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Evaluation of Reading Performances of Students with Reading Problems for the Risk of Learning Disabilities

Cevriye ERGÜL[a]
Ankara University

Abstract

In this study, the frequency of third grade students who have not acquired the grade level reading skills were examined and their reading skills were evaluated in terms of the risk for having learning disabilities. The study was carried out with 112 students in 38 classrooms. Teachers were asked to list the students with reading problems in their classrooms. Identified students were asked to read a grade level text. Students' reading fluency and accuracy were analyzed. Students in the study were assigned to one of the reading levels (frustration, instruction, and independent) based on the number of words read correctly in the text. Results showed that about 13% of students in participating classrooms were reported to have difficulty in reading. Reading fluency rates in all three reading levels were much lower than the reading fluency norms identified for third graders. Syllable repetition and incorrect reading were the most frequently made reading errors. Reading performances of participating students suggest that their reading difficulties are more likely resulted from the underlying learning disabilities. Limitations and implications for practice are discussed.

Key Words

Reading Problems, Risk Group, Learning Disabilities.

Reading difficulties are the most frequent learning problem among students and the main reason for academic failure (Chall, 1996; Dickinson & McCabe, 2001; Kuhn & Stahl, 2004; Rasinski & Hoffman, 2003). In a study conducted in the US to examine academic achievement of 4th grade students, it was found that 34% of students had reading difficulties and their reading performance fell behind their peers (National Assessment of Educational Progress, 2007). Longitudinal studies have shown that reading problems of students with reading difficulties continue throughout the school years (Dickinson & McCabe). Juel (1988), in a longitudinal study, found that 88% of students who are poor readers at the end of first grade remain poor readers in fourth grade. Cunningham and Stanovich (1997) who followed students from first grade through 11th grade determined that students' oral reading rate in first grade strongly predicts students' reading comprehension and vocabulary in 11th grade. Snow, Burns and Griffin (1998) found that 75% of students who experience reading problems in second grade continue to experience reading problems and fall behind their peers in fifth grade. In a study conducted by Babayiğit and Sainthorp (2010) it was found that children who are slow readers in first grade continue to be slow readers in second grade and make greater number of reading errors compared to their peers.

Students with reading difficulties are often diagnosed with learning disabilities (Miller, 1993; Stanford & Oakland, 2000). Learning disability is defined as a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language that may manifest itself in an imperfect ability to listen, think, speak,

a **Cevriye ERGÜL, Ph.D.**, is an assistant professor in special education. Her areas of specialization include learning disabilities, reading, early literacy, and transition of youth with special needs to adulthood. Correspondence: Ankara University, Faculty of Education Sciences, Department of Special Education, 06590, Cebeci, Ankara. E-mail: cergul@ankara.edu.tr Phone: +90 312 363 3350.

read, write, spell, or do mathematical calculations (Fuchs, Fuchs, Mathes, & Lipsey, 2000; Hamilton & Shinn, 2003; Stanford & Oakland, 2000). It is indicated that 10-15% of school age children have learning disabilities (Sundheim & Voeller, 2004). It is seen 68-80% more in boys than girls (Bingöl, 2003; Flannery, Liederman, Daly, & Schultz, 2000; Gökçe-Sarıpınar & Erden, 2010; Korkmazlar, 1992; Lerner, 2000; Razon, 1982; Rutter et al., 2004; Wheldall & Limbrick, 2010). It is a lifelong disability and negatively affects the development of all other developmental and academic areas (Lerner, 2000; Miller, 1993; Temple, 1993). On the other hand, if it is identified early and provided with effective intervention programs, students with learning disabilities can succeed in school and have a successful life (Bond, Tinker, Wasson, & Wasson, 1989; Flowers, Meyer, Lovato, Felton, & Wood, 2001; Hook, Macaruso, & Jones, 2001).

