

Yueh-Nu Hung*

The Validity and Reliability of Reading Miscue Analysis: Issues and Possible Consolidations

Abstract

Miscue analysis is a reading research method and a reading evaluation tool developed by Kenneth Goodman in the 1960s. It has been used widely to study reading processes and evaluate reading performance. Generally considered an alternate reading assessment, miscue analysis reveals the processes of comprehending while most standardized reading tests show the results of comprehension. Although a valuable reading evaluation tool, miscue analysis provokes its share of concerns about test validity and reliability. The purpose of this study is to explore issues concerning the validity and reliability of miscue analysis research. It first presents a brief introduction to miscue analysis and procedures of collecting miscue data. Then issues concerning the validity and reliability of miscue analysis are discussed by surveying and synthesizing related research literature. This is followed by a discussion about possible ways to consolidate validity and reliability of miscue analysis. The study would help interested reading teachers and researchers to use miscue analysis as a counterpoint to other types of reading tests.

Keywords

Miscue analysis, Validity, Reliability

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洪月女

閱讀差異分析信度與效度之探究與提升

摘要

閱讀差異分析是 Kenneth Goodman 在 1960 年所提出的閱讀研究方法，可運用於閱讀歷程研究及閱讀理解評量。閱讀差異分析不同於大多數的標準化閱讀測驗，前者著重於閱讀理解的過程，而後者則偏向閱讀理解的結果。因差異分析具有信度與效度要求，故可視為研究閱讀過程和評量的重要工具。本研究旨在探討閱讀差異信度與效度之相關議題，故首先簡述閱讀差異分析為何，透過文獻評析與整合，討論其原有之信效度，並進而建議強化差異分析信效度的可能方式，以期幫助學者與教師善用差異分析進行閱讀研究與閱讀評量，使其成為標準化閱讀紙筆測驗之外的替代評量方法。

關鍵詞

差異分析、信度、效度



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INTRODUCTION

Testing is one of the most important issues in language education, and all language teachers need to either use or design language tests and prepare their students to take all types of tests. Testing can help language teachers to strengthen their teaching, and based on the results of testing, language teachers modify teaching in ways most beneficial to the student.

The evaluation of student's reading proficiency is especially important. This is the case because reading is the primary medium through which people learn, and citizens who are fully functional in all private and social sectors of life must be able to access, comprehend, and evaluate information through reading. What we really hope our school children can achieve in reading in the 21st century is the ability to analyze, synthesize, summarize, and think critically (Myers, 1996).

Various national and international reading proficiency tests have been developed. For example, one of the most well known, Progress in International Reading Literacy Study (PIRLS), examines fourth-grade elementary children's reading achievement (Mullis, Martin, Kennedy, & Foy, 2007). Inaugurated in 2001 and conducted every five years, PIRLS provides cross-national information about reading achievements, reading attitudes, classroom instruction, home activities, and many other facets of the reading experience.

While such international, large scale standardized reading tests show international trends in school reading achievement and provide implications for educational policy makers, they are not necessarily appropriate for teachers to use in their classrooms. Such standardized reading tests are convenient in some ways, but they are not without problems or criticisms. Valencia and Pearson (1987) argue that standardized reading tests do not reveal how readers orchestrate comprehension strategies. It is also uncertain how well the format and content of standardized tests reflect current reading theories. Classroom teachers have long been developing their own reading tests. Alternatives in reading assessment

include oral reading miscue analysis, classroom observation, interview, portfolio assessment, running record which is commonly used in Reading Recovery program (Clay, 1993), informal reading inventory (IRI) which is individually administered to determine students' reading level and needs (Roe & Burns, 2011), and many others. Among these non-traditional reading assessments, miscue analysis is the concern of this study.

Considered an alternative reading test and performance based assessment, miscue analysis has a history of close to half a century. It was developed by Kenneth Goodman in the 1960s and has since then been used to evaluate the reading processes and the reader, as well as the reading text. Miscue analysis is both a research tool that helps us investigate the psycholinguistic processes of meaning construction and an assessment instrument for the evaluation of reading proficiency, difficulties, and strategies. Murphy (1998) points out that miscue analysis research has been so widely conducted that the term miscue analysis is used without reference to its originator.

