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Original Paper

Diagnostic Assessment in L2 Reading Based on Diagnostic Principles

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Abstract

In recent years, L2 reading becomes a hot research topic that most language teaching researchers concerned about in Second or Foreign Language (SFL) field. About L2 reading assessment, a new research perspective proposed by Alderson, Brunfaut and Harding (2014) stated that diagnosis could be practiced across a range of professions in order to develop a tentative framework for a theory of diagnosis in SFL assessment (Alderson et al., 2015). There remained a question to be discussed: how to implement a diagnostic assessment and diagnostic principles in L2 reading efficiently. This paper will illustrate the set of principles (Alderson et al.) by first outlining the stages of a diagnostic process built on these principles after analyzing L1 reading and L2 reading respectively. Then, it will discuss the implications of this process for the diagnostic assessment of reading in order to improve students' L2 reading ability through diagnostic assessment.

Keywords

L2 reading, diagnostic assessment, diagnostic principles

1. Introduction

Although L2 reading is a hot research topic in recent years, not much work has done from through the lens of applying diagnostic assessment into L2 reading research. The question that whether diagnostic assessment could help L2 reading research and students' ability to read L2 text deserves further discussions. The definition of diagnostic assessment varied. Alderson and his colleague consider diagnostic assessment as an approach identifying learners' strengths and weakness in the less well-documented areas of SFL reading (Alderson et al., 2014). The other researcher Hu (2001) believes that diagnostic assessment is one type of the tests which aims to discover what the testee does not know about the language. It can help teachers to find out what is wrong with the previous learning and what to do in the future (Hu, 2001). Du (1999) regards diagnostic assessment as a process which helps

language teachers figure out the problem in their teaching and students' learning, thereby pushing teaching and learning forward. In recent years, Alderson, Brunfaut and Harding (2014) have studied how diagnosis is practiced in order professions to outline a theory of diagnosis in Second and Foreign Language (SFL) assessment. They proposed a set of theory pertaining to applying diagnostic assessment in Ly reading the most efficiently.

Diagnostic Theory Illustration is related to a theory raised by Alderson et al. (2014). It included: a robust definition of diagnosis, a clear understanding of the means of diagnosis and participants involved, recommendations for a set of procedures for conducting diagnosis and a closer focus on the interface between a decision, the development of appropriate related feedback and the intervention to follow. As to this theory, Alderson et al. mapped it out into five principles for the diagnosis of strength and weakness in SFL (Alderson et al., 2015).

Principle 1: It is not the test which diagnoses but it is the use of the test (Alderson et al., 2015).

This principle coincides with the theory of a robust definition of diagnosis. That is to say, diagnostic assessment aims to diagnosis itself. It regards itself as an approach in studying SFL.

Principle 2: Instruments themselves should be designed to be use-friendly, targeted, discrete and efficient in order to assist the teacher in making diagnosis (Alderson et al., 2015).

This principle is derived from the emphasis the tastes placed on tools with a clear focus and capacity to play a facilitating role. Diagnostic tests should be reasonably arranged in classroom by a trained teacher (or other experienced language teaching professional), and should produce rich and detailed feedback for testers. More importantly, the testing instruments should be purpose-oriented in mind.

Principle 3: The diagnostic assessment process should include diver stakeholder views, including learners' self-assessment (Alderson et al., 2015).

It emphasizes the reliability of diagnostic assessment. For learners, it is not enough to receive assessment from outside. Learners' self-assessment represents an important part in considering the diagnostic result.

Principle 4: Diagnostic assessment should ideally be embedded within a system that allows for 4 diagnostic stages in testing process (Alderson et al., 2015): (1) listening/observation, (2) initial assessment, (3) use of tool, tests, and expert help, and (4) decision-making. Much diagnostic assessment begins from the stage (3), skipping stage (1) and (2).

Thus, before decision-making, an important introspection is that will the same decisions about strength and weaknesses have been made on the basis of an individualized assessment in a classroom context?

