Reading in a Foreign Language October 2013, Volume 25, No. 2
ISSN 1539-0578 pp. 170–191

Reading as a social interactive process: The impact of shadow-reading in L2 classrooms

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Abstract

Unlike research in reading which focuses on data from individuals reading independently, this study identified second language (L2) college students' reading processes that occurred within dyadic peer interactions during shadow-reading, a collaborative procedure based on repetition and summarizing. Also, written retellings (immediate and delayed) were collected to assess the impact of shadow-reading on comprehension and retention. The qualitative analysis of the data was based on the collaborative talk that occurred as partners either attempted to resolve language-related problems in the text or discussed idea-related situations. This analysis revealed comprehension-enabling and comprehension-building processes. The quantitative analysis was based on a numerical assessment of the retellings of the shadow-reading participants and of another group, who read the text individually, without shadow-reading. The shadow-reading group performed significantly better in both conditions, immediate ($p < .037$) and delayed ($p < .004$). The pedagogical implications of the use of shadowing in L2 classrooms are discussed.

Keywords: shadow-reading, L2 reading, collaborative talk, reading strategies, sociocultural theory, interaction

The research agenda proposed by the Rand Reading Group redirected the conceptualization of literacy from the view of reading as an individual, product-oriented process to a socially-constructed, language-mediated process (Sweet & Snow, 2002). Therefore, meaning-making processes should be examined in light of interactional, collaborative activities that result in the co-construction of meaning between and among readers and not just as the product of a single reader's individual process. From this perspective, we set out to explore models, theories, and pedagogical practices that embody a reconceptualization of reading in its current view, specifically in a second language (L2), an area that traditionally describes reading mainly as the product of cognitive and linguistic processes based on *individual* reading and not as an interpersonal, collaborative activity (Grabe, 2009; Hinkel, 2006; Hudson, 2007). In order to address L2 reading as a collaborative process, shadow-reading, as used in this study, was selected for analysis. To clarify, this technique is different from following the recording of a text without interacting with a partner, also referred to as shadow-reading in L2 (Anderson, 2009;

Nakanishi & Ueda, 2011). Instead, it is an adaptation of conversational shadowing (Murphey, 2000, 2001), a pedagogical technique in which L2 learners "shadow" their interlocutors' oral language through complete and selective repetition. The oral input in shadow-reading comes from the oral reading of one partner (Reader) for the other partner (Shadower) to repeat and later summarize the repeated text. Similar to conversational shadowing, learners comment on the text and help each other construct meaning, an aspect that situates shadow-reading as a literacy event that is socially structured. This view shares some aspects of several procedures used in L2 reading that require different forms of partner reading such as those listed by Grabe and Stoller (2011): echo reading, buddy reading, cooperative repeated reading, and oral paired rereading (p. 210), all focusing on fluency practice. However, these techniques do not include repetition and summarizing tasks required in shadow-reading or the joint construction of meaning.

As teachers of low-proficient L2 learners, we were interested in providing our students with a technique such as shadow-reading that was more student-centered than teacher-guided. This technique would give us the opportunity to determine which strategies contributed the most to comprehension in a peer-mediated reading task. Traditionally, comprehension has been researched in L2 reading by identifying strategies through the collection of data from individuals reading independently. Strategies have been identified with methods that describe reading processes upon interruption of its natural fluidity or after completing the task. In a summary and description of a number of studies in L2 reading, Brantmeier (2002) points out that most researchers reported a binary classification of strategies described as general or local, identified through think-alouds, questionnaires, tests, interviews, self-reports, and retellings. Unlike these studies, our research focused on real-time reading as the students interacted with each other while shadow-reading to solve difficulties and to discuss viewpoints, opinions, and doubts. According to Kern (2000), "researchers need to observe not just what *types* of strategies readers use, but also how particular readers use particular strategies in particular ways in particular contexts" (p. 318).

A Sociocultural Perspective of Reading

Currently, L2 reading is viewed as an interactive process based on first language (L1) reading theories (Barnett, 1989; Bernhardt, 1991; Birch, 2007; Coady, 1979; Grabe, 2009; Grabe & Stoller, 2011, 2013). Interaction is characterized in two ways. It can refer to a reader's simultaneous use of lower-level identification skills and higher-level comprehension strategies. It can also refer to the interplay of the reader with a text that activates specific individual schemata such as content knowledge of topics, scripts, perspectives, and the first language (L1) on the one hand, and formal knowledge of text features ranging from sound-symbol relationships to discourse organization on the other. This notion of interaction, however, does not take into account interactions in which meaning is co-constructed through the interdependence of social and individual processes of collaborative reading activities such as shadow-reading. Therefore, the basis for a different focus is Vygotskyan sociocultural theory (SCT), which helps characterize reading comprehension as a result of another kind of interaction—one that occurs when two readers jointly construct meaning. The shift towards a view that reading comprehension emerges as an outcome of the interaction among participants leads us to consider how reading is related to two important tenets of Vygotskyan SCT: mediation and the zone of

proximal development (ZPD).

The central concept of SCT is mediation, based on Vygotsky's claim "that higher forms of human mental activity are mediated by culturally auxiliary means" (Lantolf & Thorne, 2006, p. 59). Spoken and written language activities within participatory patterns are among the auxiliary means that enable people to develop thinking. This concept provides a basis to describe strategies that emerge when L2 readers engage in co-constructed reading activities as opposed to reading independently and does not disregard the view of reading as the interaction among different features in a text or the interaction between a reader and text. It goes beyond these types of interaction to include the social mediation provided by interactions between and among learners who jointly construct meaning.