Although miscue analysis research has been widely used for almost half a century, there is little research on the validity and reliability of the procedure. Sharon Murphy is probably the only researcher who has written on this topic (see Murphy, 1998, 1999). There are only sporadic articles by other authors on various issues concerning the validity and reliability of miscue analysis. There is a need for a more systematic and comprehensive study on this topic.

It is against this educational and research background that this study resolves to explore issues concerning the validity and reliability of miscue analysis. This is achieved by reviewing and synthesizing related literature on miscue analysis. Based on the results of the study, possible ways to consolidate the validity and reliability of miscue research are suggested. A brief introduction of miscue analysis is first presented, which is followed by a short description of the procedures of miscue studies. Then various issues concerning the validity and reliability of miscue analysis are discussed. Last, comments on ways to consolidate the validity and reliability of miscue research are presented. It is hoped that this study will help language teachers and researchers understand the potential of miscue analysis as a research tool and a reading evaluation method and make good use of it in the classroom and for research purposes.



A BRIEF INTRODUCTION TO MISCUE ANALYSIS

When Kenneth Goodman set out to study reading in the early 1960s, he found that young readers made substitutions when reading aloud (Brown, K. Goodman, & Marek, 1996; K. Goodman, 1996). These substitutions were, however, not haphazard, but related to the original text in some ways. For example, a definite article was substituted by an indefinite article or the other way around. K. Goodman then began a thorough investigation on these “errors” in reading aloud, and from such deviances in oral reading, he was able to see the tentativeness in the meaning construction process in reading. The term “miscue” was first used in an article K. Goodman wrote, “A linguistic study of cues and miscues in reading” (1965). Any differences between the expected reading from a text and the observed reading are called miscues. These differences are results of the reader’s active efforts in making sense of the text based on available language cues and on the reader’s knowledge base and background. They are the misuses of language cues, and hence the term “miscue.” In an article entitled “Reading: A psycholinguistic guessing game,” K. Goodman (1967) discussed the core arguments of his reading theory and model that laid out the foundation for miscue analysis.

The analysis process of miscues became more and more sophisticated and complex, and K. Goodman developed a systematic miscue analysis procedure that he called the Goodman Taxonomy (K. Goodman, 1969) which consists of 18 questions to answer based on the relations between the miscues and the original text. To make the miscue analysis procedure more accessible to classroom teachers, Y. Goodman and Burke reduced the number of questions and analysis categories but without sacrificing information about the uses of language cues and reading strategies. This procedure, which they called Reading Miscue Inventory (Y. Goodman & Burke, 1972), was further revised to offer alternatives in reading evaluation and diagnosis (Y. Goodman, Watson, & Burke, 1987, 2005). There are also several derivatives of miscue analysis which are mainly used in the classroom setting (see, for example, Cunningham, 1984; Rhodes & Shanklin, 2005; Wilde, 2000).

In the original miscue analysis procedure and its derivatives, there are common assumptions that underlie reading (Brown, K. Goodman, & Marek, 1996; Y. Goodman, 1995):



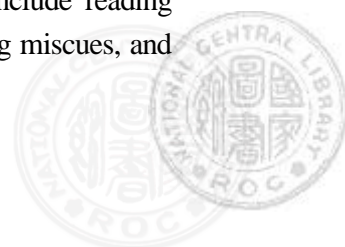
1. Miscues are never random. Miscues or not, the reader constantly uses language cues to make sense of the print.
2. Proficient readers and less proficient readers use the same language cues and strategies to comprehend. More proficient readers are better at using these cues and strategies than less proficient readers.
3. Miscues are caused by what the reader knows about the language and the world.

