The Nature of Reading Ability and the Assessment of it

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Abstract

Of all the language skills, reading seems to have attracted second language acquisition researchers' and language teachers' attention the most. At the same time, reading is often a component of language tests, including high-stakes tests, such as entrance examinations, the Test of English for International Communication (TOEIC) and the Test of English as a Foreign Language (TOEFL). Therefore, assessing reading ability accurately is crucial for both test-takers and test-makers so that appropriate decisions will be made. To this end, this paper attempts to investigate what constructs should be measured in reading tests by reviewing the findings from first-language and second-language reading research as well as by examining the nature of reading ability. By identifying the constructs to be measured, this paper aims to improve not only the quality of test-making but also of the teaching of reading.

1. Introduction

In accordance with changes in lifestyles, what people read has changed drastically. In addition to physical copies of books and newspapers, same reading materials have started to be found on computer screens. It is often said that e-mail and text messages have almost completely replaced letters. In spite of these changes, one thing stays the same: people still read. Being a vital aspect of language use, reading has been examined extensively by both first language (L1) and second language (L2) researchers. Accordingly, it has been investigated in L1 and L2 teaching fields as well. Compared to the teaching of other aspects, such as writing, listening, speaking and grammar, reading seems to have received the most attention from language teachers.

Reading is often defined as the interaction between the reader and the

text (Aebersold & Field, 1997; Hill & Parry, 1992). In spite of this deceivingly simple definition, it is a highly complex process. There has been much research aimed at what reading is; however, as reading is usually internal and silent (Alderson, 2000), it is not easy to determine. In order to improve the understanding and teaching of reading, many attempts to investigate and define the nature of reading have been made, including, but not limited to, process approach (Anderson, 1999; Grabe, 1991) and product approach (Alderson, 2000; Stanovich, 2000); nevertheless, as Aebersold and Field (1997) stated "the act of reading is not completely understood nor easily described" (p. 5).

With these contexts in mind, this paper attempts to answer the following research questions.
1. What is the nature of reading ability?
2. What constructs should be measured to assess reading ability?

The first research question is raised to deepen the understanding of reading in order to improve the quality of teaching. The second research question tries to identify constructs to be measured in testing. While any language test should be aimed to exclusively measure language ability, isolating language ability is a problematic objective because of the influence of cognitive, metacognitive, affective, topical, cultural and other features. It applies to reading as well. Given the fact that reading is a frequent component of language tests, including well-established tests such as the Test of English for International Communication (TOEIC) and the Test of English as a Foreign Language (TOEFL), making an attempt to identify the constructs should benefit test-making, further benefitting both test-takers and test-makers in that quality tests should enable test-makers to infer test-takers' true ability.

This paper starts with introducing several views of reading and the nature of reading ability. Second, in an effort to elucidate the nature of reading, some component skills for fluent reading will be investigated, followed by the process of reading as well as the three models to explain the process. Then, the product approach will be discussed together with the difference between reading in L1 and L2. Finally, the research questions are addressed, research findings and their implications discussed. Final thoughts are given in the end.

2. What is reading?

Alderson (2000) stated that reading can essentially be divided into "two components: decoding (word recognition) and comprehension" (p. 12). Getting meaning from texts, that is, comprehension seems to be one of the

widely accepted definitions of reading. Referring to this definition, however, Perfetti (2003) argued that it is just one of the goals of reading and further argued that the essential nature of reading is to learn that one's writing system encodes his or her language and also to decode the printed forms. In contrast, Hill and Parry (1992) claimed that reading is not just the technical skill of decoding texts, but a social skill for human communication. Using a physics text which required expert knowledge as an example, they argued that knowing all the words and being able to decode did not necessarily mean understanding the text. In their view, reading is an interaction between the reader and the text, which involves comprehension. Nonetheless, one could not comprehend nor interact with texts without decoding. Thus, decoding alone might not be sufficient, but it seems to be necessary for reading comprehension.

Due to the difficulty of defining reading, three approaches have been employed instead in order to describe and understand reading (see Grabe, 1991). All the approaches will be addressed in the next section.