Principle 5: Diagnostic assessment should relate to some future treatment (Alderson et al., 2015).

If the diagnostic assessment does not target for future treatment once identifying problems, it will become meaningless. Thus, an efficient diagnostic assessment should include treatment or intervention to address specific problems which have been identified.

2. L1 and L2 Reading Analysis

Reading is a critical life skill that every citizen in our globalized word should acquire.

Researchers in neuro-cognitive field suggest that a large amount of work in the neuro-cognitive literature has examined literacy development and reading ability, but this work has been primarily conducted at the single word level (Li & Clariana, 2018), not sentence level or text level. It is true that L1 and L2 reading differs vastly not only in single lexical level, but in language proficiency, knowledge structure and language working memory.

2.1 Lexical Aggregates in Reading Comprehension

L1 and L2 reading texts have the structure that can be captured such as analysis of lexical aggregates (ALA-Reader & Clariana, 2010b). However, there exist a number significant gaps between L1 and L2 reading test. Perfetti and Stafura (2014) and Verhoeven and Perfetti (2011) suggest that if native language speakers vary in their ability to successfully integrate words into text comprehension, we could hypothesize that L2 vocabulary knowledge in the same way will significantly impact how well a reader succeeds in reading comprehension when the text is presented in the L2 (Perfetti & Stafura, 2014; Verhoeven & Perfetti, 2011). The same article in two versions of L1 and L2 is the best indicator in that if the reader does not attain enough large size of vocabulary in his native language, he will also encounter trouble in L2 reading. Thus, it can be predicted that L2 vocabulary proficiency can be a good indicator of the L2 learners' text reading performance.

2.2 Language Proficiency in L1 and L2 Reading Comprehension

Cognitive phenomena is related to one's reading ability which is separated from language proficiency (Li & Clariana, 2018). Ray and Meyer studied the relation between human cognition and their reading ability. They found that less proficient readers approach an expository text using a "default/list strategy" while proficient adult readers implicitly or explicitly seek and attain structure from that text (Ray & Meyer, 2011). Thus, the richness of the local lexical structure which is accrued from experience primarily attributes to this reading strategy difference.

Other researchers believe that readers' L2 language proficiency includes their proficiency in reading topics, L2 vocabulary, text structure, coherence judgements and casual or semantic relatedness, etc. Shingo Nahatame (2017) proposed that standards of coherence are one of the major factors that influence reading comprehension, especially in L2 reading comprehension. He carried out sets of academic researches and believed that when making judgements, lower proficiency readers were likely to place greater emphasis on semantic relatedness, whereas higher proficiency readers were likely to place greater emphasis on casual relatedness (Nahatame, 2017). He recruited 37 female student and 12 male students from 49 universities in Japan as testing participants. All of them were Japanese native speakers who had learned English as L2 for more than 6 years and thus attained almost the same level of L2 language proficiency. Nahatame chose Eiken Test as L2 reading proficiency measure because it was the most authoritative testing measure in national-wide Japan and used for a long time (more than 50 years) to measure English proficiency for Japanese students. Alongside many Eiken Grades, he

chose the sets of Grades 3, Pre-2, and 2 because those were fit for participants' L2 proficient level. All participants were required to finish the L2 reading proficiency test (Eiken Test) within 35 minutes. Then they were randomly assigned one of the four lists of sentence pairs. Participants needed to read those sentence pairs for comprehension and they were offered a comprehension test about those sentence pairs later. Moreover, they were instructed to judge the coherence of paired sentences after reading each pair. According to the achievement of the coherence judgement task, participants were scored on a 5-point Likert-type scale ranging from 1 (not coherent at all) to 5 (very coherent). They were asked to circle the appropriate number on the scale below each sentence pair within 20 minutes. Result of this study revealed that both casual and semantic relatedness have a significant impact on L2 readers' coherence judgements of two-sentence texts. L2 readers were likely to judge sentences that were high in casual or semantic relatedness to be more coherent than those low in the relatedness (Nahatame, 2017). These results are consistent with those of Todaro et al. (2010) with L1 English-speaking readers.