Miscue analysis has been used for multiple purposes. It is a research method that allows us to investigate the psycholinguistic processes of reading. Comparisons between expected reading and miscues provide a “window on the reading process” (K. Goodman, 1973, p. 5). Flurkey and Y. Goodman (2004) used miscue analysis to understand the role of genre on reading comprehension. Miscue analysis has also been used as a diagnosis tool to evaluate the reader. Readers of various characteristics such as deaf, beginning, bilingual or struggling have been evaluated with the miscue analysis instrument. Several hundred miscue analysis studies have been conducted in a dozen or more different languages (Brown, K. Goodman, & Marek, 1996), and it remains a powerful tool for reading research.

Miscue analysis has also been used to study native Chinese-speaking children's reading of Chinese as a mother tongue (王瓊珠, 2002; 吳金花, 1997; 林筱晴, 2006; 辜玉旻、張莞真、陳以欣, 2009; 鄒美雲, 2005; Chang, Hung, & Tzeng, 1992; Hung, 2005, 2006; Wu & Anderson, 2007), children's and adults' reading of Chinese as a second or foreign language (郭育綺, 2006; Wang, 2006), and native Chinese-speaking children's and adults' reading of English as a foreign language (鄒美雲, 2005; Her, 1994; Hung, 2004; Yang, 2003). It should be noted that in Taiwan, miscue analysis method is often used to diagnose Chinese reading difficulty (王瓊珠, 2002; 吳金花, 1997).

PROCEDURES OF MISCUE ANALYSIS

To help the reader better understand the following discussion about the validity and reliability of miscue analysis, it is necessary to provide a short description of the miscue analysis procedure here. K. Goodman and his colleagues' miscue analysis procedures are similar. Some of the core procedures include reading material selection, oral reading, retelling, marking miscues, coding miscues, and



data analysis. In what follows, the procedures of miscue analysis are described based on two of the more recent editions of *Reading Miscue Inventory* (Y. Goodman, Watson, & Burke, 1987, 2005).

1. Authentic reading materials of connected discourse are used for miscue analysis. The reading text should be new to the reader and a little beyond the reader's current reading level in order to produce enough miscues for analysis.
2. The reader is told by the researcher to read aloud the text in a way that she or he normally reads. If the reader encounters difficulties in reading, the researcher does not interfere but encourages the reader to do whatever is usually done when she or he reads alone. The reader is also told that upon finishing reading the text, she or he will be asked to retell the text.
3. After the oral reading, the reader retells the text as she or he understands and remembers it. The retelling can be done in the language most comfortable to the reader. In the first stage of the retelling, called unaided retelling, the reader freely recounts the events or story without being prompted. In the second stage, called aided retelling, the researcher asks the reader questions to clarify or to check comprehension. This retelling process serves not just as a comprehension check but also a channel for the reader to express any personal or extended understanding.
4. The miscues are marked in a specific way that allows reversion from markings to oral reading. This marking procedure is one big difference between miscue analysis and earlier error analysis studies because it brings fuller description of the reading and supports the underlying view that nothing that the reader does is haphazard (Murphy, 1999).
5. Miscues are coded according to their various relations to the expected responses from the original text: syntactic similarity, semantic similarity, meaning loss, correction, graphic similarity, and sound similarity. This coding is based on the underlying theories of miscue analysis, which hold that the reader actively uses different levels of language cues (graphophonic, lexical-grammar, semantics-pragmatics) and various comprehension strategies (initiating, predicting, confirming, referencing, sampling, correcting, etc.) to make sense of

the print.

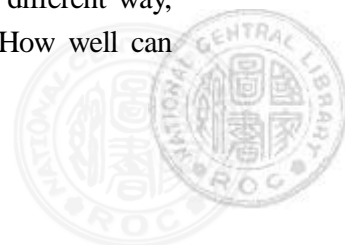
6. Miscue data can be analyzed both quantitatively and qualitatively. However, K. Goodman and his colleagues had emphasized that understanding the quality of miscues is more important than calculating their frequency. Y. Goodman had also said that “In miscue analysis, it is not the number of miscues that a reader makes that is important but the quality of those miscues” (1995, p. 4). From examining the miscues qualitatively, we are able to see the processes of reading and the reader’s efforts in meaning construction.

This is a rather brief description of the miscue analysis procedures; however, it provides necessary background for the following discussion about the validity and reliability of miscue analysis.