2-1. Examining reading with its component skills

The first approach is to identify the component skills required for fluent reading. Grabe (1991) identified six component skills: 1) automatic recognition skills, 2) vocabulary and structural knowledge, 3) formal discourse structure knowledge, 4) content/world background knowledge, 5) synthesis and evaluation skills/ strategies and 6) metacognitive knowledge and skills monitoring (p. 379). In his more recent study, Grabe (2004) listed nine component abilities, which include the above-mentioned six components, needed for effective reading comprehension. Although there are some additions (rate fluency abilities, abilities for extensive reading, and intrinsic motivation for reading), the six components appear to be timeless and essential for reading. Similarly, referring to the component skills, Anderson (1999) stated that "understanding main ideas, making inferences, predicting outcomes, and guessing vocabulary from context are all reading skills that readers of English typically need to develop" (p. 1).

2-2. Investigating reading with its process

The second approach employed is to investigate reading processes (Alderson, 2000; Anderson, 1999; Grabe, 1991). Pointing to individual differences, Alderson (2000) maintained that "the process is likely to be dynamic, variable, and different..." (p. 3) for readers depending on variables such as the type of text, time, motivation, and purpose for reading. Acknowledging the difficulty of understanding the process, he

stressed its requisite nature for understanding reading. Grabe introduced three models which explain the reading process: bottom-up model, top-down model, and interactive model, which seem to have been investigated in the reading literature most frequently. Anderson (1999) explained that the development of models started with the bottom-up model, which was replaced by the top-down model, which was further replaced by the interactive model. In the following, each model is briefly examined chronologically.

2-3. Three models to explain reading process

According to the bottom-up model, readers gather information from small components (e.g., letters and words), identifying their meanings, and then move forward to the processing of larger syntactic components (e.g., phrases and sentences) as the name of the model shows. The bottom-up model involves a variety of distinct cognitive subskills, such as word recognition, spelling and phonological processing, morphosyntactic parsing and lexical recognition and access (Hinkel, 2006) According to Alderson (2000), "Each component involves subprocesses which take place independently of each other, and build upon prior subprocesses. Subprocesses higher up the chain cannot, however, feed back into components lower down…" (p. 16). He concluded, in the bottom-up approach, "readers are passive (italics added) decoders of sequential graphic-phonemic-syntactic-semantic systems, in that order" (p. 17).

In contrast, in the top-down model, a reader plays an active role as it requires the reader's contribution, namely, "the knowledge a reader brings to text" (Alderson, 2000, p. 17). Alderson (2000) referred to the models of reading that emphasize the importance of this knowledge: "schema-theoretic models." Defining schemata as "networks of information stored in the brain which act as filters for incoming information," (p. 17) he stated that the top-down model emphasized "the importance of these schemata, and the reader's contribution, over the incoming text" (p. 17). Similarly, Dubin and Bycina (1991) stated that in the top-down model, readers "predict meaning as they read, they take larger chunks of texts at a time, they do not attend to separate letters [as they do in bottom-up model], rather they match what they already know with the meaning they derive from the text" (p. 197). According to Alderson, many researchers (e.g., Schank, 1978; Smith, 1971) advocated this model. Nonetheless, the top-down model is not without criticism. Alderson pointed out that schema theory does not lead to explicit definitions or predictions of comprehension processes. Referring to schemata which readers are supposed to have before reading, Grabe and Stoller (2002) questioned what

a reader would learn from a text if the reader must have some knowledge about the information in the text beforehand.

The third is interactive model, which was proposed when neither bottom-up nor top-down model appeared to be fully sufficient to explain the complex process of reading. Pressley (2006) stated that both bottom-up and top-down approaches represent the extremes and that "either extreme misses the mark" (p. 11), advocating what is known as a balanced approach, which has been identified as an interactive model. According to Grabe (1991), the term "interactive" refers to two different conceptions. First, it can refer to the general interaction between the reader and the text. Secondly, it can refer to "the interaction of many component skills potentially in simultaneous operation" (p. 383). He stated that the interaction of these cognitive skills leads to reading comprehension. Grabe and Stoller (2002) stated that "one can take useful ideas from a bottom-up perspective and combine them with key ideas from a top-down view" (p. 33) to explain this model. According to Aebersold and Field (1997), in the interactive model, both bottom-up and top-down approaches can occur either simultaneously or alternately. The balance between these two approaches can vary depending on readers, texts and purpose of reading (Alderson, 2000). On the other hand, Stanovich (2000) maintained that "deficiencies at any level in the processing hierarchy can be compensated for by a greater use of information from other levels" (p. 49). Adding a "compensatory assumption" (p. 49, cited from Stanovich, 1980) to the basic interactive idea, he proposed the interactive-compensatory model.