From the study carried out by Nahatame (2017), L2 readers with different L2 proficient levels cognitively proceed sentences differently and it can be inferred that language proficiency greatly influences L2 readers in their reading process.

2.3 Knowledge Structure in L1 and L2 Reading Comprehension

Knowledge structure that represents network graphs commonly show that the key terms/concept words in a text are more central than others (e.g., high degree nodes that have the most links to other terms) except for texts describing usually linear thinking such as procedures, directions, and flows (Li & Clariana, 2018). Therefore, Li and Clariana believed that examining readers' post-reading knowledge structure and comparing it to the local structure of the text was a direct way to know if a reader had acquired the structure of the text as intended by the author. They agreed that in bilingual setting, L2 text influenced both L1 knowledge structure and L2 knowledge structure. The relation of L1 and L2 knowledge structure and L2 reading deserved to be considered.

Mun (2015) carried out a study in recent years to investigate the influence of L2 reading and post-reading production tasks on L1 and L2 knowledge structure and on posttest. He recruited Dutch undergraduate students with high a degree of English proficiency to read an English 722-word expository text from TOSOL passage "The Cave of Lascaux". Mun divided the test participants into four groups:

(1) Sort (E) – completed a concept sorting task in L2 (English)

(2) Sort (D) - completed a concept sorting task in L1 (Dutch)

(3) Write (E) – wrote a summary of the text in L2

(4) Write (D) - wrote a summary of the text in L1.

After finishing those tasks, all readers needed to complete the associated English TESOL 9-item multiple choice reading comprehension posttest. The result was: Write (D) 8.6 (significant) > Write (E) > Sort (D) > Sort (E) 7.1 (Mun, 2015). This study indicates that the L1 knowledge structure more

significantly influence L2 reading, especially in the aspect of learners' subjective language output.

After the observation of Mun, another empirical study was delivered by Kim and Clariana (2015) with the purpose for detecting the influence of L2 reading and post-reading production tasks on L1 and L2 knowledge structure, and posttest comprehension. The test participants were Korean undergraduate students with low English Proficiency. Kim and Clariana divided those participants who were asked to read the same TESOL passage of "The Cave of Lascaux" into two groups: (a) a Direct writing task (English only) that required participants to work only in English to create the first concept map (1) of the text and write a summary of the text. They the create a second concept map (2) before finishing the multiple-choice comprehension posttest or (b) a Translated writing task (Korean and English) that asked participants to create a concept map of the text in Korean (1) and write a summary of the text in Korean, then drawing a second concept map in Korean (2), writing a summary of the text in English and creating the third concept map in English (3) before completing the multiple-choice comprehension posttest. This result revealed that participants in the Directed Writing group who read and mapped in English had 14.4 terms on average in their maps and these terms had 32% agreement with the expert's terms compared to those in the Translated Writing group who read in English and then mapped in Korean with 19.9 terms and 58% agreement with the expert (Li & Clariana, 2018). This result reflects the L1 knowledge structure positively supports participants' cognitive processes when reading L2 text and participants can achieve better with the help of L1 knowledge structure as they read L2 text.

Data from those studies above indicates that local-topic knowledge structure of L1 and L2 may differ, but L1 knowledge structure positively influences L2 knowledge structure when the post reading requires L1-L2 interaction (Li & Clariana, 2018). It is true that there exist "gaps" in everyone's L2 knowledge when reading L2 texts. Thus, we need the recruitment of cognitive resources as a bridge to connect or balance the L1 and L2 developing situation model. As suggested by Li and Clariana, the larger L1 chunks of knowledge structure can be called upon to support the sparse and less-well-structured L2 knowledge structure.