VALIDITY OF MISCUER ANALYSIS RESEARCH

Validity is “By far the most complex criterion of an effective test...” (Brown, 2004, p. 22). Simply put, a test is valid when it tests what it claims to test. It can also be defined as “the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment” (Gronlund, 1998, p. 226). The term “construct validity” has been used in recent years as an overarching term to refer to validity of tests, but empirical evidence in various forms is still needed to strengthen the validity of a test, and such evidence includes content validity and criterion-related validity, or concurrent validity (Hughes, 2003).

A reading test should test reading and not other abilities. In the introduction to this article, the question of how well the format and content of standardized tests reflect current reading theories is raised. People’s understanding of the nature of reading and reading theories has gone through changes in different periods of time (Pearson & Stehpen, 1995). Now it is generally accepted that a sound and comprehensive definition of reading takes into consideration the reader, the text, and the socio-cultural context of the reading event (Braunger & Lewis, 2006; K. Goodman, 1994; Pardo, 2004). To gauge the validity of miscue analysis as a research and assessment instrument, we need to know what beliefs and theories about reading miscue analysis incorporate. To put in a different way, what description about reading does miscue analysis provide? How well can



miscue analysis reveal the reader's reading performance? In what follows, this question is answered from different aspects.

First, Murphy (1999) tried to answer the question of what description of the reading process miscue analysis studies provide. She argued that the marking, coding, interpreting, and retelling procedures in miscue analysis allow a fuller description of reading than all earlier error analysis studies. Such descriptive comprehensiveness permits educators and researchers to see better the psycholinguistic processes of reading and the efforts of the reader in making sense. In the miscue example in Figure 1, the sixth-grade reader made a miscue on the second line where 為又ㄟ was replaced by the heteronym 為又ㄟ. The expected response (為又ㄟ) and the observed response (為又ㄟ) are the same character, but the substitution resulted in a syntactically and semantically unacceptable sentence. In the second miscue example in Figure 2, the third-grade reader made many omissions and substitutions. However, with careful analysis of the syntactic/semantic acceptability and graphic/sound similarity, it is easy to see that there was not much meaning loss in this reading. The miscues looked sloppy, but the reader was actually a risk taker in sampling cues and constructing meaning. While most reading tests provide scores that show the result of comprehension, miscue analysis allows the teacher/researcher to see the types of reading difficulties and strategies that describe the reader.

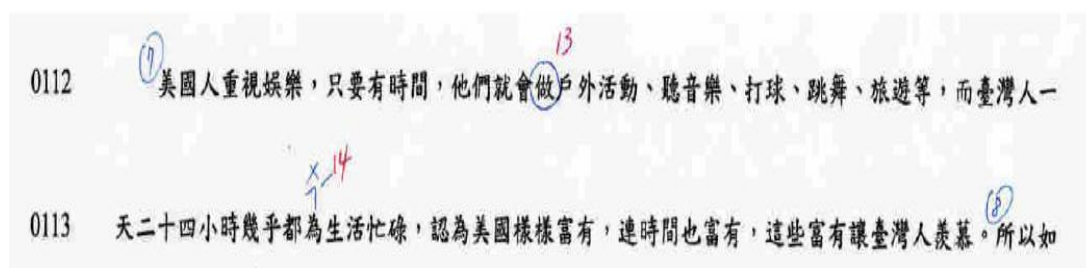


Figure 1. Chinese Miscue Examples of a Sixth-grader
(from 洪月女、林筱晴, 2010)



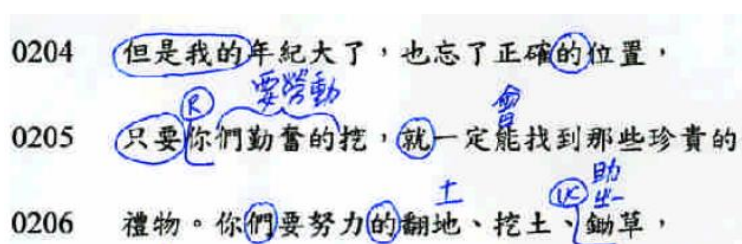
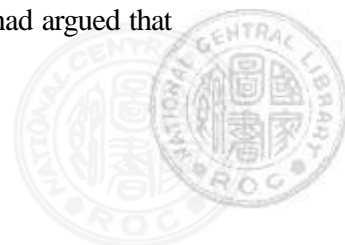


