The Effects of Nursery Rhymes on Improving Reading Fluency of Fourth-Grade Primary School Students*

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Abstract

This study aimed to determine the effects of nursery rhymes, entertaining and prominent products of Turkish folk literature, on improving reading fluency of fourth-grade primary school students. The sample consisted of 44 fourth graders, attending a public primary school in Vakfikebir County of Trabzon province (Turkey) in the 2015-2016 academic year. The sample was grouped into two, namely an experiment and a control group and the students were randomly assigned to the groups. The texts selected for the purpose of the study, were firstly read by the students and they were voice-recorded as they read out before the study was carried out. Their reading rates were measured relying on the recordings by counting the number of words they read per minute, while their reading levels were determined with Error Analysis Inventory and the prosodic features were measured using the Prosodic Reading Scale. Then, the activities involving nursery rhymes were administered to the experimental group for 15 weeks, who were offered two activities per week, while the students in the control group continued their regular education. After the administrations, the measurements were repeated asking the students to read the same texts. The reading rate scores, the accurate reading scores and the data obtained from the Prosodic Reading Scale were analyzed with SPSS, a statistical software program by performing paired samples t-test and independent groups *t*-test. The results showed that the reading rates and the accurate reading skills of the students in the experimental group improved. The implications of the findings are discussed and suggestions are made at the end.

Keywords: Nursery Rhymes, Reading Fluency, Reading Accuracy, Reading Rate, Prosody

Introduction

Reading skill occupies an essential place in people's lives as education necessitates the development of this skill as well as using it as a life-long learning instrument. It is a complicated mental process that requires various other skills and procedures (Güneş, 2007). This process must be managed well for successful reading. Reading fluency is extremely important in this process. In the National Reading Panel (NRP, 2000), reading fluency was regarded as the fundamental component of being a successful reader. Similarly, a great many researchers consider reading fluency one of the crucial elements of successful reading (Baştuğ & Akyol, 2012; Denton et al., 2011; Kim, Wagner, & Foster, 2011; Kuhn, Schwanenflugel, & Meisinger, 2010; Yıldız et al., 2014)

The Turkish education system has maintained a considerable interest in the field of reading fluency over the last years. In the Turkish curriculum, renewed in 2005, the importance of the acquisition of reading fluency was emphasized (MoNE [Ministry of National Education], 2005). By doing so it was intended to support students in vocalizing letters, syllables, and words effortlessly, reading fluently and accurately, and understanding what they read (MoNE, 2019). In order to achieve these outcomes, fluent reading skills must be acquired.

Reading fluency is achieved by focusing on punctuation marks, emphasis, intonation, and semantic units and by avoiding word repetitions and unnecessary pauses (Akyol, 2018). In brief, reading fluency is defined as reading a text accurately and at an optimum speed by automatically recognizing the words (Nunez, 2009). It depends on three different reading skills that affect each other (Baştuğ & Akyol, 2012). These are accurate reading, reading rate, and prosodic reading.

Accurate reading is the first step required by reading fluency. It is also called word recognition. Word recognition refers to the process of deciphering words' sounds and meaning (Koda, 2005). It is difficult, if not impossible, for reading comprehension to improve without the development of word recognition skill. Likewise, Baştuğ and Akyol (2012) point out that for optimal reading comprehension, learners should be motivated to improve their word recognition skill since it is deemed to be the precondition and essential factor for fluent reading. Individuals who cannot acquire these skills will experience difficulties concerning reading rates and prosodic reading in the following steps of education.

The second step of reading fluency is reading rate, which is defined as the duration from seeing and recognizing a word to reading it audibly or inaudibly (Baştuğ & Akyol, 2012). In other words, it means reading a text at an optimum rate. It also refers to automaticity in reading. Automatized reading means reading words quickly and smoothly with minimum effort and by paying the least amount of attention. By doing so, words can be recognized quickly and accurately and the text can be comprehended quickly. Reading should become automatic for a better reading comprehension. Because when a text is read intermittently, semantic units cannot be formed and semantic relationships in a sentence and between sentences cannot be comprehended. Automatism is a required component for prosody (Başaran, 2013, p. 279).

