Practical L2 Reading

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PREFACE

This is a book about second language (L2) reading from my perspective and experience. Admittedly, I do not have a team of high-functioning graduate students to collaborate with on research studies, nor is there funding at my undergraduate institution, as great as it is, to take a year off from teaching to write a book on L2 reading. As other researchers have done, I would like to apologize personally to everyone whose great research studies I have failed to notice. In this book, there will likely be missing studies that will be pertinent to L2 reading, theories that are not discussed and theoretical ideas unexplored. The reader should consult books by William Grabe, Elizabeth Bernhardt, or Barbara Birch, among others, if they are looking for impressive L2 reading books that are more theoretical, encyclopedic or more purely linguistic in nature. However, this book does fill a large gap in the research literature because it treats aspects of L2 reading research that have not been greatly summarized or analyzed in book form. Topics such as glossing in reading comprehension, reading strategies, glossing and vocabulary learning while reading, and concrete ideas about reading assessment are key areas in second language reading, are now pertinent, and may even be more so in the future. This book simply provides context, discussion, synthesis and conclusions for these topics.

CHAPTER ONE

CONTEXT FOR L2 READING

Introduction

The aim of this book is to review and discuss major practical issues in L2 reading research that have not been extensively treated in the literature. We aim to determine what is used and whether it works for practitioners. Additionally, this book thoroughly explores glossing, which is an important aspect of L2 reading that is on the one hand severely neglected in L2 reading research books and, on the other, used extensively in college-level L2 learning programs (e.g., Champeny, 2024; Terrell, Rogers, Kerr & Spielmann, 2019). This book is designed to help researchers and practitioners better understand L2 reading with the overall goal of facilitating L2 learning in general.

Why is L2 reading important? In part because it is usually integral to L2 learning. Reading facilitates other skills and is foundational to L2 learning. In and of itself, L2 learning has the potential to help humanity lift itself from poverty. This is done through improved chances at finding better jobs, cultivating more productive relationships with other cultures, and, perhaps, more fruitful connections among nations. Because reading is generally integral to L2 learning, reading assists in building a more just society and world. Grabe (2009) claimed that, for millions of people, the skills of L2 reading help them increase their potential for financial success; indeed, it is essentially an academic responsibility that we should give others the opportunity to become skilled L2 readers. He further observed that reading ability "provides no guarantee that a student will have ultimate academic success or will be a productive citizen in the future, but not being able to read well will almost guarantee a dismal future for that student" (pp. 388-389). Similarly, Bernhardt and Kamil (2022) cited Beare's (2019) claim that there are approximately 2 billion ESL users, for whom L2 reading is quite often a first step in L2 learning. It shows that L2 learning plays or has played an enormous role in educational equality. L2 reading is, therefore, fundamental to the lives of countless individuals due to its positive effects on their livelihoods. This is why L2 reading is also likely an essential skill

in social and educational justice. This can be supported by the fact that Duolingo has become a widely used application used on phones worldwide. The app has the goal of "*democratizing education*" (Von Ahn, 2022), and its popularity can be supported by the fact that it has more than 500 million registered users. Von Ahn, the founder of Duolingo, claimed that in his home country of Guatemala, knowing English as an L2 was essential for financial success. He stated, "*…in Guatemala, for example, you can probably double your income potential just by the fact that you know English; you do not have to know anything else.*" (Von Ahn, 2022). Interestingly, much of Duolingo's format involves L2 reading, whether to introduce new vocabulary or grammatical items or even for pronunciation practice. L2 reading, of course, is very closely linked to L2 writing in the Duolingo app as well. In Duolingo, a learner will be asked to freely translate a very similar sentence with the vocabulary or grammatical principle that was introduced earlier via an L2 text, which occurs after putting together phrases in their '*organize the blocks*' phase of learning.

We often depend on education to improve our lives, and L2 reading likely plays a significant role in our education. In a way, L2 reading is the foundation of L2 learning because students must first read before they can pronounce, write, and quite often speak. L2 readers who can read effectively are often competent in speaking, writing, or listening and often in all three skills. Moreover, L2 reading is essential because it can provide large amounts of comprehensible input, which is considered essential in L2 reading (Taylor, 2019) and especially in extensive L2 reading (Krashen, 1989). L2 reading also allows the L2 reader to interact with L2 texts in an unfiltered manner, which can lead to less misunderstanding in our world (Bernhardt, 2011).

Reading is one of the fundamental core skills (reading, listening, speaking and writing) in L2 learning. Reading is important because it is an activity that can be done alone (Hudson, 2007) and obviously because of the input it provides (Krashen, 1989). As important as L2 reading may seem, Bernhardt and Kamil (2022) suggested that L2 reading has not been fully recognized in second language acquisition theory as an important field and has been, to a degree, neglected in major L2 learning books that discuss major theories and findings in the field. Indeed, if we look at the index of the excellent book *Understanding Second Language Acquisition* by Rod Ellis (2015), a preeminent researcher in the L2 learning field, only three pages out of three hundred mention L2 reading: there is one page on extensive reading and text enhancement and two brief comments on extensive reading (pp. 153, 272 and 303). In Ellis's earlier book *The Study of Second Language Acquisition* (1994), formerly the most complete book