Figure 2. Chinese Miscue Examples of a Third-grader
(from 洪月女、林筱晴, 2010)

Second, miscue analysis is a direct test that examines the act of reading in real time. When used to evaluate or diagnose a reader's reading proficiency, miscue analysis is a type of direct testing that looks at the process of reading as it occurs in a relatively authentic situation. Sometimes labeled a performance-based evaluation, miscue analysis involves the reader in actually reading an authentic text of connected discourse. The reading task in a miscue analysis procedure resembles that in real life and provides valuable information about reading performance.

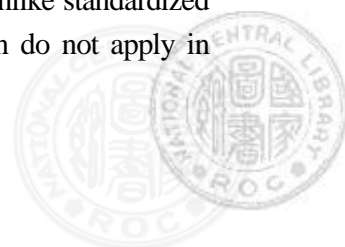
Third, one of the criticisms of miscue analysis is that observations and results about reading based on oral reading cannot describe silent reading. In other words, it is questioned whether competence that underlies oral reading comprehension can also underlie silent reading. Cunningham and Caplan (1982) found that studies in this area were inconclusive and therefore tried to answer the question about one-competence hypothesis, which was believed to concern the validity of miscue analysis, from a concurrent validity viewpoint. They tested the silent reading of elementary children using the cloze test format and found support for concurrent validity of miscue analysis as a measure of silent reading processes, at least for the syntactic and semantic categories. That is, students who showed a relative strength in syntactic and semantic processing when reading aloud in the miscue study also showed a corresponding relative strength in silent reading. Other studies (Beebe, 1980; Page, 1977) also provide support for a positive correlation between miscue analysis and silent reading measures. From these studies, it can be said that miscue analysis truly measures reading comprehension, be it silent or oral reading. K. Goodman (1994) had argued that



there is a universal reading process that explains both oral and silent reading and the reading of all different orthographies. No one can pry into a reader's head to examine what is going on when the reader is reading. While K. Goodman (1996) acknowledged that miscue analysis does not reveal all aspects of reading, he also argued that miscue analysis is a naturalist way of investigating reading and miscues provide lenses for us to see the psycholinguistic processes of meaning construction, which are similar in oral and silent reading.

Fourth, the educational and social implications of assessment are one important aspect of test validity. Messick (1988) had defined validity as “an inductive summary of both the adequacy of existing evidence for and the appropriateness of potential consequences of test interpretation and use” (pp. 33-34). In the four facets of validity discussed by Messick (1988), social consequences are part of the unified view of test validity. Miscue analysis, as a type of direct and performance-based assessment, allows the teacher/researcher to see first-hand the uses of language cues and comprehension strategies of the reader. From miscue analysis results, classroom teachers come to understand the active meaning construction processes in reading and learn to respect what readers do when they read. Y. Goodman (1996) talks about the power of miscue analysis and one of its derivatives, retrospective miscue analysis, in helping teachers to “revalue” the reader after teachers have seen what the reader attempts to do at reading. Miscue analysis encourages classroom teachers to reflect on literacy and on their teaching of reading (Davenport & Lauritzen, 2002). While most other standardized reading proficiency tests tell the teacher the results of their students' reading comprehension, miscue analysis shows the processes of reading and encourages teachers to reflect on their teaching, which in turn helps to bring about reactions and changes in their teaching. Therefore, it can be said that the consequential validity of miscue analysis is strong.