The second tenet, which has a crucial bearing on examining reading, is Vygotsky's concept of the ZPD which helps explain how participatory learning takes place and how co-constructed meaning is internalized. The ZPD is described as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). In explaining the ZPD, Vygotsky proposes that learners can solve problems or perform tasks that are beyond their current level of development if they are offered help that is sensitive to their maturing mental functions, and they are thus led, through social collaboration, to higher levels of development. Learners working within their ZPDs engage in social functions, which are appropriated and internalized to be later used independently in new contexts. When applied to the development of reading and the ability to construct meaning from written texts, the movement from a social plane of mental functioning (an interpsychological category in Vygotsky's theory) to a psychological (intramental) plane can also occur as a result of social interaction in the ZPD. In other words, individual cognition needed for independent reading emerges through social mediation in the ZPD.

Purpose of the Study

The purpose of the study was to describe the co-constructive nature of reading processes when carried out by low-proficient readers in a peer-mediated activity such as shadow-reading. The researchers specifically attempted to answer the following questions related to shadow-reading:

1. What processing strategies were used in the learners' collaborative talk to comprehend the text during shadow-reading?
2. Did shadow-reading contribute to comprehension and retention as evidenced in the recalls of students who did shadow-reading when compared to those who did not?

Method

Participants

The participants were two groups of Spanish-speaking learners taking their first basic English as

a second language (ESL) course at a private university in Puerto Rico. Upon admission to the university, the students scored at the lower end of the English as a Second Language Achievement Test (ESLAT), a College Board ESL achievement test which ranges from 200 to 800 points. One group, which was formed of two intact sections of the same basic course, was exposed to shadow-reading. Although all students in these two sections received the shadow-reading intervention, only those students who were present at each phase of the data collection procedure were selected as participants. A total of 26 students, 11 females and 15 males, were thus selected for the shadow-reading intervention. The participants in the "shadow-reading group" had an average age mean of 21 and an ESLAT mean of 374. Data were also collected from a comparable group of learners, members of another section of the same basic course. These students, who were not exposed to the shadow-reading intervention, read the same story individually and wrote the immediate and delayed retellings as the other group did. In this "no shadow-reading group," there were 21 participants, 7 females and 14 males, with an age mean of 22 and an ESLAT mean of 375. Individual and parental consent forms were obtained from all participants in accordance with Institutional Review Board procedures.

Data Collection

Data were collected from the shadow-reading recorded sessions and the written recalls. Prior to data collection, a series of training sessions was conducted to familiarize students with the shadow-reading technique and to develop oral fluency in reading. In seven consecutive classes, students practiced "chunking" (the ability to segment long utterances into shorter semantic and syntactic units), watched Murphey's (2000) *Shadowing and Summarizing* video, and practiced shadowing based on the reading of short sentences first and then short narratives.

Shadow-reading recorded sessions. For the actual data collection session, which took place during normal class time, pairs of students were formed and a tape recorder was provided separately to each dyad to record the oral reading procedures. Before starting, the students were reminded that, after completion of the shadow-reading session, they would be given a sheet to write down everything recalled from the entire reading selection.

The students read the story "Lost and Found" (slightly adapted from Heyer, 1987; see Appendix A). It was divided in two approximately equal parts of three paragraphs each to ensure that both partners read and shadowed the same number of words. Several changes were made to the passages to make the text more challenging and the reading more strategic: three words were changed in each of the two parts of the passage. One word was changed to a more difficult synonym, one to a misspelled word, and one to an incongruent idea. Similar changes to words have been used in L2 assessment as a means to uncover decoding deficits (Pulido, 2004). The changes would throw light on the types of strategies the learners used to process the unfamiliar words. If the words were orally read as presented without the students' comments on the uncommon forms, it could be assumed that the learners read at a superficial level. In contrast, if they noticed the changes and remediated lapses in comprehension, they were likely processing the text at a deeper level. Lantolf (2000) explains that learners, when faced with a complication, generally "explore ways of (re)mediating the activity through integration of different mediating artifacts" (p. 6).

Part I of the text was first read orally by the designated Reader, and the corresponding partner, the Shadower, repeated. Repetition was performed in two ways: complete and selective. Complete repetition was done out-loud, low-voice, and silently. Then, selective repetition was done by only repeating key words or phrases. Students were reminded that they could add comments to expand, confirm, or clarify ideas. These comments would be classified as collaborative talk, described by Murphey (2001) as interactive shadowing. Oral summaries of each paragraph were then produced by the Shadower. When Part I was finished, partners reversed the roles of Reader and Shadower, and worked on Part II. These shadowing tasks were identified as the Interactional Phase of the study.

Retelling in written recalls. Upon finishing the shadow-reading session, students were asked to individually produce a written (immediate) recall of the whole story in English. Five days later, they were required to write a second (delayed) recall in English. Then they were asked to write a third recall in Spanish. Allowing the participants to write their recalls in their native language, Spanish, helped them state their ideas more freely without the possible problem of expressing ideas in the L2 (see Bernhardt, 2011, for the use of the native language and a detailed explanation of the recall procedure for assessment purposes). Recall tasks were used to obtain a quantitative measure of reading when accessed and stored. Analysis of immediate and delayed recalls can help distinguish how information is processed and stored in short-term memory and how it is processed and selected for permanent storage in long-term memory. The retelling tasks were designated as the Non-Interactional Phase of the study. Table 1 summarizes the specific tasks carried out in shadow-reading in this study.