The last dimension of reading fluency is prosodic reading, which is defined as reading a text naturally and concordantly. The prosodic reading skill requires intonation, emphasizing, and lowering and raising one's voice according to meaning and paying attention to punctuation marks, semantic units, and syntax (Keskin, 2012). Prosody is referred to as intonation and rhythm in colloquial language and in this aspect, prosody is also known as the music of language (Kuhn et al.,

2010). It is important to perceive this music in prosodic reading. "It can be stated that the closer prosodic skill of reading gets to prosodic skill in colloquial language, the better reading and thus comprehending would be." (Keskin, 2012, p. 33). It is reported in the literature that there is a mutual relationship between the prosodic reading skill and comprehension and prosody has the closest relationship with reading comprehension compared to other fluency-related reading skills (Başaran, 2013; Yıldız, Yıldırım, Ateş, & Çetinkaya, 2009). Therefore, prosodic reading is considered to be the main indicator of reading comprehension.

The procedures mentioned above should be implemented concomitantly in order to achieve reading fluency. Without word recognition process, proper reading fluency and prosodic reading would be challenging to achieve. Intermittent reading prevents reader from establishing a relationship between words and sentences (Yıldız, 2013). In other words, text integration does not occur in reader's mind (Koda, 2005). Individuals who cannot acquire these skills may experience difficulty in reading comprehension. There might be a decrease in their desire to read and they may have difficulty developing reading habits (Akyol, 2012). According to Kuhn and Stahl (2004), honed fluent-related reading skills in primary school education can prevent academic failure likely to emerge in future. The skill of fluent reading cannot be improved straight after the acquisition of basic reading skills. Reading fluency can be improved with various activities, constant repetitions, and going through a certain process (Çayır & Ulusoy, 2014). However, previous research states that there is an absence of professional practices that act as tools to acquire these skills in classroom environment, fluent reading skills are neglected, and students experience difficulties in acquiring these skills (Baştuğ, 2012; Keskin, 2012; Sidekli, 2010; Yılmaz, 2006). It is possible to prevent such failures in the subsequent grades if different activities are applied to eliminate reading deficiencies that have been determined in the primary school period by taking the necessary precautions.

There are several studies in the literature about the elimination of reading deficiencies and the improvement of reading fluency (Çayır & Ulusoy, 2014; Kaya & Yıldırım, 2016; Keskin & Akyol, 2014; Keskin & Baştuğu, 2012; Rasinski, Yıldırım, & Nageldinger, 2011; Yıldırım, Ritz, Akyol, & Rasinski, 2015; Yıldırım, Çetinkaya & Ateş, 2009). These studies discuss the relationship between reading fluency and comprehension, the repetitive reading method, programs to improve fluency, structured education of reading fluency and genre-based reading fluency. Several techniques and education practices have been adopted to improve reading fluency; however, nursery rhymes have not been used for this purpose.

When learning to read and write, which are the most important skills acquired in primary school, nursery rhymes are frequently used. Nursery rhymes, which can be listed among the prominent products of Turkish folk literature and a genre that students encounter at an early age, know well, and enjoy reciting, are used in activities that aim to promote reading and help them acquire the skill of accurate reading - one of the components of reading fluently - by eliminating pronunciation mistakes. Furthermore, the melodious structure of nursery rhymes allows for the acquisition of prosodic reading, which is a fluency-related reading skill. By offering activities that involve nursery rhymes, the aim is to make students eager for reading and help them acquire fluent reading skills (Çer, 2016).

Children use different linguistic elements when they sing nursery rhymes. The harmony in the pronunciation of nursery rhymes makes students eager to take part in the activities (Dilci & Gür, 2012; Erdem, Şengül, Gün, & Büyükaslan, 2015). They become more disposed to learning their native language due to this property of theirs (Önal, 2009). Nursery rhymes support students in acquiring reading and fluent reading skills

(Ungan, 2009). Putting emphasis on learning nursery rhymes and offering linguistic activities using nursery rhymes in primary schools would be beneficial for children in terms of language development (Kurudayıoğlu & Potur, 2015). Nursery rhymes are products that ensure students encounter different words, develop their reading and speaking skills, and support them in recognizing the possibilities of a language (Toker, 2011). Furthermore, it is stated that children can learn phonetics through games, nursery rhymes, and rhythmic activities and that the phonological awareness of children aged 5 to 7 years who memorize nursery rhymes increases (NAEYC, 2008).