Finally, one common question to ask in test validation is how well test findings and results can be generalized to other types of populations. To answer this question, it is best to consider each miscue analysis a case study that involves a specific reader (with all the unique reader features such as reading proficiency, age, background knowledge, reading experiences, etc.) and a specific text (with all the unique language features such as style, rhetoric, length, topic, format, etc.). No two readers are the same, nor are any two reading texts. Unlike standardized tests, concepts of norm reference and bell-shaped distribution do not apply in



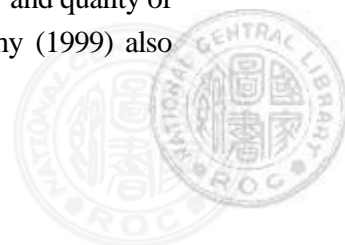
miscue analysis. Each reader and each text is unique. Differences in reading performance can be explained by the interface between the reader and the text. This is why Murphy (1999) commented that “users of miscue analysis must always be mindful of how generalizable their findings are to other contexts and situations” (p. 112). The question of generalizability, therefore, is not appropriate for miscue analysis, just like it is not for case studies. Instead, evidence for the validity of miscue analysis is established through the rigorous recording and careful observation of the oral reading and the consequential validity as discussed above.

In summary, the procedures of marking, coding, and retelling as well as its strong theoretical base of reading make miscue analysis a valid measurement of reading. Miscue analysis is a direct, performance-based assessment that examines the act of reading with authentic texts in a context close to real life reading. Although not a full description of reading, and probably no other reading assessment ever is, miscue analysis externalizes the comprehension processes of silent reading and provides windows on the reading processes. Miscue analysis has strong consequential validity because it helps teachers to revalue the reader and reflect on literacy and practice of reading. Finally, results of miscue analysis are not meant to be generalized to other readers or texts, because every reader and every text is unique.

RELIABILITY OF MISCUE ANALYSIS RESEARCH

Like the case for validity, different types of evidence are needed to support the reliability of a test. Such evidence might include student-related issues like the test taker’s consistency in their performance in repeated trials of the test and rater-related issues like the test giver’s consistency in administering the test and scoring the test results (Brown, 2004). In what follows, the issues of test-retest reliability and inter-rater reliability, among some others concerning the reliability of miscue analysis, are discussed.

First, the concept of test-retest reliability does not really apply in miscue analysis. This is so because every contact with a text influences the reader’s prior knowledge and familiarity with the language and contents of the text. Therefore, when the reader reads the same text for a second time, the quantity and quality of miscues will be different from those of the first reading. Murphy (1999) also

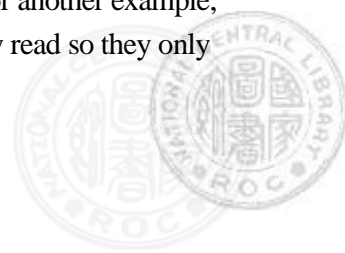


wrote that "...because the reader's knowledge of the text will have changed by virtue of having read it, the issue of consistency of performance would seem to be somewhat problematic" (p. 113). Therefore, inconsistency in the two reading performances of the same text should not be considered an indication of a lack of test reliability. Instead, such inconsistency should be considered "puzzles to be solved rather than indicators of invalid assessment practices" (Murphy, 1999, p. 113).

Second, the issue of inter-rater reliability is more complex to deal with in miscue analysis than in most other standardized tests. Although *Reading Miscue Inventory* (Y. Goodman, Watson, & Burke, 2005) provides the guidelines for marking and coding miscues, each teacher/researcher who codes the miscues might have different language sense and therefore code the same miscue differently. According to Murphy (1999), inter-rater agreement is usually good when individual miscue studies are considered. However, inter-rater agreements on individual coding categories (such as syntactic or semantic acceptability of sentences with miscues) are not as strong. This might be explained by the fact that sometimes very few miscues of particular types are produced and thus inter-rater reliability is affected. More broad scale studies on the coding of a specific category of miscues are called for to understand the inter-rater reliability of miscue analysis.

Third, miscue analysis is criticized by Alderson (2000) because of its subjectivity in the coding and interpreting process. Alternative and simplified versions of miscue analysis have been developed to help teachers to use it in the classroom setting (see, for example, Cunningham, 1984 and Wilde, 2000). In Hood's (1975) study of the inter-judge reliability for oral reading errors, she found that when judges were taught specific rules for counting and scoring errors, the inter-judge reliability was high. Therefore, training for teachers in reading processes, perceptions of reading, and the marking and coding of miscues will very possibly help to decrease the subjectivity in the analyses of miscues.