on L2 learning ever written, the subject of reading is not indexed once. Of course, not everything can be mentioned in every book. However, the neglect makes little sense: reading more effectively can help L2 learners become better language learners in junior high, high school, college, or later adult life because of how much L2 input one can receive while reading. Furthermore, extensive reading can lead to L2 acquisition (Ellis, 2015; Krashen, 1989). It should also be mentioned that L2 reading opens new doors to the research world just as it does to financial stability. In graduate school, L2 reading can be helpful in reading the research of colleagues in different countries. The author has observed, for instance, graduate students who have learned French to read the works of an obscure French mathematician. Even though the graduate students could not speak French at all, they could read it, which greatly enhanced their research experience. Improving L2 reading is thus key to success for all kinds of learners in many fields, both at the university and for self-taught learners.

L2 reading: Skills versus vocabulary

How do we improve L2 reading? To start to understand how to improve L2 reading, we must take a step back to look at the overall picture of competency in L2 reading. In general, to improve L2 reading, two significant areas of study must be identified. First, a learner needs to know a certain amount of vocabulary words, grammatical concepts, and background knowledge to begin reading. Second, L2 readers need to have reading skills, meaning they can do tasks such as skimming or scanning a text, guessing words from context, looking up words they do not know, or monitoring their reading to see if they need to go back to certain parts of a text to review.

Bernhardt and Kamil (1995) found that native language (L1) literacy accounts for 20% of the variance in L2 reading, whereas L2 knowledge accounts for about 30%. What about the other 50%? Very likely, the other 50% relates to background knowledge and L1 literacy tangentially and can be represented by variables found in experimental research. Interestingly, meta-analytic research (Taylor, 2014), shows that reading skills (such as strategy training studies) *and* language supports (L1 glossing studies) both improve L2 reading comprehension. However, understanding the interaction of knowledge and skill brought to an L2 reading task is essential when considering bottom-up and top-down ways of looking at L2 reading. Laufer (1996) wrote, “reading strategies are no doubt useful and should be taught. The question is, however, the following: how realistic is it to expect a

foreign learner to apply them successfully to a text where every fifth or sixth word is unknown? (p. 59).

Some researchers (e.g., Laufer, 1996) believe that, to comprehend most L2 texts, the reader should know at least 95% of the lexical items or words in the text for adequate comprehension (e.g., Laufer, 1996). Some researchers also claim that a knowledge of 95% of vocabulary is necessary for minimum comprehension and 98% for optimal comprehension (Laufer & Ravenhorst-Kalovski, 2010). Of course, no amount of reading skills will be adequate without sufficient knowledge of words to read a text. Merely guessing from context, using background knowledge, or any set of top-down skills will not compensate for linguistic knowledge (Laufer, 1996). Reading comprehension will break down if there are not enough words—perhaps 5,000 at least—understood before reading a typical L2 text (Laufer, 1996; Laufer & Ravenhorst-Kalovski, 2010), with 8,000 words being even more optimal (Laufer & Ravenhorst-Kalovski, 2010). Webb and Nation (2017) suggest that L2 readers should know 3,000 word-families to understand 95% of texts and knowing 8,000–9,000 word-families is essential to read like a native. In other words, the more words you know, the better you will read and the more reading skills you can implement. To be sure, L2 reading is more nuanced and has more components than simply learning lots of vocabulary (Bernhardt & Kamil, 2022; Grabe, 2009). Many variables affect how much L2 text is comprehended.

Variables associated with successful L2 reading

Different stimuli influence behavior in any situation in nature. Similarly, humans continually experience different variables altering their choices. For example, an individual leaving home will look out the window to see it raining. Because of the rain, the individual will pick up an umbrella. If it is raining outside, the individual will open an umbrella. If the rain is severe, there may be flooding, and the individual may decide not to drive on the roads. Variables like these happen in the reading experience: different situations or stimuli can vary, and these variables influence outcomes, which, in this case, is how well a person reads. Variables are almost innumerable; indeed, it is quite difficult to be aware of everything that may be affecting our behavior or performance on a given task.

Looking at L2 reading comprehension from an experimental lens reveals explanatory variables that give a greater perspective on L2 reading. In order to better understand how to improve L2 reading, it can be helpful to be familiar with what either impedes or improves L2 reading. In this section, we will examine variables such as learner level, text level, the L1-L2

relationship (the direction of L2 learning), the amount of text read, age, glossing, test tasks, and strategies. These variables interact and influence each other and often directly influence how well an L2 text is read. As we discuss the following variables, readers will notice that they apply to many L2 reading (and learning) contexts and should be kept in mind not only while reading this book but also while conducting any L2 reading studies or providing L2 reading experiences or tests for learners at all levels.

Context of study: CALL, MALL vs paper

The context of the study can be essential toward effective L2 reading. For example, if a learner is provided with L1 glossing with a computer, will they comprehend more or less L2 text than a learner with a paper-based text with L1 glossing? Or do certain types of glossing assist more in facilitating reading comprehension? Some studies have shown that glossing with a computer is much more effective than paper-based glossing. Meta-analytic results show that glossing in a computer-assisted language learning (CALL) context is *usually* the most effective means for L2 reading (e.g., Taylor, 2006), but not always (e.g., Coriano Velázquez, 2001). To be sure, there are studies that show that paper-based glossing can be effective (e.g., Davis, 1989; Jacobs, 1994; Luo, 1993) as well but not always (e.g., Joyce, 1997; Lomicka, 1998). Mobile assisted language learning (MALL) glosses or smartphones using augmented reality to help with vocabulary while reading, may have similar results.