Table 1. *Phases of shadow-reading activity*

Interactional phase	Complete shadowing	Out-loud Low-voice Silent
	Selective shadowing Oral summary of paragraph Oral summary of entire Part I or II	
Non-interactional phase	Written retelling (immediate) Written retelling (delayed) Written retelling (delayed, Spanish)	

Retelling data were also obtained from the no shadow-reading group, that is, those participants who had not been exposed to shadowing and summarizing training. They were given the same story as the shadowing group and were asked to read it silently as they usually did in class, individually, at their own pace. They were told that afterwards they would have to write down everything they remembered from the selection. Immediate retellings were then collected. Five days later, the participants wrote delayed recalls in English and Spanish, following the same procedure as in the shadow-reading group.

Data Analysis

Data obtained from the two phases in the study consisted of the transcriptions of the audio-recorded shadow-reading sessions of 13 dyads (N=26) and the students' written retelling

protocols.

Interactional phase. The first step in data analysis was the transcription of all oral phases of the shadow-reading tasks. Then, within the transcriptions, we identified segments of collaborative talk that emerged naturally during complete shadowing and also during summarizing. Each segment was analyzed to identify its purpose, focus, the strategy used, and the developing process of comprehension. To establish regularity in coding, we first jointly analyzed the transcripts of three dyads. Afterwards, each researcher independently coded the remaining transcripts, making sure to share results and solve discrepancies through mutual agreement.

Non-Interactional phase. To address our second research question, we quantitatively analyzed the retellings of the shadow-reading group and compared them to the retellings of the no shadow-reading group, who simply read the story individually. A rubric (Appendix B) was prepared to measure the students' degree of retention and comprehension of the essential information in the text. The rubric was designed on an ordinal scale with values ranging from 0 to 4, where 0 corresponded to *no attempt* (failure in recalling information) and 4 corresponded to *excellent* (well developed retelling with accurate recall of essential information). Three external raters (colleagues of the researchers) were trained in using the rubric with practice samples and then given the recalls of both groups for evaluation. A blind assessment procedure was followed where neither the group type (shadow-reading or no shadow-reading) nor retelling condition (immediate or delayed) was revealed to the raters. Based on the raters' scores, a Spearman *rho* correlation test—appropriate for ordinal data—yielded the following interrater reliability coefficients: 0.81 between raters 1 and 2, 0.81 between raters 1 and 3, and 0.79 between raters 2 and 3. All correlation coefficients were significant at a 0.01 level. In addition, to assess differences in scores between the shadow-reading and the no shadow-reading group, the Mann-Whitney *U* median test—appropriate for ordinal data—was used. The alpha level was set at 0.05 for all statistical tests.

Results and Analyses

Results of Interactional Phase

This section addresses the first research question: What processing strategies were used in the learners' collaborative talk to comprehend the text during shadow-reading? The students' collaborative talk revealed three purposes: to solve a specific language breakdown, discuss the meaning of the text, or regulate the task. We decided to focus only on the first two purposes because they were more directly related to creating meaning. A base framework with two classifications was established to examine the purposes from perspectives grounded in reading theories: (a) *comprehension-enabling* talk, which included problem-solving of lower-level skills of reading, mainly dealing at the word level of a text, and (b) *comprehension-building* talk, which included meaning-construction processes. During comprehension-enabling talk, strategies were identified, specifically dealing with pronunciation, orthography, word recognition, lexical access, or syntactic processing. Appendix C shows a summary of the lower-level aspects of reading that students focused on and the specific strategies identified in their collaborative interactions.

In addition to the strategies presented above which *enabled* comprehension through problem-solving, we found that learners engaged in strategies that contributed to *build* comprehension through elaboration, prediction, inferring, and monitoring. Appendix D includes the identified interactions in this category.

The observed strategies in both kinds of talk can be summarized as supporting, simplifying, and clarifying moves that helped the learners jointly obtain meaning. Similar strategies in both classifications have been identified in L2 research with participants reading individually (Brantmeier, 2002). In contrast, the strategies found in this study emerged from the joint collaboration of the readers.

Analyses of comprehension-enabling talk. Key selected excerpts from various dyadic exchanges were analyzed within three aspects: the language focus underlying reading, strategies used to solve language-related problems, and the learners' development or learning in each case. The notation system used in the transcripts in this study follows:

R	Reader's oral reading of text or commenting during tasks
S	Shadower's repetition or comments during tasks
bold italics	inserted comments, questions, requests, errors, other-corrections, modifications
(parentheses)	translations/explanations provided by researchers
[brackets]	phonetic transcriptions

Phonological processing. Linking written symbols to their corresponding spoken sounds is a universal requirement in reading, but it is carried out differently across languages because of its language-specificity. Therefore, L2 readers must learn new and different sound-symbol correspondences to be able to recognize them as they hear speech and pronounce them when they produce speech. After reviewing the literature, Koda (2004) concluded that the "ability to pronounce printed words is, in fact, regarded a powerful predictor of reading success among primary grade children" (p. 33). It may be hypothesized that the same can be applied to L2 learners of any grade level. Furthermore, in the present study, students were reading orally, a situation where pronunciation and fluency are relevant for readers in making sound-symbol relationships which "must become automatic in order for fluent silent reading to develop" (Birch, 2007, p. 10).