Last, one other issue concerning the reliability of miscue is the scoring of retelling as a measurement of reading comprehension. Multiple socio-cultural contexts of the reading event might affect the retelling performance. For example, if the reader is not familiar with the person who administers the miscue analysis or if the reader is shy, little might be reported at the retelling. For another example, the reader might feel the teacher/researcher has heard what they read so they only



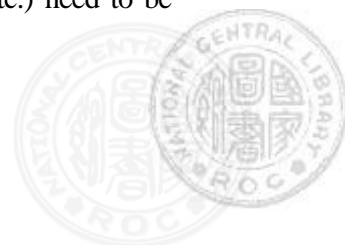
give an abstract of the text without providing details. Wilson, Martens, Arya and Jin (2007) have emphasized that retellings are not authentic activities, and the teacher/researcher needs to understand the theoretical perspective behind each retelling and scoring procedure to truly measure the reader's text comprehension.

In summary, the traditional concept of test-retest reliability does not seem to apply to miscue analysis. Having read the text once will change the reader's knowledge and familiarity with the text and therefore the reader might produce different types and numbers of miscues. Teacher training in reading processes and miscue coding procedures will help to achieve higher inter-rater reliability and reduce coding and interpreting subjectivity. Various socio-cultural contexts of reading will influence the reader's retelling performance, and therefore the teacher/researcher needs to be highly sensitive to subtle personal and socio-cultural contexts of miscue analysis studies and assessments.

SUGGESTIONS FOR POSSIBLE CONSOLIDATIONS

Based on the above discussion, we can see that there are both strong and inconclusive evidence of the validity and reliability of miscue analysis. Ideas for improvement were hinted in the above discussion, and now in what follows suggestions and possible ways to overcome the more inconclusive areas are discussed. These suggestions will help to consolidate the validity and reliability of miscue analysis.

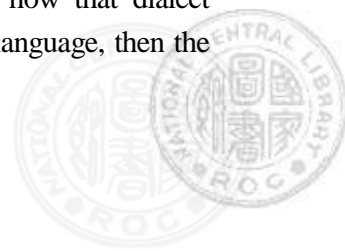
First, careful selection of reading material is crucial in miscue analysis. Besides the material selection guidelines suggested by Y. Goodman and her colleagues (Y. Goodman, Watson, & Burke, 2005), teachers and researchers need to pay careful attention to the objectives of their miscue analysis study and match the research questions or evaluation goals with the reader in order to produce meaningful findings about reading. A mismatch of text and reader might result in findings that do not answer the research questions or show the expected reading performance. For example, to understand how readers use background knowledge to make sense of what they read, it would not help to select a text with contents that the reader knows very little about. Reader factors (age, gender, reading proficiency, reading interests and habits, background knowledge, etc.) and text factors (length, genre, format, rhetoric, content, style, etc.) need to be carefully considered in miscue analysis studies.



Second, as mentioned earlier, both the reader's personal characteristics and the socio-cultural context of reading influence the retelling performance. The question of how to solicit more information in the retelling is a challenge for miscue analysis. Moreover, retelling should not be equated with comprehension. What the reader omits in the retelling is not necessary what is not understood. Reversely, what the reader reports in the retelling that seems unrelated to the text might be the deeper, personal interpretation of the text and suggest good comprehension. Instead of asking the reader to recount the contents of the text, various forms of "retelling" could be considered for checking comprehension to suit the purpose of the research or assessment. These forms might include, for example, question and answer format, drawing, comprehension test, or story grammar diagram. The teacher/researcher needs to be sensitive to the purpose of miscue analysis and choose a retelling that is most appropriate. For example, if checking comprehension is the goal, then retelling should not be a memory task. Personal understanding and interpretation of the story need to be valued in the retelling. If the reader is shy and reluctant to retell, then the format of question and answer might be more appropriate.