In the next section, let us look in detail at the third approach that focuses on the product as opposed to the process.

2-4. Identifying reading with its product

Alderson (2000) distinguished the process from the product, which is the result of that process (i.e., the mental representation the reader leaves the text with). As discussed above, process has been examined widely to investigate the nature of reading. Similarly, product has also been used to examine reading. In the product approach, the focus is not on how readers reach a certain understanding, but what understanding, namely, product, they ultimately reach. Examining reading with the product approach might be easier than with the process approach in that it is visible. Notwithstanding, Alderson pointed out two limitations of the product approach: 1) "the variation in the product" and 2) "the method used to measure the product" (p. 5). As for the first limitation, he stated that a text itself does not contain meaning, but "meaning is created in the interaction

between a reader and a text" (p. 6), referring to Halliday (1979) and Widdowson's (1979) term "meaning potential" (p. 6). Thus, products of the same text can vary depending on its readers. It seems to echo Alderson's aforementioned contention that even the same reading process can vary for readers due to their individual differences.

In terms of the second limitation, Alderson mentioned the two latent problems. First, referring to the fact that comprehension and remembering texts are often treated identically, he stressed the importance of distinguishing the two. The issue of differentiating the two has been widely discussed in psycholinguistics field (see Kintsch, 1988). Secondly, Alderson discussed the problem of potential risk of a test-method effect, which will prevent tests to reflect test-takers' reading ability accurately. In testing, product corresponds to the answers which test-takers make. Alderson and Lukmani (1989, as cited in Alderson, 1990) argued that even the same product, that is, the correct answer, may be arrived at in different ways using different processes. Pointing out the fact that inferences about test-takers' reading ability are made based on their answers, Alderson (1990) maintained that not only the relationship between process and product, but variables across individuals such as age and motivation should be taken into consideration to measure test-takers' real ability.

In the case of L2 reading, L1 background seems to be another important variable to consider. Regarding this issue, L1 and L2 reading will be discussed in the next section.

3. The difference between reading in L1 and L2

Compared to the vast body of L1 reading research, that of L2 is not as extensive; therefore, the findings from L1 reading research have often been applied in that of L2. Nonetheless, it should be stressed that they are not exactly identical. The critical difference is that L2 reading can be influenced by factors not normally considered in L1 reading. According to Grabe (1991), these factors can be divided into two categories: 1) L2 acquisition and training background differences and 2) language processing differences (p. 386).

The first category "L2 acquisition and training background differences" refers to the fact that L1 and L2 readers start to learn to read with very different knowledge. L1 readers usually have more language knowledge, whereas L2 readers usually have more metacognitive knowledge as they are generally older when they start to learn the language than their L1 counterparts. Concerning this issue, Shiotsu (2009) also mentioned that most L2 learners "start to read in second language before achieving the

kind of grammatical maturity and the level of oral vocabulary that L1 readers attain before they begin to read" (p. 16).

The second category "language processing differences" involves transfer effects caused by factors, such as false cognates, readers' L1 syntactic knowledge and orthographic differences. For example, ESL learners whose L1s use a Roman script are expected to have the advantage over those who use a non-Roman or non-alphabetic writing system (Shiotsu, 2009). In sum, issues that are unique to L2 should be specifically addressed in L2 reading research.

Relating to the L2 reading issue, Alderson (2000) examined the question "Is a good first-language reader also a good second-language reader?" (p. 23), citing one of his earlier works (1984). When L2 learners have a reading problem, it tends to be regarded as a result of their L1 reading ability as well as their L2 language ability. Alderson referred to the presumable existence of a language threshold, "which must be crossed before first-language reading ability can transfer to second-language reading ability" (p. 121). Acknowledging the importance of both factors, he concluded that knowledge of L2 was a more important factor than L1 reading abilities to be a good L2 reader.

4. Discussion

Although the literature reviewed so far is by no means a complete picture of the ongoing research in this field, it provides an overview of the findings, implications, and issues with regard to reading. In this section, two research questions will be addressed based on the findings of the studies reviewed here, followed by the implications that are likely to help facilitate learners and test-takers in reading.