Type of L2 reading instruction

How learners are taught to read can have a profound impact not only on their L2 reading ability, but on their overall L2 learning competency as well (Grabe, 2009). L2 readers who read well can process more text, gain more input, speak more accurately and fluently, and write more clearly can be taught with a phonics-based approach, a whole language approach, or a combination of both (Birch & Fulop, 2021). Instruction can be related to strategy training as well, since reading is fairly interactive in nature. Koda (2005) describes how L2 readers should be taught direct decoding skill training, just as L1 readers are, which is “equally, if not more important for L2 learners.” She goes on to claim that “decoding efficiency, in fact, is one of the primary characteristics distinguishing strong and weak L2 learners” (p. 256). The problem, according to Koda (2005), is that decoding efficiency in L2 does not occur at the same rate and that different training methods are likely to be effective for depending on the L2 learners. Murphy Odo (2021),

in a meta-analytic study, found that phonics instruction and phonological awareness instruction had a moderate effect (g = .53) on L2 word reading. He concluded that educators of L2 learners of English should include phonics instruction. Learning how to pronounce sounds seems to correlate highly with the ability to read and understand words. Correlatively, L1 reading instruction is facilitated by direct instruction (phonics-based), as is shown by a meta-analysis of a half-century of research (Stockard, Wood, Coughlin, & Khoury, 2018) and is generally supported by eminent L2 reading researchers as well (e.g., Grabe, 2009).

Learner level

Learner level can be a significant variable in L2 learning; any L2 activity should be conducted with the L2 learner level in mind. Thus, it is also pertinent to L2 reading because it impacts the interaction between the learner and the text. For example, if an L2 reader is highly competent with an extensive vocabulary in the L2, then they can read most L2 texts (Laufer, 1996). If they do not have sufficient vocabulary knowledge, reading the text is more complicated. Interventions such as glossing can be rendered ineffective if the learner level is high enough that glossing is unnecessary and may impede L2 reading fluency.

If the linguistic threshold of the participants is too low for a given text, they will rely heavily on L1 glossing (e.g., Jacobs, 1994; Taylor, 2001) if it is available. For example, if the text is too easy, glossing may risk being more of a distraction. It may even cause a learner to perform more poorly than those without glosses (e.g., Joyce, 1997), which occurs frequently in the L2 literature (Taylor, 2010).

Perhaps the most critical factor in L2 reading is keeping the attention of the L2 reader, and if an L2 text is too difficult to read, the L2 learner's attention will wane. They will simply no longer wish to read, and moreover, it may even decrease their motivation to continue L2 learning. Motivation is a crucial variable in L2 reading and in L2 learning generally (Taylor, 2002); if a learner is not motivated, no amount of strategies or aids will overcome their lack of motivation.

Text level

Along with learner level, text level is another crucial variable in L2 reading. Why would an L2 reader read a passage that is too far beyond their level? The reading can be too halting. Conversely, if an L2 text is too easy, lexical and grammatical content may be less palatable. Thus, it becomes a

question of choosing the right texts so that the L2 learner is able to read them and gradually acquire new vocabulary and grammar. The idea of a 'fit' between learner and text is perhaps one of the foremost salient variables that should be examined in the L2 reading literature, which is essential in both research and pedagogical contexts (Taylor, 2010). Essentially, if a text is not complex enough, there is no need for any intervention. Glossing plays a vital role here. It is the process whereby words are translated in the margin or that pop up on electronic devices while reading. Studies show that there is no need for any glossing if a text is already accessible to read (e.g., Joyce, 1997; Jung, 2016; Taylor, 2010). Moreover, glossing can be distracting and detrimental to L2 reading (e.g., Taylor, 2002) if the text is easy enough to read without it. However, an intervention such as glossing or reading strategy training is often needed if the level of text is slightly above the L2 reading level.

L1-L2 relationship

The L1-L2 relationship refers to the combination of the L1 and L2 involved in the study. The direction of L2 learning plays a role because it determines the importance of the relationship between the L1 and the L2. It subsequently offers further insight into motivational, social, and economic factors involved in the L2 reading literature (Taylor, 2002). For example, English-speaking learners of French may have different reasons for learning to read French than English-speakers learning Spanish. Some individuals may be motivated to learn Spanish to increase their job prospects. Conversely, others motivated to learn French, for example, may be doing so because they would like to work in the Foreign Service. French would be a formidable L2 for increasing one's qualifications. Similarly, a German student may want to learn English to study in graduate school in the United States, or vice versa. Reasons such as these may influence L2 reading effectiveness and motivation.