The identified interactions in this category were mostly other-corrections by the Shadower whose awareness of a mispronounced word by the Reader prompted the move. Mispronunciations were either caused by the Reader's unfamiliarity with sound-symbol correspondences in English, as in [riliz] instead of [riəlajz] (realize), or negative transfer from Spanish, as in the following excerpt:

R: He has the same color **[*ɛʤɛs*]** (eyes)
S: **[*ajz*]**

R: **[*ajz*]**

In this excerpt, the Reader mispronounces the word *eyes* as he reads it from the text. The source of the mispronunciation comes from Spanish, where the written similarity of the word *reyes* (pronounced [rɛʤɛs]) is incorrectly transferred to English through analogy. Negative transfer of this sort can impede progress in reading and needs to be addressed in L2 classrooms. However, we must also be aware that the combination of the letters *e-y-e* is a typical example of the lack of fit between sounds and letters in English, another factor that contributes to difficulty in reading. The Shadower, who did not see the word *eyes* and only heard its mispronunciation, noticed the error and produced it correctly as a way of helping the Reader who then corrects himself. The Shadower's awareness shows sensitivity to the phonological structure of spoken words and the need to provide the Reader with the correct pronunciation to recognize the word. Another example of phonological processing is seen in the following excerpt:

R: You can probably guess.
S: You can prob … you can prob … ***eh*** … (laughs) … ***sorry*** …. You can probably guess.
R: ***You want repeat?***
S: ***Repeat word only. Yes. Repeat the word.***
R: ***Pro-ba-bly*** (syllable segmentation)
S: Probably. You can probably guess.
R: **Uh hum**.

After two attempts to repeat the word *probably*, the Shadower is able to produce it. Even though the word was produced correctly, the Reader offered to repeat as he noticed difficulty in the attempts. The Shadower accepted and clearly requested that only the troublesome word be repeated. The word has two syllables that start with [b], one followed by a vowel and one by a consonant, perhaps posing a problem in pronunciation. To facilitate the Shadower's imitation, the Reader chose to segment the word into syllables, a choice which reflects the Reader's awareness of the need for some form of simplification to assist the Shadower. Segmentation helped the Shadower produce the word correctly and presumably recognize its meaning. In reading, segmentation of spoken words into their component sounds helps develop phonemic awareness or knowledge that words are made up of discrete sounds. This knowledge is necessary in reading alphabetic languages such as English and Spanish. It is presumed, then, that the Reader in the above example has already developed this awareness in the L1 and used it to enable the Shadower's production of the word. Subsequently, upon hearing the Shadower's correct production, the Reader acknowledged the successful attempt.

Orthographic processing. Readers accumulate knowledge of the way written symbols (letters) are combined to represent words. This visual recognition is not a letter-by-letter process but rather a whole word process that contributes to accessing meaning (Grabe, 2009; Koda, 2004). However, readers do focus on internal word elements and letter associations to develop word recognition competence.

In the following sample, the Shadower had difficulty repeating the word *adopted* and asks for repetition which is provided by the Reader who mispronounces the word:

R: and are both ***adopt***

S: ***Please repeat for second part***
R: ***OK. I begin again.***
S: ***OK***
R: and are both ***adopt*** (incorrect pronunciation)
S: and are both ***adopt***
R: ***Adopted a-d-o-p-t-e-d*** (self-corrects and provides spelling)
S. ***Ah*** ... and are both adopted; and are both adopted

Focus on the spelling illustrates the Reader's use of orthography to help the Shadower recognize the word and at the same time self-correct his pronunciation of the word. The Shadower expressed recognition of the correct pronunciation after hearing the spelling and was able to repeat correctly. This joint interaction of requesting and providing repetition, accompanied by the Reader's use of orthographic processing, helped the Shadower recognize the word and produce it adequately.

Other examples of orthographic processing show how students dealt with the misspelled words that had been deliberately introduced in the text. In some cases, the Reader automatically self-corrected the word as in *hair* instead of *haid* and *students* instead of *stadents*. As mentioned previously, readers accumulate knowledge of word spellings, so when faced with misspellings, that knowledge facilitates recognition of the correct word. Familiarity with graphemic images helps readers decode misspelled words if they are visually and phonologically similar (Birch, 2007). In one instance, the students commented that the teacher had made a mistake in typing the text:

R: He has the same dark curly haid, ***hair, ay, aquí también*** (oh, here too), ***hair***.
S: He has the same dark curly hair.
R: ***Ah*** ...
S: ***Otro disparate de la misi. Misi, nosotros estamos enseñándole a usted.*** (Another absurd thing by the teacher. Teacher, we are teaching you.)

These comments illustrate the students' metalinguistic awareness concerning the misspellings. Other students in this study did not notice the misspellings and read the words as presented. They probably did not have enough knowledge of English graphemes to activate and use in processing words.

Word recognition. Shadow-reading requires the Reader to read orally while the Shadower listens and repeats. According to Birch (2007), oral reading is intentional, directed to giving a listener a text corpus to comprehend which "requires quite a bit of processing work, effort, and attention" (p. 51). In shadow-reading, the Shadower must discriminate sounds and identify words to repeat with proper pronunciation and phrasing as a foundation to comprehending text. In the examples that follow, we include instances of the students' handling of problems with word identification, either because the word was not recognized or was incorrectly repeated.

When a word was not identified and could not be repeated, the Shadower sometimes requested repetition explicitly:

R: No one told the boys …
S: ***Repeat again.***
R: No one told the boys. No one told the boys
S: No … told the boys
R: that they have a brother
S: that they have a brother

The Reader repeats the entire phrase twice, but the Shadower still cannot repeat the word *one* and does not request further help. The Reader ignores the problem and continues the task providing the second part of the sentence. Perhaps the Reader did not notice the missing word or thought that it was not important.

In another sample of difficulty with word recognition, the Shadower apparently has trouble with the word *curly* and requests repetition in an indirect way by pausing with rising intonation:

R: They have the same dark curly hair.
S: They have …? They have …?
R: the same dark curly hair
S: They have the same ***have*** curly hair
R: same dark curly hair
S: They have the same dark …?
R: They have the same dark curly hair.
S: They have the same dark ***colorly*** hair.