Early diagnosis is important for preventing reading difficulties (Miller, 1993; Serrano & Defior, 2008; Stanford & Oakland, 2000). Therefore, types of reading problems students with learning disabilities experience, in what developmental areas and how they differed from their typically-developing peers have been examined in many studies. For instance, Lovett (1987) investigated the development of reading skills and categorized students with learning disabilities into two groups based on the problems they are experiencing in the developmental phases of reading. While children learn word decoding in the first phase of reading development, they recognize words automatically without decoding in the second phase, and reach a maximum speed in recognizing words automatically in the third phase. Students may experience problems in any of these phases and be identified with learning disabilities. The first group described by Lovett includes students who cannot read correctly. These students experience difficulties in the first phase of reading development, make many reading errors, and read slowly due to their phonological deficits (Gökçe-Sarıpınar & Erden, 2010; Hook et al., 2001; Jenkins, Fuchs, Broek, Espin, & Deno, 2003; Rodrigo & Jimenez, 1999; Temple, 1987). Studies have shown that students in this group are 2.5-3 years behind their grade level (Badian, 1996; Krug, 1996; Lovett, 1987; Lovett, Steinbach, & Frijters, 2000; Meyer, Wood, Hart, & Felton, 1998; Wolf & Bowers, 1999). The second group described by Lovett includes students who can read correctly but cannot acquire fluency in their reading. These students experience difficulties in the second and third phases and their reading rates are at least 1.5 years behind their grade level (Badian, 1996; Jenkins et al., 2003; Klicpera & Schabmann, 1993; Krug, 1996; Lovett, 1987; Lovett et al., 2000; Meyer et al., 1998; Thaler, Ebner, Wimmer, & Landerl, 2004; Wolf & Bowers, 1999). Their slower access to phonological and lexical information, slower processing the orthographic information and slower integration of new information with the known mental representations impede to acquire reading fluency (Kuhn & Stahl, 2004; Lefly & Pennington, 1991; Lyon & Moats, 1997; Lyon, Shaywitz, & Shaywitz, 2003; Marcus, 1997; Meyer & Felton, 1999; Schwanenflugel, Meisinger, Wisenbaker, Kuhn, & Morris, 2006; Share & Stanovich, 1995; Shaywitz, 2003; Torgesen, Rashotte, & Alexander, 2001; Vellutino, Fletcher, Snowling, & Scanlon, 2004; Wagner, Torgesen, Laughon, Simmons, & Rashotte, 1993; Wolf, 1982; Wolf, Bowers, & Biddle, 2000).

Reading fluency is a strong predictor of reading comprehension and fluency assessment is effective method to identify learning disabilities (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Holopainen, Ahonen, & Lyytinen, 2001; Landerl, Wimmer, & Frith, 1997; Meisinger, Bloom, & Hynd, 2010; O'Connor, White, & Swanson, 2007; Spear-Swerling, 2006; Tressoldi, Stella, & Faggella, 2001; Vellutino, Scanlon, & Sipay, 1997; Wolf, 2001). Therefore, evaluation of students' reading fluency is found increasingly important (Fuchs et al., 2001; Good, Simmons, & Kame'enui, 2001; Hamilton & Shinn, 2003; Meisinger et al., 2010; Perfetti, 2007; Spear-Swerling, 2006). The main method of evaluating reading fluency is the counting number of words read correctly in one minute (Fuchs et al., 2001; Good et al., 2001; Hamilton & Shinn, 2003; Jenkins et al., 2003). Percent accuracy is also computed in this method to determine the reading level (Clay, 1985; Farris, Fuhler, & Walther, 2004; Johnson, Kress, & Pikulski, 1987; Lerner, 2000; Mercer & Mercer, 2005). Although some researchers has identified higher percent accuracy rates for reading levels (Bond et al., 1989; Ekwall & Shanker, 1998; Fry, 1972), the most frequently used percent accuracy rates describe reading levels as follows; when a student reads a text with a 95-100% accuracy, his/her reading level is determined as "independent"; when a student reads a text with a 90-94% accuracy, his/her reading level is determined as "instruction"; and when a student reads a text with a 89% and under accuracy, his/her reading level is determined as "frustration" (Clay, 1985; Farris et al., 2004; Johnson et al., 1987; Lerner, 2000; Mercer & Mercer, 2005; Rasinski, 2003).

Due to importance of reading skills for academic achievement, it is increasingly important to identify students who read inaccurately and slowly and intervene early in order to reduce their reading difficulties (Bruck, 1990; Flowers et al., 2001; Kuhn & Stahl, 2004; Lyon et al., 2003; Schwanenflugel et al., 2006; Torgesen et al., 2001). Third grade is a critical crossroad for this. If a student still reads inaccurately and slowly at the end of third grade, it is suggested to consider that student is possibly suffering from an underlying learning disability and refer him/her for evaluation to determine eligibility for special education services (Fuchs et al., 2000; Good et al., 2001; Jenkins et al., 2003; Lovett, 1987; Pikulski & Chard, 2005).

