideas using their own words. Summarizing exercises are suited for short articles and essays as well as other material such as novels, biographies or other longer prose that students read from an extensive reading collection (Mo, 2012). Imitation is using thematic readings that are commonly found in college textbooks as models for students to imitate. Instructors can analyze these texts in class as a way of explicitly emphasizing various aspects of the writings and. The analysis should begin on a macro-level that draws attention to writing styles, rhetorical modes and organization. As students begin to understand those aspects of writing, the instructor can shift the analysis to the micro-level by focusing attention on relevant vocabulary and sentence patterns. After presenting and analyzing several model texts, students are asked to write a similar piece while trying to imitate style, rhetorical modes and organization.

5.2 Highlighting Targeted Language in Guided Output

This is very similar to analyzing texts for imitation as mentioned above. As L2 writing students either correctly or incorrectly use similar grammatical structures to those sentence patterns highlighted in reading material, instructors become aware of specific points that need review and additional practice on a micro-level. For such explicit language teaching, instructors may incorporate traditional grammar exercises to support students’ efforts during the revision process of composition assignments. Likewise, L2 writing instructors can use students’ compositions to
receive feedback on how well students acquire new vocabulary and are able to use those words or expressions effectively.

5.3 Vocabulary Notebooks
Folse (2008) recommends that instructors teach students how to maintain a personal vocabulary notebook. Vocabulary notebooks are a useful form of guided output and also promote individual learning. In an L2 program that emphasizes reciprocal reinforcement, instructors of all courses should encourage students to bring their vocabulary notebooks to class. The notebook should not be specific to one class, but rather a feature of the whole L2 program.

Steps for keeping a notebook may vary from student to student. Generally, L2 learners write new words in the notebook. Instructors may encourage students to include specific key words that are expected to be repeated or that are relevant in other courses. The L2 learner should write an easy-to-understand definition of the word in the target language. Folse (2008) adds that an L1 definition may also be useful, but that may depend on the proficiency level of the L2 learner. In addition to a definition, the L2 learner should add an original example of how the word is used. Developing an original example triggers semantic processing of the word. Instructors should encourage students to review words often and use words from the vocabulary notebook for assignments. Using new vocabulary words both in oral communication and in writing assignments will encourage elaborate rehearsal and promote long-term retention.

5.4 Web-based Materials
Using web-based materials to build schemata is beneficial as both pre-reading and pre-writing activities. Pictures, videos, blogs and other internet sites are excellent for familiarizing students with content that may be new. This is advantageous for facilitating lexical input processing. For example, if students are assigned to read several articles about the causes and effects of various environmental problems and then write a cause-and-effect essay on an environmental problem; it would be very useful to first show the students several videos or pictures of related environmental topics so they can begin to visualize what they are about to read. Web-based schemata-building activities that prepare students for both reading and writing assignments are also a way of conserving resources since the activities serve to build schemata for L2 reading texts and L2 writing assignments simultaneously.

5.5 Peer Sharing and Peer Collaboration
Although many writing instructors use peer sharing, peer collaboration and peer evaluation of writing assignments as pedagogical tools in the L2 writing class, these should be considered as integral exercises in the reading-for-writing class. Peer sharing and collaborative writing trigger L2 learners to reflection on the language they produce and negotiate meaning for comprehensible output (Swain, 2000; Kessler, 2009). Leki (1993) claims the peers sharing what they write in the classroom can add a social dimension. She explains, “By reading each other’s texts in a reading/writing class, students directly confront the elusive, slippery nature of meaning” (p. 22). Since what a writer intends may not be what the reader perceives as the meaning, such peer sharing creates an opportunity for “real negotiation over meaning.” Qian (2010) reasons that peer sharing “is an important part of the writing experience because it is by responding as readers that students
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will develop an awareness of the fact that a writer is producing something to be read by someone else” (p.15).

5.6 Encourage Students to Avoid Translation
As electronic dictionaries have become ubiquitous in the L2 classroom, students often use them as if they were magic wands capable of deciphering the secret code of all those unfamiliar words. However, rather than being a shortcut to language acquisition, electronic dictionaries are more likely to be a crutch that can permanently handicap a language learner. Therefore, it is imperative that instructors teach students how to use dictionaries effectively. Students should minimize using dictionaries while reading so as not to dwell on each word, but rather focus on the meaning of the text. For writing, instructors need to stress the usefulness of using dictionaries as tools to find models for how new words are correctly used in sentences. Part of this process is encouraging students to use English-to-English functions on their electronic dictionaries.

6. Conclusion
Sufficient knowledge of vocabulary is necessary for L2 learners to comprehend messages as well as produce comprehensible messages. The importance of lexical competence for decoding comprehensible input and producing comprehensible output deems it necessary to consider aspects of reciprocal reinforcement in L2 syllabi design. In a reading-for-writing approach, writing assignments serve as guided output to help students understand the gap between what they would like to communicate and what they are able to communicate. Reciprocal reinforcement of vocabulary in reading-for-writing lessons can aid in raising students awareness of their gaps between understanding new vocabulary and being able use those words to create meaningful messages. This conscious-raising function of reciprocal reinforcement can trigger cognitive processes such as language learners testing their individual hypotheses of how the target second language works. Additionally, Metalinguistic analysis and deep semantic processing result in long-term retention of new vocabulary words.

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