3. Diagnostic Assessment in L2 Reading

The most important difference between L1 and L2 reading lies in language (Harding et al., 2015). SFL readers are typically reading in a language that they have not mastered, and therefore L2 reading problems will be at least in a language as much language-related as reading-related (Alderson, 1984). In diagnostic reading, it includes not only diagnosing language problems, but also reading problems. For instance, to L1 readers, they initially learn how to recognize in the written form what they already know in the spoken form.

L2 readers attain different level of L2 language proficiency as mentioned before, and therefore they may show different "levels" of ability, thereby adopting different reading strategies such as top-down and bottom-up reading strategies or scanning and skimming reading strategies, etc.

3.1 Diagnostic Assessment in Lower-Level L2 Reading Process

L2 readers with different levels of reading ability perform differently in L2 reading process. Readers with lower level perform that of word recognition, of being able to link written symbols to sounds or meaning, the parsing of syntactic and morphological structures, the development of the automaticity of such recognition and parsing, and the role of working memory and attention deriving meaning from text (Harding et al., 2015). For those readers, diagnostic assessment aims at solving language problems more than reading problems. The DIALUKI project (www.jyu.fi/dialuki) is one of the sorts of diagnostic measures fit for L2 readers with lower level of L2 reading ability. It uses backward digit span, rapid word reading, rapid word list reading, rapid automatized naming, non-word reading, non-word spelling, non-word repetition, phoneme deletion and common unit tests (Harding et al., 2015). One innovative point of this measure lies in that it uses the measure of cognitive process not only in L1, but also in L2. In contrast to the usual measure, the cognitive measure of DIALUKI project is more useful to L2 readers in SFL reading text. Furthermore, the diagnostic assessment of L2 reading should always use foreign language (FL) measures but should also consider the L1 of the reader. In other word, it should consider the differences between the learner's L1 syntax and morphology and that of the target language.

3.2 Diagnostic Assessment in Higher-Level L2 Reading Process

Problems of L2 readers with higher level of reading are not simply language troubles. According to Grabe (2009), the higher level is more diffuse but involves skills and resources such as topic and world knowledge, inferencing, building a mental model of the text, monitoring what one has read and what or whether one has 'understood' it and synthesizing and evaluating what one is reading and has read (Grabe, 2009). The higher-level reading processes is common practice to identify different components of reading to test separately the ability to understand gist, the ability to understand the main idea, to understand the specific detail and so on (Harding et al., 2015). For readers with higher-level of reading, there are two measures proposed by researchers recently. One is called DELNA and the other is DELTA. Those two different diagnostic measures differently address L2 reading processes. DELNA assesses eight reading ability as follows: (1) ability to find specific information, (2) ability to locate causes and effects, sequences, contrasts, (3) ability to distinguish between main points and evidence or supporting ideas, (4) ability to select words which fit the meaning and the grammatical construction of the texts, (5) ability to summarize the topics, (6) ability to draw a conclusion based on the information in a passage, (7) ability to distinguish between fact and opinion, (8) ability to organize information in a passage in another way (www.delna.aucklang.ac.nz/uoa/). By contrast, DELTA emphasizes a range of sub-skills across various text types addressing a range of different topic areas (Harding et al., 2015). This diagnostic assessment tests readers' ability corresponding to different genre. According to one of the results from DELTA test, for example, when reading academic articles with the theme of history and culture, readers perform well in identifying information and making an inference but perform poorly in identifying specific information. Another example for contrast is that once reading news articles with

the theme of environmental issue, readers perform well in identifying specific information but poorly in identifying information and making an inference. The diagnostic report is based on the item difficulty relative to readers' proficiency.

4. Conclusion

Diagnostic assessment is much feasible in L2 reading test. Although Alderson et al. (2014) has explored the applying of L2 reading diagnosis and sketched theoretical framework with five diagnostic principles, there should be more data from empirical studies as supporting evidence. Starting with the illustration of theory with five diagnostic principles, this paper also clearly manifests L1 and L2 reading to recognize the similarities and differences between the two. As to readers with different language proficiency, diagnostic assessment should be designed according to the level of reading ability to implement efficiently.