The linguistic proximity between the L1 and L2 can explain why a Portuguese reader of Spanish may be able to read significantly faster and more fluently than an English learner of Chinese, for example (Grabe, 2009). Further, some languages are more opaque than others. English, for example, has considerable variability between phonological and orthographic aspects of the language. For example, Grabe (2009) demonstrates that the letter sequence '*ch'* in English usually represents the sound in the word *ch*ili, but it can also be pronounced differently in words such as *yacht*, *chord*, and *chef*. This means that for English, it is quite difficult to simply look at a word and immediately know for certain how it should be pronounced when reading

aloud. Thus, learning to read a more phonetic language such as Haitian Creole could be easier for native English speakers.

Amount of text read

It is essential to know the number of words in the text because the length of the text will impact the participant's fatigue. Longer texts may have a different effect on reading comprehension than shorter texts. Conversely, longer texts may also provide more opportunity for a treatment to impact L2 reading comprehension. If glossing were provided, for example, it would be easier for a student to use the glosses if there were more glossed text. On the other hand, if there is too much glossing, it can become a crutch on which the learner leans too heavily since the L1 should often be avoided.

Age of learners

The age of the learner relates to L2 reading because older readers may approach L2 texts differently or with less top-down or bottom-up knowledge. Whether old or young, learners may also have a more challenging time concentrating on a text. Even the selection of a text or the types of interventions, such as glossing or reading strategy training, can be determined by the age of a learner.

Participant age may play a role in L2 reading because it relates to linguistic issues, such as the amount of vocabulary in the L1 that may be similar to the L2 (older people tend to have larger vocabularies), background knowledge, and choice of text. Of course, many other variables are involved, such as motivation and the cognitive development of the learners. These, in turn, all interact with this variable.

Interventional variables: Glossing

Glossing, which involves providing translations in the margin or in a pop-up window of an L2 text, occurs often in beginning and intermediate-level L2 textbooks (Joyce, 1997; Lomicka, 1998) and has been used for hundreds of years (Bell & LeBlanc, 2000; Davis, 1989; Jacobs, 1994; Roby, 1999). Different types of glosses include textual glosses in the L1 or L2, as well as multiple choice, dictionary lookup, pictorial, cultural, grammar, or video glosses. They can be essential to study, in part, because learners provided with glosses while reading L2 texts can process the text faster and more accurately than those without glosses. It may not be possible to achieve this without glosses. More vocabulary can also be learned with

glosses (Grace, 1998; Grace & Taylor, 2001). Thus, more complex reading passages can be read, which in turn may increase learner L2 motivation. The use of glosses in the L1 is also salient (Kim, Lee, & Lee, 2024) because of the debates about (a) how much they should be included in the L2 classroom and (b) whether the findings of glossing studies are as conflicting as they appear. Furthermore, it is possible that glossing with pictures can improve L2 reading comprehension even more than with L1 glosses alone (Taylor, 2021).

Types of glossing

The type of glossing is a highly influential variable in L2 reading comprehension. Some types of glossing work better than others. For example, research has found that computer-assisted language learning (CALL) glossing is more effective than paper-based glossing (Taylor, 2002, 2009, 2013), although both have been shown to be effective (Taylor, 2002). Other research has found that the placement of glossing can make a difference in L2 reading comprehension (Chen & Yen, 2013). For example, CALL glossing can appear in the text margin or as a pop-up when the cursor goes over it or when it is clicked. Some researchers have suggested that pop-up glosses may be the most effective (Chen & Yen, 2013). Other types of glossing can be pictures, cultural explanations, grammar explanations, and L2 glossing. Pictures may be necessary for L2 learning because images are sometimes processed (sometimes more easily) along with words according to dual coding theory (Taylor, 2019). For overall L2 learning, L1 glosses are generally found to be more effective for beginning L2 learners than for intermediate to advanced learners (Kim, Lee & Lee, 2024).

Percent of text glossed

The ratio of the total number of words to the total number of glosses in a text is relevant because too much glossing can overwhelm the L2 reader's attentional resources and may become a distraction. Too little glossing may not be sufficient for optimal comprehension. Knowing the percentage of the words glossed in a text provides more insight into the link between the independent and dependent variables. It also clarifies Jacobs' (1994) suggestion that many studies on glossing do not include enough glosses for effective reading and that the more glossing that is provided, the more L2 text will be understood. Thus, the percentage of glossed text may be one of the more critical factors in determining the effectiveness of interventions in L2 reading comprehension. The advent of mobile devices has rendered

glossing more accessible and effective with augmented reality apps on smartphones (Taylor, 2019).

Time limits on reading task

The amount of time for a reading task could be an essential variable because a time limit might affect how the learner performs on a reading test. Essentially, this is what differentiates a speed test from a power test. Speed tasks, categorized as those with a time limit, have been shown to produce significant results on intelligence test instruments (Davis & Spring, 1990).

Power tests, those with no time limit, have been shown to be problematic, especially in the L1 reading field (e.g., Carver, 1985). Of course, the advantage of the power test is that the participant is not pressured to perform. Its advantage may be that it may increase the use of different reading strategies by the L2 learner because more time is allotted to the reading task. Understanding the difference between speed and power tasks can provide insight for researchers and practitioners alike. The amount of time allocated to read a text can be more judiciously planned. Speed tests, by nature, can tax the learner more than power tests (Alderson, 2000; Grabe, 2009).