Several attempts did not result in the solution to the problem even though it was addressed in the interaction. The Reader continued with the task without correcting the Shadower, perhaps choosing to ignore the difficulty in order to complete the task.

In both samples presented, the Reader provided repetition, and the Shadower attempted to produce the missed word and failed. Word identification in oral contexts is more difficult than in written texts because of the lack of orthographic support and sole dependence on auditory input. However, in the above samples, missing words did not prevent the learners from continuing the interaction and attempting to complete the task.

Lexical access. Word identification can include pronunciation of words but does not necessarily lead to access of meaning. Accessing meaning requires "interrelated processing skills, including constructing a context, accessing stored information through visual word displays, selecting a relevant meaning based on contextual information, and evaluating the appropriateness of the chosen meaning in subsequent sentences" (Koda, 2004, p. 48). Bilingual readers can also access meaning through their L1, especially adult learners who have been found to learn more words and obtain higher reading scores when using a bilingual dictionary (Knight, 1994). Dictionaries were not allowed in the present study, but students resorted to Spanish to access meaning, as illustrated below:

S: dark and curly hair
R: Curly. ***¿Qué es "curly"?*** (What is "curly"?) ***¿Como corte de pelo?*** (Like a haircut?)

S: ***No, ricitos.*** (No, little curls.)
R: ***Ah, ricitos.*** (Oh, little curls.)

Syntactic processing. Reading comprehension goes beyond extracting information at the word level and includes integrating information at the sentence level in which syntax, word order, semantic units, and organization facilitate meaning. Grabe (2009) contends that there is a strong relationship between reading comprehension and syntactic awareness in L2 and that grammar has specific roles in reading. The samples that follow illustrate Grabe's description of these roles.

Grouping words in phrasal units. In the following sample, the Shadower requests repetition of the sentence, and the Reader chunks the complex sentence in two shorter clauses in an attempt to simplify the information.

R: Later Bob and Eddy find out that they have another sibling.
S: ***Can you repeat please?***
R: Later Bob and Eddy find out/
S: Later Bob and Eddy find out/
R: that they have another sibling
S: they … ***Oh, jeez … can you repeat please?***
R: that they have another sibling
S: that they have another sibling … that they have another sibling

Hijikata (2005) claims that reading in meaningful chunks is crucial for L2 reading and fundamental for fluent reading. In this case, the modification of input allowed the Shadower to repeat the sentence in manageable clauses. Incorrect chunking, however, affects comprehension, as seen in the following sample, where the problem was resolved only after the Reader realized his error and attempted to correct it:

R: Bob and Eddy have the same color
S: Bob and Eddy have the same color/Bob and Eddy have the same color
R: ***I do bad chunking … color feet is …***
S: Dark curly **[hər]** (*her* instead of *hair)*
R: Bob and Eddy have the same color feet
S: ***Ah, OK, OK. Please repeat.***
R: ***I do bad chunking.*** Bob and Eddy have the same color feet
S: Bob and Eddy have the same color feet/Bob and Eddy have the same color feet.

Disambiguation. Inconsistencies in a text require clarification for comprehension to occur. These inconsistencies can include syntactical elements and not just semantic aspects. The following sample shows how the Shadower noticed that his repetition signaled a different meaning from the intended one in the text by just omitting the word *me*. Upon the Reader's repetition of the original sentence, the Shadower was then able to repeat it correctly.

R: Why do some students call me Eddy?
S: ***Why do some students call Eddy? ¿Cómo fue?*** (What was that?)
R: Why do some students call me Eddy?
S: Why do some students call me Eddy?

Tracking of referents. Creating a coherent understanding of a text can be facilitated by relating syntactical elements such as pronouns, tenses, articles, among other referents. In this study, selected words were changed in the text to explore whether learners would notice them and comment on the changes. The following sample illustrates how the learners recognized the pronoun change, from *he* to *she,* and how they dealt with it:

R: She has the same color eyes.
S: ***¡Espérate!*** (Wait!). ***¿Cómo que "she"?*** (Why *she*?)
R: (laughs)
S: ***No, no, no, pero en verdad*** (No, no, no, but really)
R: ***Yo creo que la profesora se equivocó. Debe ser*** **"He has the same color eyes."** (I think that the teacher made a mistake. It should be "He has the same color eyes.")

The learners focused on a grammatical form that did not refer to the gender of the character in the story. The Shadower questions the incongruent reference, which leads the Reader to respond by judging the teacher and giving the correct statement. In this case, the questioning of the Shadower is a subtle interactional cue that stated a difficulty and invited the Reader to also consider it. Prompting of this sort seems to be a form of assistance that helped the Reader solve the inconsistency and develop comprehension.

Discourse signaling. Specific cues help tie ideas in a text so that its structure is coherent. During summarizing tasks, students sometimes helped each other keep the flow of the text and structure its development by offering cues. In the sample that follows, the Reader prompts the Shadower, who is summarizing, by giving one word that helps continue the discourse:

S: OK. Eh … happy in his new school … um … and …
R: ***He*** ...
S: OK. He friendly … he's friendly.
In another example, the Reader prompts by giving more information, an action which results in both learners doing the summary:
S: Eddy was a student last year in that school and …
R: ***Now he comes to a different school.***
S: Now he comes to a different school and now …
R: ***And you look like Eddy.***
S: You look like Eddy and they …

The engagement of the students is apparent, and their modification of the task by both summarizing provides them with additional opportunities for language and reading development.

Analyses of comprehension-building talk. Key selected episodes from various dyadic interactions illustrating inferencing, elaboration, and monitoring are presented and discussed.