Overall, diagnostic reading assessment is all-round considered and a wide range of discrete tasks are put forward for L2 readers with different level of reading ability. It also acknowledges the need for further research into tools (for example, DELNA and DELTA) aiming to diagnose higher-level reading skills. Such tools or instruments are necessary and indispensable to assist future L2 reading research constructs and, moreover, they are helpful in capturing genre-related dimensions of language proficiency.

References

Alderson, J. C. (1984). Reading in a Foreign Language: A Reading Problem or a Language Problem? In J. C. Alderson, & A. H. Urquhart (Eds), *Reading in a Foreign Language* (pp. 1-24). London: Longman.

Alderson, J. C., Brunfaut, T., & Harding, L. (2014). Toward a theory of diagnosis in second or foreign language assessment: Insights from professional practice across diverse field. *Applied Linguistics*. Cambridge: Cambridge University Press. https://doi.org/10.1093/applin/amt046

Clariana, R. B. (2010b). Deriving Group Knowledge Structure from Semantic Maps and from Essays. In D. Ifenthaler, P. Pirnay-Dummer, & N. M. Seel (Eds.). *Computer-based Diagnostic and Systematic Analysis of Knowledge* (pp. 117-130). New York, NY: Springer. https://doi.org/10.1007/978-1-4419-5662-0_7

D, J. B. (1999). Diagnostic testing in foreign language teaching. *Foreign Language Teaching and Research*, (04), 40-43.

Grabe, W. (2009). *Reading in a Second Language: Moving from Theory to Practice*. https://doi.org/10.1017/CBO9781139150484

Harding, L., Alderson, J. C., & Brunfaut, T. (2015). Diagnostic Assessment of Reading and Listening in a Second or Foreign Language: Elaborating on Diagnostic Principles. *Language Testing*, *32*(3), 317-336. https://doi.org/10.1177/0265532214564505

Hu, Z. L. (2004). *Linguistics, A Course Book*. Location: Beijing University Press.

Kim, K., & Clariana, R. (2015). Knowledge Structure Measures of Reader's Situation Model across Languages: Translation Engenders Richer Structure. *Technology, Knowledge and Learning*, *20*, 249-268. https://doi.org/10.1007/s10758-015-9246-8

Li, P., & Clariana, R. B. (2018). Reading Comprehension in L1 and L2: An Integtative Approach. *Journal of Neurolinguistics*, 1-11. https://doi.org/10.1016/j.jneuroling.2018.03.005

Mun, Y. (2015). *The Effect of Sorting and Writing Tasks on Knowledge Structure Measure in Bilingual's Reading Comprehension* (Unpublished Master's Research Paper). State College, Pennsylvania: The Pennsylvania State University. Received from https://scholarsphere.psu.edu/files/x059c7329.

Nahatame, S. (2017). Standards of Coherence in Second Language Reading: Sentence Connectivity and Reading Proficiency. *Reading in a Foreign Language*, *29*(1), 86-112.

Perfetti, C., & Stafura, J. (2014). Word Knowledge in a Theory of Reading Comprehension. *Scientific Study of Reading*, *18*(1), 22-37. https://doi.org/10.1080/10888438.2013.827687

Ray, M. N., & Meyer, B. J. F. (2011). Individual Differences in Children's Knowledge of Expository Text Structure: A Review of the Literature. *International Electronic Journal of Environmental Education*, *4*(1), 67-82.

Verhoeven, L., & Perfetti, C. A (2011). Introduction to this Special Issue: Vocabulary Growth and Reading Skill. *Scientific Study of Reading*, *15*(1), 1-7. https://doi.org/10.1080/10888438.2011.536124

W, C. J. (2018). The backwash effect of diagnostic testing in English teaching. *Crazy English*, (03), 107-108.