Third, the act of oral reading, not just the retelling, in miscue analysis is also subject to personal and socio-cultural context influences. For some readers, oral reading is equal to read aloud performance. For some others, especially older readers, oral reading is not the normal way to read and therefore meaning comprehension might be affected. Furthermore, different types and purposes of reading (reading to the self, reading to a friend or a teacher, reading to perform, reading to prepare for a test, reading to get information, etc.) might yield different miscue patterns. Again, teachers and researchers need to be aware of these cultural and social nuances in miscue analysis. What the teacher/researcher says to the reader before data collection is crucial. It is important to let the reader know that they should try to understand the text when they read aloud. If more than one reader is being evaluated, the instructions given before the read aloud should be the same across different readers.

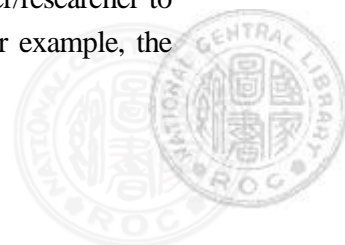
Fourth, to make the coding and analyses of miscues more accurate and depictive of the reader's reading ability, the teacher/researcher needs to be familiar with the reader's language. If the reader speaks a dialect, the teacher/researcher needs to know the dialect to understand how that dialect affects the reading. If the reader is reading her or his second language, then the



teacher/researcher needs to be familiar with the reader's interlanguage or characteristics of such reading. Separate marking or coding categories might be required to more accurately and fully represent the reading of certain language groups. For example, the past tense verb ending of <ed> is often dropped by Taiwanese English speakers in oral reading but understood when they read silently. If a reader constantly drops the consonant for the <ed> ending, then it should be considered a personal dialect and not an omission. For another example, Taiwanese students are taught in school English class that the definite article "the" is pronounced /ði/ when it precedes a word that begins with a vowel and pronounced /ðə/ when the following word begins with a consonant. If a reader is observed to change the pronunciation of "the" from /ði/ to /ðə/ or the other way around, we know that the reader is actively applying a rule learned in school and making a deliberate correction. Familiarity with the reader's language is necessary to come to such understanding.

Fifth, it is undeniable that the marking, coding, and analysis procedures of miscue analysis are time-consuming. However, without such procedures, miscue analysis would be no different from earlier error analysis studies where mistakes are counted and descriptions about reading are reached without further interpretation of the reader's reading processes and performance. Although it is quite simple to mark and count miscues, it is the coding, analysis, and interpretation of miscues that make miscue analysis a powerful instrument for research and assessment. Once again, the subjectivity of coding and analysis of miscues could be decreased by training the teacher/researcher to more fully understand the reading theories that underlie miscue analysis and the coding procedures.

Last, the marking of the intonation of the oral reading is an area that can be strengthened in miscue analysis. As Murphy (1999) observes, it is easier to code what has been read than how it is read. The difficulties in developing an annotation system for marking the prosody and intonation aspects of the oral reading are that, first, it is sometimes difficult to reach agreement on how something is read and, secondly, such an annotation system will make the miscue analysis procedure so complex as to be impractical as a classroom test. Nevertheless, the intonation and prosody of oral reading is one important aspect of meaning representation, and such information helps the teacher/researcher to understand how well the reader is making sense of the text. For example, the



omission of the short pause between “come” and “on” in the following sentence, “They usually come on the bus” may indicate a problem in syntactic processing. The teacher/researcher can be instructed to listen carefully for such prosodic information.

CONCLUSION

The purpose of the study was to discuss issues related to the validity and reliability of miscue analysis as a reading research tool and a reading assessment instrument. This is achieved by reviewing and synthesizing earlier and related literature on miscue analysis studies. Possible ways to consolidate the validity and reliability of miscue analysis are suggested, although they are not empirically tested.

In its history of close to a half century, miscue analysis has been used widely to understand various aspects of reading of a dozen or more different languages. Miscue analysis studies that concern the reading of the Chinese language or Taiwanese people’s reading of English have also been conducted and published. It is hoped that this study will help classroom teachers and researchers to understand miscue analysis better and develop the necessary professional knowledge to apply miscue analysis in the classroom setting or in their reading research.



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