Consequently, when comparing the performance scores of the two types of tests, speed tests will result in lower performance, which in turn can lead to lower scores. Therefore, researchers of glossing and L2 reading comprehension who need to make decisions about imposing a time limit on the reading-task phase of the experiment should be aware of this variable.

Receptive and productive test tasks

The type of test --whether receptive or productive-- that an L2 reader takes after reading a text is a significant variable. Research suggests that productive test tasks—those in which the L2 reader produces the language -such as the recall protocol, may provide a less biased measure (Bernhardt, 1983). Multiple-choice tasks can be biased in how they are written and may contain information that enables the L2 reader to provide the correct answer without reading the passage, as Bernhardt (1983) has shown.

L1 productive recall tasks may be a less corruptible test of reading comprehension than other tasks such as multiple-choice tests which may occur more often in traditional L2 learning contexts (Bernhardt, 1983). Other concerns with receptive tasks exist as well (Cohen, 1994). Some researchers, however, take a more nuanced view of receptive tasks, finding that multiple tasks can provide the best measurement of L2 reading comprehension (e.g., Chun, 2011; Taylor, 2021). Further, other productive tests such as cloze

testing can influence the results of how much reading comprehension is measured (e.g., Brown, 1984). A receptive task is one in which the language is not produced to test reading. True-false questions and multiple-choice questions are examples of receptive tasks. Receptive tasks have several benefits. For example, they can be scored more efficiently and reliably than productive tasks. Meta-analytic results have demonstrated that both productive and receptive test tasks can accurately measure reading comprehension (Taylor, 2021).

A study by Wolf (1993) suggests that receptive tasks may show less of a distinction between how much text is comprehended. She compared scores among groups of participants assigned to reading tasks of receptive multiple-choice tasks, productive open-ended tasks and cloze tasks. She found that scores were significantly higher on receptive test tasks than on productive tasks. This implies that the structure of the test instrument may play a role in the measurement of the effect of interventions such as glossing or strategy training on L2 reading comprehension. Receptive tasks should provide enough items to reliably test the reading comprehension of a passage (Liao, 2023).

Selection of text

In general, primary researchers reported a rationale behind choosing their texts. Adjectives such as ‘interesting’ and ‘familiar’ were used for this purpose. These may be important since they might provide insight into the type of text treatment used. Texts not considered familiar in content to participants by the primary researcher could provide an added handicap for the L2 learner. Also, understanding whether a text is exciting or familiar can provide insight into what type of background knowledge might be necessary in L2 reading studies. Texts thought to be interesting to the participants, assuming they really are, may also be more motivating to read than texts that are familiar to the participants. A text also might be a theater text, which may necessitate a different approach to reading. For example, one might focus a bit more on the narration of the theater piece or on the description of costumes or demeanor of the actors involved to improve comprehension (Edwards & Taylor, 2012)

Authenticity of text

The authenticity of the text refers to texts native speakers are likely to encounter in real-life situations. Authentic texts are considered to be essential to L2 learning (Omaggio, 1993). They are part of the target culture

and language environment in which the learner is to perform. However, care must be taken in choosing authentic texts; well-chosen authentic materials can increase reader motivation (cf. Maxim, 1999) because the reader can already see progress (i.e., native-like performance) in their study of the L2.

Reading strategy training

Reading strategy training involves a teacher or researcher providing instruction in reading strategies to the L2 learner in order to help them read more effectively. Such strategies can be cognitive, metacognitive, or social. Cognitive strategies involve individuals interacting directly with the text, such as looking for the main idea or skimming the text before reading it.

Metacognitive strategies are those in which the reader plans their reading or thinks about whether they are understanding the text. Social strategies are those in which an L2 reader may perhaps join a book club, for example, where the text can be discussed and where the L2 readers can help each other better understand L2 texts. Reading strategy training can actually be useful and effective toward L2 reading comprehension, as meta-analytic research has shown (Maeng, 2014; Taylor, Stevens & Asher, 2006; Yap et al., 2021).

Number of words in text

It is essential to know the number of words in the text because the length of the text will impact the participant's fatigue. Longer texts may have a different effect on reading comprehension than shorter texts. Conversely, longer texts may also provide more room for a treatment to have an impact on L2 reading comprehension. This is a moderating variable that helps to understand the impact of the percentage of the text glossed; it is essential to know the size of the text in relation to the number of glosses.

Conclusion

These variables provide a glimpse into the complexity of L2 reading. Of course, there are variables in L2 reading that are both known and unknown (Bernhardt, 2011). Thus, there are likely other variables beyond those we have identified. Developing awareness of them can significantly expand understanding of why L2 reading is successful or not; it shows why interventions such as glossing or strategy training are or are not successful. Awareness of these variables can assist L2 teachers in choosing appropriate L2 reading activities and tests in the classroom.