Nevertheless, learning disability is not a widely known special education category in our country (Bingöl, 2003; Erden, Kurdoğlu, & Uslu, 2002; Esen & Çiftçi, 1998). Number of students who are diagnosed with learning disabilities is limited. One of the reasons for that is the inadequacy of measures to identify learning disabilities (Arslan & Dirik, 2008; Bingöl, 2003; Erden et al., 2002; Gökçe-Sarıpınar & Erden, 2010). In addition, educators have inadequate and incorrect information on learning disabilities (Esen & Çiftçi, 1998). Therefore, many students with learning disabilities cannot be identified or cannot benefit from special education services. Also, crowded classrooms are a common problem in our country (Adıgüzel & Karacabey, 2010; Güçlü, 2002; Korkmaz, 2006; Öğülmüş & Özdemir, 1995; Topbaş & Toy, 2007; Yaman, 2009). In such classrooms, teachers cannot find enough time or appropriate environment to instruct the curriculum adequately, monitor their students' reading skills development, or provide supplemental instruction (Seven & Engin, 2006; Tutkun, 2002; Yaman, 2009). Finally, while examining the studies conducted in Turkey, it was found that although there are several studies examining reading performances of students with learning disabilities (Baydık, 2002; Baydık, Ergül, & Bahap Kudret, 2012; Bingöl, 2003; Çaycı & Demir, 2006; Gökçe-Sarıpınar & Erden, 2010; Güzel-Özmen, 2005; Karaman, Türkbay, & Gökçe, 2006), no study has been found examining reading performances of students who are not diagnosed with learning disabilities but experiencing reading problems. In this context, this study is designed to examine reading performances of students with reading problems and evaluate their reading performances in terms of the risk of learning disabilities.

Method

Research Design

This study was conducted through a relational model of screening.

Study Group

The study included 112 third graders from 13 elementary schools in low socioeconomic (low SES) neighborhoods. Children from low SES backgrounds were selected to be included in the study because they are more likely to be identified with learning disabilities compared to their peers from middle and high socioeconomic families and therefore, they are considered at-risk (Blair & Scott, 2002; Lonigan & Whitehurst, 1998; Torgesen, Wagner, & Rashotte, 1997). In order to select students, third grade teachers in participating schools were asked to determine three students with reading difficulties in their classrooms.

Measures

Teacher Interview Form and the Measure of Reading Fluency developed by the researcher were used in the study. Teacher Interview Form was used to obtain information on teachers and their students. To assess students' reading fluency and accuracy, a text in the third grade reading level was used. Students' reading fluency was assessed determining number of words read correctly in one minute (Pikulski & Chard, 2005). Students' percent accuracy was also assessed determining the frequency and types of reading errors made while reading. Percent accuracy was also used to determine the students' reading level.

Procedures

Assessment of students was completed individually in a quiet room in their school. Students were asked to read the text as fast and clear as they could. To measure the time a chronometer was used. The words students reached at the end of one minute were marked. All students were allowed to complete the text and reading errors they made were marked on the copy of the examiner. To evaluate reliability between examiners, a second examiner who was also expert in the area of reading and reading errors completed assessments for the 19% of the study group. Reliability between examiners was found .99 for the number of words read in one minute and .91 for the frequency of reading errors.

Data Analysis

The data obtained in the study were analyzed using descriptive analysis, One-Way Analysis of Variance, Tukey post-hoc, and Pearson product-moment correlation coefficient analyses. Effect sizes (Green & Salkind, 2005) were also computed.

Results

The frequency of third grade students with reading difficulties was found 13%. Frequency of students with reading difficulties was not correlated with number of students in the classroom. Analyses of reading performances of participating students showed that the mean number of words read correctly in one minute was 55.96 and the mean percent accuracy was 88.85%. Students' percent accuracy rates were used to assign them to one of the three groups. According to this, 26 students who read with 95-100% accuracy was assigned to the "independent" group; 39 students who read with 90-94% accuracy was assigned to the "instruction" group; and 46 students who read with 89% and under accuracy was assigned to "frustration" group. Groups' reading performances were compared using ANOVA and found that groups were significantly different from each other on the number of words read correctly in one minute and percent accuracy. Tukey post-hoc analyses indicated that frustration group obtained significantly lower scores than instruction and independent groups on both variables. However, although instruction group obtained lower scores than independent group, this reached significance only on the percent accuracy.