As for the first research question of what the nature of reading ability is, it seems to be safe to say that decoding (word recognition) and comprehension are two essential components for reading (Alderson, 2000). As stated above, for L2 learners, decoding would involve their linguistic knowledge of L2.

With regard to the second research question of what constructs to be measured in testing, based on the review of the literature on reading ability, I identified the following four constructs as the essential components of reading ability: gist, inference, detail and vocabulary in context. Gist is crucial in getting a big picture of the reading material and can be measured based on the ability to identify the main idea of the passage or of subsections of the passage. Inference is also important as readers are often expected to read between the lines, that is, from what is

written, they are expected to infer something that is not. It should be measured based on the ability to derive logical conclusions about the writer's intentions or ideas which are not written in the text. In contrast to gist, detail is necessary to read small parts of the passage accurately and will be measured based on the ability to recognize specific information in the passage. Last but not least, vocabulary should be one of the constructs. As mentioned earlier, decoding (word recognition) is recognized as an essential element of the nature of reading; one could never decode without the knowledge of vocabulary. On the other hand, in case of testing, test-takers are normally given a passage that is likely to include unknown vocabulary. Therefore, the ability to guess the meaning of new vocabulary that they encounter for the first time seems to be required for test-takers. As such, vocabulary in context should be also measured based on the ability to figure out or deduce the meaning of words from the surrounding context of the passage when confronted with unknown words.

Based on the findings from the studies, the following implications emerged.

First, picking engaging reading materials that are likely to motivate learners or test-takers appears to be extremely important. Bachman and Palmer (1996) defined language ability as the capacity for creating and interpreting discourse. This involves the interaction of language knowledge and topical knowledge with the context (language use task), mediated by metacognitive strategies and facilitated or hindered by affect. A teacher's facilitation has not a little direct influence and is under the complete control of the teacher unlike the other variables, such as learners' or test-takers' L1, age, and educational experience. Therefore, providing texts that are likely to work positively for learners' or test-takers' affect is key. As for the other variables, teachers may not have any direct control, but they can at least consider these variables so as to choose texts or design tests that would not work negatively to learners' or test-takers' affect nor bias any of them.

Second, encouraging learners to read actively would be another key to consider. In the top-down model, active reading is closely related to schemata. However, I would like to define active reading as an interaction between a reader and a text, as referred to by Grabe (1991) as one of the conceptions of the interactive model. It seems that reading tends to be regarded as a passive linguistic skill; as a consequence, teachers do not seem to fully encourage learners to play an active role in reading. As mentioned earlier, Alderson (2000) stated that the interaction between a reader and a text creates meaning, maintaining that a text itself contains no meaning. If his contention is right, a learner's interaction with a text, that

is, active reading will be crucial. In classrooms, just instructing learners to read actively verbally does not seem to be promising, especially for learners at a beginning-level. Thus, giving a more detailed instruction, such as telling learners to read with a pen and underline the parts which they find important or write down any questions they may have while reading seems to be more facilitative for learners to read actively. In testing, trying to read actively will also help test-takers answer questions correctly. Meanwhile, teachers may want to support learners by giving tasks that would induce them to interact with a text actively or by recycling the text so that they can read actively because of potential content familiarity, enabling them to attain deeper understanding ultimately.

Third, the use of a dictionary appears to be an issue to consider. As discussed earlier, word recognition is generally regarded as an essential component for reading. On the other hand, learners are likely to be encouraged to make good use of dictionaries on a regular basis. That said, related to active reading, teachers may want to limit learners dictionary use to some degree and encourage them to guess the meaning of unknown words from the context without the help of dictionaries. In addition to inference, vocabulary in context is another construct to be tested. Thus, limiting dictionary use while reading seems to be beneficial for learners in testing as well as in pleasure reading they experience outside of classrooms.

5. Final thoughts

Although no consensus on the nature of reading ability has been reached and it is clear that further research is needed, the progressive developments over the years seem to have helped shape mainstream thinking in the field of reading and reading assessment. In testing reading, as well as testing any other language skills, no effort should be spared to make tests that are likely to elicit the best in test-takers so that the tests will enable teachers to infer the test-takers' ability accurately.

It is hoped that more research will be conducted to elucidate the nature of reading ability and how it can be best measured. It is also hoped that teachers and learners benefit from the research findings and that their teaching and learning goals are best achieved.

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