Interestingly, some variables are likely more influential than others and may influence each other, as they, in turn, affect L2 reading comprehension itself. For example, choosing a text appropriate for a certain learner level can make or break the L2 reading and may influence the overall learning experience. Similarly, the age of the participant is related to learner level, attention to text, vocabulary knowledge, background knowledge, etc. Even further, if an L2 reader does not have much background knowledge of a certain kind of text, he/she can struggle to understand it even with extensive vocabulary knowledge (Lee & VanPatten, 1995). Thus, these variables are influential in L2 reading comprehension and with each other as well. It can be difficult to isolate them and determine that only one variable makes all the difference in L2 reading. Again, some variables may play a larger role in L2 reading comprehension than others, very likely, such as text or learner level (Taylor, 2002, 2010), but others can play critical roles in the L2 reading process as well. In terms of interventions, glossing, dictionary use, and strategy training are perhaps used the most to positively influence L2 reading comprehension and vocabulary learning. The type of test used in L2 reading may influence reading as well but is more of a measuring device rather than an intervention.

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CHAPTER TWO

GLOSSING FOR READING COMPREHENSION

As an area of study, reading is not studied as much as it probably should be in the L2 field as has been suggested in the previous chapter. However, are there fields within L2 reading that are neglected? Glossing is an area of study in L2 reading that may not be treated sufficiently. In fact, one of the most extensive books on L2 reading by William Grabe (2009) and in his subsequent book with Junko Yamashita (2002), a quick perusal of the index of both books reveals that glossing is not indexed, even though there are many primary and meta-analytic glossing studies (e. g., Taylor, 2002, 2006, 2009, 2013, 2021). Further, in Bernhardt's (1991) book *Reading Development in Second Language*, which is perhaps the most traditionally influential book in the L2 reading field, glossing is not indexed. In her later book *Understanding Advanced Second Language Reading,* Bernhardt (2011) does index glossing four times but is mentioned as a brief, side characteristic of CALL studies and there is no in-depth discussion of theory behind glossing. Hedgcock and Ferris (2018) have a half page, out of over 359 pages, on glossing and have probably the most in depth analysis of it of the major authors, claiming that glosses are important because readers have positive attitudes about them, authentic materials can be used more with them, they take away incorrect guessing about words or textual meaning, and they promote lexical learning. Of course, the lack of discussion and analysis of glossing does not mean these books are not an excellent reference for L2 reading research; in fact, they are likely the best and most complete books in the field. Further, L2 reading is a large area of study; it is therefore impossible to include every subcategory L2 reading research. In this chapter, we would simply like to add to the L2 reading field along with these books with insight into glossing because of how much it has been studied in the past 50 years, along with how much it has been used in L2 learner books for centuries (Taylor, 2002). Indeed, L1 and L2 glossing are currently being used in much used beginner and intermediate textbooks (e.g., Champeny, 2024; Mitchell, J. G., Mitschke, C., & Tano, C., 2021; Thompson & Phillips, 2009). Yet we still are unsure of how and in what circumstances they are beneficial. This chapter will discuss how glossing fits into certain

processing models and how the research stacks up in favor of and against its use.

Psychological issues in L2 reading

In models of second language (L2) processing, the transformation of input into intake leads to its integration into the learner's evolving implicit knowledge system, as attention is focused on specific linguistic elements (Ellis, 1997; Lee & VanPatten, 1995; Schmidt, 1990; Taylor, 2002, 2013). Glossing facilitates the integration of a greater volume of L2 input into the developing system of the L2 learner. Educators have underlined the significant role of both L1 and L2 glossing in enhancing reading comprehension. Stewart and Cross (1991) noted that glosses assist readers in tracking their understanding: "After engaging with the text and reviewing the gloss, readers can reflect, 'I understand this because I can answer this question' or 'I recognize the connection highlighted by the gloss'" (p. 5).

L1 reading differs from L2 reading in that L1 learners generally possess a more extensive linguistic background. For L2 learners, glossing tends to function primarily as a confirmatory tool rather than a direct instructional mechanism. A key question arises regarding the extent to which L1 proficiency can offset deficiencies in L2 knowledge. Bernhardt and Kamil (1995) addressed this issue, suggesting that linguistic knowledge (or linguistic threshold) plays a more significant role in L2 reading comprehension than L1 reading skill competence (linguistic interdependence). Furthermore, they indicated that general background knowledge may not be as crucial for L2 reading comprehension as linguistic knowledge itself. The interplay between linguistic knowledge and background knowledge remains a pertinent area of discussion among researchers (Eskey, 1988).

Top-down and bottom-up approaches

Carrell (1984) posited that the activation of background knowledge among second language (L2) learners significantly influences reading comprehension. She elaborated that in the reading process, "a text only provides directions for listeners or readers as to how they should retrieve or construct meaning from their own, previously acquired knowledge" (p. 332). Consequently, Carrell asserted, "efficient comprehension requires the ability to relate the textual material to one's own knowledge" (p. 333).