Reading errors made most frequently by the participants were the syllable repetition and incorrect reading followed by the word repetition, ending substitution, syllable omission, letter substitution, letter omission, and letter insertion. Frequency of self-correction of reading errors was 4.60. Frustration group received the highest frequency scores on all types of errors except for syllable repetition. The biggest difference among groups was on the incorrect reading. The mean frequency of incorrect reading for the frustration group was 14.98 while it was 4.18 for the instruction group and 1.54 for the independent group.

Discussion

Although frequency of third grade students with reading difficulties was similar to the findings of the previous research, high frequency of reading difficulties is noteworthy. Analysis of relationship between the frequency of reading difficulties and the total number of students in the classroom indicated no correlation between two variables. Although several research showed that crowded classrooms are highly associated with students' learning problems (Adıgüzel & Karacabey, 2010; Korkmaz, 2006; Öğülmüş & Özdemir, 1995; Seven & Engin, 2006; Tutkun, 2002; Yaman, 2009) findings of this study indicated that reading problems are not related to the class size. In this study, more boys than girls were identified as having reading difficulties. This finding is also compatible with the literature demonstrating that reading disabilities are seen more (68-80%) in boys than girls (Bingöl, 2003; Flannery et al., 2000; Gökçe-Sarıpınar & Erden, 2002; Korkmazlar, 1992; Lerner, 1993; Razon, 1982; Rutter et al., 2004; Wheldall & Limbrick, 2010).

Analysis of reading fluency rates of students participated in the study indicated that the mean fluency rate was 55.95 words a minute which was considerably below the norms of third grade level (88.66 found by Gökçe-Sarıpınar and Erden (2010) and 91.46 found by Erden et al. (2002)). Students' reading fluency performances were around the first grade level. Frustration group read 44 words a minute while instruction group read 62 words and independent group read 68 words a minute. Reading rates of all three groups was below the norm of third grade. Findings of this study are compatible with the types of reading difficulties identified by Lovett (1987) based on the developmental phases of reading skills. Frustration group in this study showed characteristics of the first group identified by Lovett as they read both slow and inaccurate. Reading performance of this group is also similar to the findings of previous research showing that students having difficulties in the first phase of reading development have reading skills about 2.5-3 years behind their grade level (Badian, 1996; Krug, 1996; Lovett et al., 2000; Meyer et al., 1998; Wolf & Bowers, 1999).

Instruction and independent groups which had 90% and above reading accuracy in this study showed the characteristics of students identified by Lovett who have difficulties in the second and third phases of reading development. Students in this group can read accurately at their grade level but they fall about 1.5 year behind their grade level in reading fluency. Although they can recognize words accurately their recognition process takes longer. They cannot recognize words automatically and need to decode words continuously while rea-

ding (Marcus, 1997; Wagner et al., 1993; Wolf, 1982; Wolf & Bowers, 1999; Wolf et al., 2000). Therefore, students in this group begin to feel failure and make errors when reading which result in difficulties with reading comprehension (Hamilton & Shinn, 2003; Jenkins et al., 2003; Spear-Swerling, 2006; Wolf et al., 2000). As a result, they are more likely referred for evaluation for special education services (Bruck, 1990; Fuchs et al., 2000; Good et al., 2001; Jenkins et al., 2003; Lovett, 1987; Pikulski & Chard, 2005).

Reading performances of students in this study are similar to reading performances of students identified with learning disabilities and having reading difficulties (Gökçe-Sarıpınar & Erden 2010; Jenkins et al., 2003). Therefore, it is believed that reading difficulties experienced by the participants of this study especially by those in the frustration group are most probably resulted from underlying learning disabilities. As a result, it is appropriate to recommend that these students need to be urgently referred for evaluation and provided with special education services. In addition, as frequently stated in the literature, inability to acquire reading fluency can be considered as an indicator of learning disabilities. Therefore, it is highly recommended to utilize reading fluency assessment to identify students at-risk for learning disabilities and monitor the effects of intervention programs.

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