Inferencing. Students of low proficiency in the language tend to focus more on lower-level processes in reading and very likely struggle with higher-level processes that require going from mere attention to individual words to supplying missing information and identifying

intended meanings. Inferencing is one of these higher-level processes and requires recognition of cues that can lead to information not stated in a text. "There is no doubt that successful comprehension depends on inferencing at all levels of text comprehension, ranging from connecting text to background knowledge, different parts of the texts to one another, and known elements to unknowns" (Nassaji, 2007, p. 85).

In the sample that follows, the joint collaboration of the learners helped them make an inference as they constructed a framework of cognitive actions during summarizing:

> R: ***It's curious because they are same in everything, birthday, color, feet, smile, color hair … everything same.***
> S: ***Oh … I think they look like twins. So you think so?***
> R: ***Yeah … I think so.***

First, the Reader connected relevant facts, which helped construct the text base and context for information that was not explicitly stated. Then, the Shadower noticed the information and adequately related it to his knowledge of "sameness" and inferred that the characters were twins. He also checked his opinion with the Reader who expressed agreement. In this instance, thus, the process of "building" comprehension emerges through mutual collaboration, a view compatible with the SCT perspective. In the sample, the Reader provides facts that mediate the context or cues needed to derive information not stated. As a result, the Shadower reacts to the cues and is able to construct an inference which is accepted by the Reader. This collaboration accounts for the co-construction of the inference and reflects cognitive development.

Elaboration. Information stated in a text can be made more meaningful by connecting it to other portions of the text, to personal experiences, to world happenings, or by expanding it with examples and applications of the content. This relationship should be semantically and cognitively adequate in order to clarify and extend the stated facts. In the excerpt that follows, the learners comment on the outcome of the story by hypothesizing about similar events that could happen in their own lives:

> S: ***You see how little or short is the life, you know***
> R: ***Uh, hum.***
> S: ***If you no think in you have a brother, and then you met, you see, something in the world of life arrive.***
> R: ***Uh, hum. Wow! I'm no only, two more, someone always.***
> S: ***And I ask you, how do you feel that you know another brother that have same birthday, the same face?***
> R: ***Aha, wow!***
> S: ***What do you say about this?***
> R: ***I'm weird … Oh me God, the same me.***
> S: ***But I think is cool.***
> R*:* ***OK***

The Shadower expresses his view on the brevity of life and how unexpected events can change life. He further invites the Reader to relate to the situation of finding out about an unknown

sibling. This seems to lead the Reader to understand why the character in the text was puzzled by the coincidences and to empathize with his feelings. As in the above sample of inferencing, one learner, the Shadower, initiates the interaction by connecting the text to possible situations in life, thus elaborating information in the text. These elaborations, together with prompting questions to the Reader, gradually guide the Reader to relate to the text and end up sharing the character's confusion. Questions posed by the Shadower are similar to elaborative questioning conducted by teachers to urge students to expand responses.

Metacognitive awareness. Determining whether comprehension is occurring in reading and regulating one's action are aspects of metacognition that help readers become strategic processors (Grabe, 2009). Metacognitive knowledge "permits us to reflect on our planning, goal setting, processing of tasks, monitoring of progress, recognition of problems and repair of problems" (Grabe & Stoller, 2002, p. 46). Sarig (1987) refers to these actions as *monitoring moves* that depend on a reader's awareness of the need to control a task and certain abilities such as recognizing failure in comprehension.

The following sample illustrates metacognitive awareness, as the Shadower consciously sets a purpose during summarizing:

S: ***They have the same birthday; they are adopted. That's a coincidence. Let me see.***

At this point, the Shadower is starting to build a possible inference and expresses his intention to pursue clarification of the newly discovered "coincidence." His statement, *Let me see,* seems to reflect the learner's regulation of a task that will allow him to uncover the meaning underlying the cues. Even though there is no response from the Reader, perhaps the Shadower's expression of intentionality might have set a purpose and strategy for reading the remaining text.

Results of Non-Interactional Phase

To address the second research question (Did shadow-reading contribute to comprehension and retention as evidenced in the recalls of students who did shadow-reading when compared to those who did not?), a quantitative-statistical analysis of the written retellings was performed. Once the raters' scorings of the retellings (based on the 0-4 rubric, see Appendix B) were obtained, a Mann-Whitney *U* median test was conducted to observe differences in recalls between the group that did shadow-reading (N=26) and the group that simply read the story silently (N=21). Results showed that, both in the immediate and in the delayed retelling conditions, the shadow-reading group performed significantly better than the no shadow-reading group. In the immediate retelling condition, the shadow-reading group had a significantly higher median (*Mdn*=3) than the no shadow-reading group (*Mdn*=2, $p < .037$). In the delayed retelling condition, the shadow-reading group also had a significantly higher median (*Mdn*=2) than the no shadow-reading group (*Mdn*=1, $p < .004$) as presented in Table 2.

Table 2. *Median statistics for retellings of shadow-reading and no shadow-reading groups in immediate and delayed conditions*

Group by retelling condition	N	*Mdn*	Mean rank	*z*	Mann-Whitney *U*	Sig.
Immediate retelling				-2.087	178	.037
Shadow-reading	26	3	27.65			
No shadow-reading	21	2	19.48			
Delayed retelling				-2.862	143	.004
Shadow-reading	26	2	29.00			
No shadow-reading	21	1	17.81			

Although for both groups the scores were lower in the delayed condition, suggesting the normal effects of memory fading, the shadow-reading group was able to retain more and show better comprehension than the no shadow-reading group. Because both groups were comparable on all accounts (proficiency scores, language background, age, and course placement), the significant differences in favor of the shadow-reading group may be explained by the singular fact that this group engaged in shadowing and summarizing while reading the story. The students who read the story interactively in pairs may have benefited, in terms of story comprehension and retention, not only from extensive and recurrent exposure to the text, both in visual, aural, and oral form, but also from the multiple opportunities they had for reproducing and internalizing the story through repetition, summarizing, and collaborative talk. As seen in the qualitative analysis presented earlier, the learners in the shadow-reading group were able to put into effect numerous and varied comprehension-enabling and comprehension-building strategies, which were promoted to a large extent by the socially interactive, orally verbalized, nature of the reading process. The participants in the no shadow-reading group, on the other hand, relied only on their own individual resources and on silent reading processes for comprehending and internalizing the text. Although they may have engaged in subvocal private speech while outwardly reading the text in silence, this solitary process did not turn out to be as successful as the vocalized, collaborative interaction the shadow-reading group engaged in.