Background knowledge serves as a contextual framework that supports the processing of L2 texts (Taylor, 2019). The background knowledge of participants in a specific study, especially with regard to the chosen text

type, can act as a crucial moderating variable, as demonstrated by the varying outcomes in textually distinct yet otherwise comparable experiments (e.g., Davis, 1989; Lomicka, 1998). Furthermore, certain texts may exhibit cultural biases that could disadvantage L2 learners. Schema theory is a significant consideration in understanding bottom-up approaches to L2 reading that incorporate marginal glossing (Jacobs, 1994). This theory suggests that comprehension is made up of two components: a linguistic aspect that facilitates the decoding of the text's language and a conceptual aspect that connects textual ideas to pre-existing cognitive frameworks (i.e., schemas) (McNeil, 2011). L2 readers require both conceptual understanding and linguistic competence to facilitate text comprehension. Consequently, schema theorists contend that a synthesis occurs during reading, whereby L2 readers integrate new information with existing knowledge. In metaphorical terms, a schema theorist might assert that information finds accommodation within the mental framework of the L2 reader (McNeil, 2011). Hedgcock and Ferris (2018) wrote: "Bottom-up, top-down, and interactive reading processes are complementary, but basic bottom-up skills are prerequisites to developing efficient top-down and interactive skills" (p. 54). Glosses can provide the linguistic basis for more fluent reading thus making top-down skills such as activating background knowledge more usable.

It can be argued that both bottom-up and top-down processing models of reading are vital and interact at various levels to facilitate text comprehension (Taylor, 2002, 2021). In both first language (L1) and monolingual contexts, glossing can serve as a mechanism for connecting the linguistic elements of a text with the reader's background knowledge through a triadic system. Stewart and Cross (1991) emphasized an interrelation between the text's author, the reader and the voice of the gloss which may represent the teacher. This description suggests that the reader, the glossed item, and the text function as an interacting group, with their components generating meaning. To be sure, the foundational element necessary for fostering the interrelationship among these three "voices" is the bottom-up factor. A certain degree of understanding of the text is necessary before further conceptual processing can occur. Research in L2 reading generally indicates the comparative significance of L2 knowledge in relation to L1 reading skills (Bernhardt & Kamil, 1995). Explicit instruction can enhance L2 knowledge, thereby improving the readability of L2 texts for learners.

Explicit learning and glossing

As Taylor (2014) suggested, in studies related to glossing, there have been limited comparisons between glossing and different types of implicit (unconscious or incidental) and explicit (conscious or intentional) teaching methods. It is imperative to recognize that glossing is often seen as a personal, individualized skill, which contrasts with the teaching frameworks typically associated with explicit and implicit learning methods (Taylor, 2014). However, grammar instruction is frequently influenced by lexical elements (Doughty & Williams, 1998b). Since glossing can be classified as a form of explicit learning, it is useful to reference L2 research on explicit instruction. This allows for a comparison between explicit learning studies and those on glossing.

One should note that the focus-on-form approach has predominantly revolved around grammar teaching, as opposed to the memorization of vocabulary, which is related to glossing (Taylor, 2002). The concept of focus-on-form is broad and has been defined in various ways. Some approaches, however, have applied focus-on-form primarily to grammatical instruction, although it can have broader pedagogical uses. The central question becomes: "Why focus solely on grammatical form?" There are numerous methods for explicit L2 instruction, which can address multiple levels of language processing, such as phonetic, lexical, syntactic, and discourse levels. Glossing, which can be done with different amounts or types of glossing (Abuseileek, 2011; Taylor, 2019) can include pictures, audio, and grammar points. In fact, certain combinations of glossing such as textual and pictorial, have been shown to improve comprehension (Yanguas, 2009; Taylor, 2021).

In advocating for a "direct approach" to L2 teaching, Celce-Murcia, Dörnyei, and Thurrell (1997) observed that while focus-on-form has traditionally emphasized grammatical rules within the linguistic code of the L2, a direct approach should also consider higher-level organizational rules and patterns, including discourse rules, pragmatic understanding, and strategic competence, along with common lexical phrases. Doughty and Williams (1998b) also pointed out that while this is a common misinterpretation of focus-on-form, lexical issues are part of the concept, as focusing on form can support vocabulary acquisition (p. 212). Hulstijn (1995) echoed this idea, suggesting that vocabulary learning, rather than just a grammatical focus, is an effective approach in L2 education. Laufer (2006) found that while both approaches—intentional vocabulary learning and focus on form through reading—are beneficial, explicit vocabulary learning

proved to be more effective, though she suggested that both have value in L2 reading.

In glossing, the selected vocabulary items are usually chosen by the text creator or researcher because they are anticipated to be challenging for learners. The term "proactive" refers to this forward-thinking approach, where assistance is provided in advance to help learners with difficult items (Doughty & Williams, 1998a). In contrast, Krashen (1989) argues that extensive reading is the most effective way for learners to acquire new vocabulary and actually is a primary method to learn an L2. While this can be generally true, research has shown that glossing can improve both L2 text comprehension (Jacobs, 1994) and vocabulary acquisition (Grace, 1998, 2000) in classroom environments. Glossing could be viewed as a blend of both focus on forms and focus on form, but it leans more towards focus on form because learners often overlook the glossed items, prioritizing overall meaning over the actual vocabulary (Taylor, 2002).

Intentional vocabulary learning tends to be more effective than incidental learning, although both play a significant role (Laufer, 2006). In some cases, incidental instruction that focuses on form, outside the context of reading, can be particularly beneficial for long-term retention (Shintani, 2013). Glossing's explicit nature relates to how prominently vocabulary items are presented. Whether or not glossing happens automatically is difficult to determine, as different learners have different goals. Some learners might be focused on understanding the general message, while others may be more concerned with the specialized vocabulary. As such, the role of attention is crucial in L2 reading.