Conclusions

Summary

This study set out to explore the effectiveness of conversational shadowing when adapted for reading by low-proficient ESL learners. Data were obtained from two sources to address the two purposes of the study: identification of processing strategies during the joint interactions that the learners' engaged in as they were shadow-reading and comparison of the written recalls of the shadowing and no-shadowing readers.

The data obtained to address the first purpose revealed two broad types of strategies: comprehension-enabling and comprehension-building. The comprehension-enabling strategies emerged as learners jointly sought solutions to language-based obstacles related to lower-level skills in reading: phonological, orthographic, word recognition, lexical, and syntactic processing. Aspects of syntactic processing were specifically identified: disambiguation, tracking of

referents, and discourse signaling. Students resorted to word segmentation, spelling, chunking, and translation in response to their partner's explicit or implicit request for assistance or expression of difficulty with a language-related situation. In contrast, during comprehension-building talk, three types of strategies were generated: inferencing, elaboration, and metacognitive awareness. An analysis of the findings suggests that when students encountered problems in comprehension of the text, it was for the most part due to a language-based difficulty. Therefore, interactions that solved the problems served as stepping stones that "enabled" comprehension. On the other hand, when language-based aspects were not problematic, as in comprehension-building talk, interaction took on a more cognitive function that helped "build" comprehension through collaborative discussions of idea-related difficulties. This dichotomy is somewhat related to Swain's (2000) description of collaborative dialogue which includes problem-solving and knowledge. Swain states that the collaborative effort made by participants enables them to explore what they say, reflect on it, and construct new meaning.

The second purpose of the study focused on the comparison of the written recalls produced by students who performed shadow-reading and those who did not. The data revealed the superiority of the shadowing group, an outcome that can be attributed to three facilitative mechanisms of shadow-reading. First, the interactive nature of shadow-reading promoted supportive assistance and feedback between partners and allowed them to adjust to their respective ZPDs to either solve language-related problems or clarify comprehension difficulties. Second, the strategies that the students used contributed to deeper processing of language and construction of knowledge in their output. Third, repetition and recasting utterances in shadow-reading created opportunities for continued practice with language and ideas. Repetition in shadow reading is not the mere echoing of a stimulus, but the opportunity to focus attention on in-coming utterances and to decode and reprocess input for production and comprehension. The close combination of listening and repeating reinforces comprehension through the reconstruction of speech not only through repetitious shadowing but also in oral summarizing. The importance of repetition in L2 acquisition has been pointed out by Duff (2000): "frequency of exposure to input is a fundamental factor in determining its saliency and the likelihood that it will be noticed and acquired" (p. 110). In this case, frequent repetition in the various forms of shadowing and summarizing had a significant effect on comprehension and retention.

Implications

This study confirms the need to expand the view of reading as individual interaction between reader and text to include the emergence and construction of meaning through the interaction of two or more readers in collaborative dialog. Meaning, in this perspective, is attained as learners work together to comprehend a text and at the same time position themselves as co-constructors of meaning. As Appel and Lantolf (1994) put it, linguistic interaction between individuals helps them to "make sense of, or to comprehend, the world" (p. 449). Pedagogical practices, such as shadow-reading, based on a socially-interactive perspective of meaning construction should be encouraged in reading classes to expand traditional teacher-led discussions which assume transmission, response, and evaluation of a message. Shadow-reading in particular provides learners with a structured procedure that requires listening, repetition, and summarizing and encourages interaction between interlocutors who together construct the meaning of text.

A second implication of this study points out to the need to include a focus on lower-level aspects of reading for students of L2 low-proficiency. For these learners, rapid and accurate decoding is difficult and is resolved frequently by relying on prior knowledge through guessing in order to decipher texts. Eskey (1988) states "that language *is* a major problem in second language reading, and that even educated guessing at meaning is no substitute for accurate decoding" (p. 97). Therefore, focus on lower-level skills should not be considered unimportant but rather significant because they are the foundation of the very complex skills of reading. Grabe (2009) has stated that "comprehension cannot occur without the smooth operation of these processes" (p. 22). Furthermore, Nassaji (2007) states that "a growing body of L2 research now exists to document the critical role of lower-level processes in L2 reading comprehension" (p. 85). Most typical L2 reading textbooks seem to exclusively focus on providing practice with higher-level skills, which students simply cannot deal with if language-based difficulties are encountered. One way the participants dealt with language-based problems was chunking a sentence into manageable phrases. This technique would be desirable to include in reading methodology as a means of processing and integrating information more accurately as well as promoting reading fluency (Hijikata, 2005; Yamashita & Ichikawa, 2010).