Formulaic expressions, for instance, can be learned explicitly. Ellis (1997) noted that "lexical items and formulaic expressions can be learned explicitly, such as by memorizing items from a phrasebook" (p. 118). He also explained that explicit learning can be either direct or indirect. Direct explicit teaching involves providing learners with a grammatical rule to apply, whereas indirect explicit teaching involves learners analyzing data to identify patterns in grammatical structures (Ellis, 1997, p. 85-86). Although this distinction refers to grammar teaching, glossing can be seen as a form of indirect explicit learning. Glossing, which explicitly addresses vocabulary, can promote implicit learning by helping learners read more efficiently and contextualize words. It is often considered a type of explicit learning, though the level of explicitness can vary depending on how much attention learners devote to the glossed items (Taylor, 2002).

While learning rules may generally be more effective than learning individual items (Hulstijn & De Graaff, 1994), L2 reading requires specific strategies. For example, memorizing vocabulary or engaging in metalinguistic

discussion can be considered explicit item learning. In the sections below, various aspects of glossing will be examined in relation to current research on explicit and implicit learning, as well as focus-on-form approaches. Many arguments supporting glossing as explicit learning stem from studies on focus-on-form (Dekeyser, 1995, 1998; Doughty & Williams, 1998a; Ellis, 1997; Swain, 1995, 1998).

Glossing and attention

A glossed item, typically placed in the margin or at the bottom of a page, can capture the attention of an L2 learner and assist them in learning either the glossed item and or in better understanding the L2 text itself (Davis, 1989; Lou, 1993). Generally, the more glossing the better, but there also may be a fit associated with how much glossing is necessary (Jacobs, 1994). Further, the number of times a glossed item appears in a text can be an important variable. For example, Rott (2007) found that glossed items appearing four times in a text for intermediate L2 learners of German were more effective than glosses appearing one time in a text. Thus, the more attention brought to bear on a glossed item, the more likely a text would be comprehended. The option to access glossed items may influence how the learner interacts with the text and employs reading strategies, whether in a digital (CALL) or traditional reading environment. A broader question arises: "What kind of attentional resources are involved in glossing?" Tomlin and Villa (1994) suggest that detecting certain items where processing occurs is perhaps the most critical attentional resource. In this context, processing is not just about being aware of items but actively noticing them. Since glossing enables learners to detect L2 items, it supports explicit learning. Thus, positioning glossing as essential to explicit learning strengthens the case for using L1 glosses alongside L2 texts. Where the gloss is put is another story, as they can be placed in the margin, at the bottom of the page, as a pop-up next to the text and immediately after the word (Abuseileek, 2011), with varying degrees of success (Abuseileek, 2011; Chen & Yen, 2013).

Glossing can be considered to be a form of explicit learning when it becomes a type of memorization task. When a learner sees a glossed item, he or she may, at will, pay attention to the item for as long as is felt necessary. Thus, the degree of explicitness can be quite variable. Perhaps it depends as well on the purpose of the exercise or task. If the learner has a time commitment, this may provide less allotment of time toward focusing on the items and thus decreasing the intrusive nature of the task. In the case of a literature student studying a poem for critical analysis, the focus on

meaning is prevalent. Thus, glossed items may impede the fluent, uninterrupted reading of the poem (e.g., Lomicka, 1998).

Learner control can be considered a benefit in favor of glossing, since the learner essentially decides how much time is allotted to a given item (e.g., Taylor, 2006, 2009, 2013). Assuming the learner is paying attention to a particular item, the mere fact that the L2 learner attempts to find an L1 definition or finalize a key meaning of an L2 item creates the conditions under which the learner can 'consciously reflect' about a particular item (for a discussion on how conscious reflection can facilitate L2 learning, see Swain, 1995, 1998).

Glossing and contextualization

From a strict perspective where contextualization is linked solely to a focus on meaning, glossing could be viewed as decontextualized explicit learning. However, glossing can also be seen as contextualized since the learner uses the surrounding text to derive meaning. Both interpretations seem valid and may depend on the learner's reasons for focusing on the glossed item(s) (Taylor, 2002).

When reading, an L2 learner may experience varying levels of comprehension difficulty. This could range from (a) a lack of understanding, (b) uncertainty about an item's meaning, or (c) a need to simply confirm its meaning. In this context, the variability in how long the learner spends on the glossed item and how well it is contextualized becomes more apparent. If the learner has seen the word before and only needs confirmation, attention may only shift briefly. On the other hand, if the learner needs to fully learn the item, this increases the degree to which the learning process becomes more explicit (Taylor, 2002).

Metalinguistic knowledge

Glossing does not fit the traditional definition of metalinguistic activity, like 'metatalk' as described by Swain (1995), where a learner uses their L1 to discuss aspects of the L2 with another person (Taylor, 2002). However, metatalk, typically seen as a speaking or writing skill, is relevant here because some form of interaction occurs between the learner and the text during L2 reading. Savignon's (1997) concept of communicative competence includes reading, as it involves this type of interaction. Swain (1998) explained that metatalk reflects the language used in problem-solving, stating: "My assumption is that metatalk is language used for cognitive purposes, surfacing during problem-solving tasks. Through metatalk, we