Other pedagogical implications are derived from the effectiveness of specific tasks required in shadow-reading. First, repetition helps learners concentrate on the oral input: "Repeating what we hear brings it within us more deeply and reconstructing it in our own voice involves a deeper level of processing in the act of appropriation" (Murphey, 2001, p. 149). Therefore, repetition should be valued as an important procedure in L2 reading classes. Second, frequent summarizing of the text contributes to ongoing checking of understanding and development of organizing abilities. Janzen and Stoller (1998) include summarizing as one of the suggested strategies to be taught to help students monitor their understanding in reading. Third, shadow-reading also provides a means for practicing and improving specific aspects of language such as pronunciation, vocabulary, and even grammar as evidenced in instances of self- and other-corrections of items. "Strategies for reading comprehension build on linguistic resources (words, phrases, and structures) and support the basic comprehension model developed by the reader" (Grabe & Stoller, 2013, p. 4).

Most importantly, it can be assumed that in the process of shadow-reading, learners use reading strategies by taking responsibility for their own processing and understanding of text, first in collaboration with a partner and lastly on their own. The task allows learners to construct meaning along a continuum from interdependence, collaboration, and interaction to individual understanding and retention of meaning. The goal is to develop independent reading strategies that will help students understand a task at hand and ultimately use these strategies in other reading contexts.

Recommendations

As a research tool, shadow-reading provides a means to observe and identify the processes involved in a reader's construction of meaning. Shadow-reading could be further explored by taking into consideration possible intervening factors such as the role of prior knowledge, syntactic and semantic proficiency, in addition to the use of specific learning and reading strategies. For future research, collaborative talk as well as summaries and retellings of students

of varying proficiency could be examined to shed light on the processes and comprehension at different reading levels. Also, tracking the effect of collaborative talk from the interactive phase to the non-interactive phase could shed light on the unfolding of ideas as shadow-reading is resorted to in class. Finally, it is recommended that shadow-reading be investigated with other text genres such as content-based texts.

Acknowledgements

We would like to thank the administration of Inter American University of Puerto Rico, Metro Campus, for supporting our research. We also express our thanks to colleagues of the English Department for participating as raters in the study. In addition, we appreciate the useful comments made by the anonymous reviewers of our manuscript and the assistance provided by the editors of *RFL*.

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Appendix A

Story text: Lost and Found

Part 1

Bob Miller is happy at his new school. The students are friendly. "Hi, Bob!" they say. But some students say, "Hi, Eddy!" Bob doesn't understand. He inquires *(difficult word instead of asks)* of another student, "Why do some students call me Eddy?"

"Oh, that's easy to explain," the student says. "Eddy Garland was a student here last year. Now he goes to a different school. You look like Eddy. Some stadents *(misspelled word instead of students)* think you're Eddy."

One day Bob meets Eddy Garland. The student is right. Bob looks like Eddy. Bob and Eddy have the same color feet *(incongruity instead of eyes)* and the same smile. They have the same dark, curly hair. They also have the same birthday and are both adopted.

Part II

Bob and Eddy realize that they are twin brothers. When the boys were born, the Miller family adopted Bob, and the Garland family adopted Eddy. No one told the boys that they had a brother.

Later Bob and Eddy find out that they have another sibling *(difficult word instead of brother)*. His name is David Kellman. Bob and Eddy meet David. She *(incongruity instead of He)* looks like Bob and Eddy. He has the same color eyes and the same smile. He has the same dark, curly haid *(misspelled word instead of hair)*. Also, he has the same birthday and is adopted too.

Why does David look like Bob and Eddy? Why does he have the same birthday? You can probably guess. Bob, Eddy, and David are triplets.

- Adapted from Heyer's (1987) *True Stories in the News.*
- Notes in parentheses and italics, which did not appear in the students' sheets, indicate the three types of changes introduced: difficult synonym, misspelled word, and incongruity.

Appendix B

Raters' rubric for assessing written retellings

RATING	DESCRIPTION	SCORE
Excellent	Well-developed retelling with accurate recall of essential information	4
Good	Fairly developed retelling with satisfactory recall of information	3
Average	Loose development of retelling with some inaccuracies in recall of information	2
Poor	Incomplete, disjointed or vague development of retelling, missing essential content with serious inaccuracies in recall of information	1
No attempt	Failure to retell information	0

Appendix C

Comprehension-enabling talk

Problem-solving of lower-level reading skills

FOCUS	STRATEGIES
Phonological processing: to recognize a word through focus on pronunciation	• repairing incorrect utterance of partner • dividing a word in manageable sounds (segmenting) • offering assistance to complete task
Orthographic processing: to decode a word by matching letters with sounds	• requesting assistance to complete task • repairing incorrect utterance (self and other) • using sequence of letters to recognize words • using spelling to correct oral errors
Word recognition: to identify a word that is missed in task because of difficulty in pronunciation and/or meaning	• explicitly asking for assistance to complete task • implicitly asking for repetition with rising intonation
Lexical access: to obtain meaning of words	• asking for meaning in L1
Syntactic processing: to arrange words, phrases, and sentences in order to structure the text into a meaningful whole	• modifying input for manageable repetition by chunking • implicitly or explicitly requesting repetition • questioning incongruent pronoun reference • helping partner continue oral discourse in summary by prompting

Appendix D

Comprehension-building processes in collaborative talk

Meaning-construction through higher-level reading skills

FOCUS	STRATEGIES
Inferencing: to derive a conclusion by connecting old and new information	• supplying missing information using context • connecting relevant parts of text • checking conclusions with partner
Elaboration: to add information, to hypothesize, to predict	• relating text to world experiences • relating text to personal experiences by expressing opinions and attitudes • helping draw meaning from text • guiding partner in interpretation of text
Metacognitive awareness: to reflect on reading goals and to resolve inconsistencies	• regulating reading task by setting a purpose • noticing and solving incongruities

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