Humor and tautophony in nursery rhymes catch the attention of students and make them more motivated to read nursery rhymes. Their unconscious exposure to tautophony prevents them from making pronunciation mistakes as they read. Nursery rhymes can be used to eliminate the problems encountered in word recognition, which is an indispensable component of reading fluency. Özkaya (2012) has revealed that learning nursery rhymes is highly effective in eliminating the problems encountered during reading.

Additionally, when students learn nursery rhymes, they not only have fun (Gunning, 2000) but also perform language practices. Nursery rhymes, which can be used for children with poor vocabulary and unable to complete their language development, are beneficial in terms of correct pronunciation (Dedeoğlu-Orhun, 2009; Yıllar & Turan, 2015).

Students add numerous words to their vocabulary by reciting nursery rhymes and by doing so they expand their vocabulary. In the first step, nursery rhymes can be utilized to work on sounds that children have difficulty pronouncing. Children pronounce sounds and words more accurately as they recite nursery rhymes (Tosunoğlu & Melanlıoğlu, 2006). Nursery rhymes, which contain both meaningful and meaningless words, ensure that students learn the correct pronunciation of a word in an entertaining and unusual fashion. The desire students have for reading increases as they learn new words and pronounce words better. This desire, in turn, contributes to the improvement of their reading skills. As students generally do not read words they do not recognize, They cannot comprehend the relationship between symbols and sounds, confuse words or letters, have difficulty spelling, change the order of, add to or remove the letters in a sentence and change or repeat words (Akyol, 2003).

Reading and reciting nursery rhymes play a significant part in the development of such features as pronunciation, intonation, emphasis, and articulation that are required for reading and speaking. It is difficult to recite nursery rhymes which are comprised of repetitions, tautophony, and associations. Students acquire the correct articulation of sounds and words and fluent speaking with nursery rhymes (Sever, Kaya, & Aslan, 2017). Word recognition skills of students are related to phonetics. Nursery rhymes have an important role in the accurate pronunciation of words. Students learn how to articulate vocals and pronounce words quickly as they recite nursery rhymes.

Most of the studies in the related literature have been conducted on the use of nursery rhymes in Turkish language teaching, particularly in speech training and teaching Turkish as a foreign language (Gökkaya, 2008; Gürbüz, 2004; Kurudayıoğlu & Potur, 2015; Önal, 2002; Sarıca, 2012; Ungan, 2009). However, in a study conducted on the improvement of fluent reading skills of third-grade students (Aşıkcan, 2019), nursery rhymes have been used, and it is stated that students recite difficult-to-pronounce nursery rhymes eagerly, easily, and fluently. In this context, it is considered that activities in which nursery rhymes are frequently used could improve fluent reading skills of students.

The aim of the present study was to answer the question "Do nursery rhymes have an effect on improving reading fluency of fourth-grade primary school students?" Accordingly, the answers to the following questions were also sought.

1. Do the activities involving nursery rhymes affect the reading rates, reading accuracy, and prosodic reading skills of students in the experimental group?

2. Is there a significant difference between the pre-test and post-test reading rates, reading accuracy, and prosodic reading scores of the control group?

3. Is there a significant difference between the pre-test and post-test reading rates, reading accuracy, and prosodic reading scores of the control and experimental group?

4. Is there a significant difference between the reading rates, reading accuracy, and prosodic reading scores of the control and experimental group? (Paired samples *t*-test)

Method

This section features the study design, sample, data collection tools, data collection, and data analysis.

Study Design

In this study a quasi-experimental design - an quantitative research method - was used. In quasi-experimental studies, an experimental group and a control group are impartially isolated from an existent group instead of creating artificial groups. In this sense, the authors of the present study created an experimental group and a control group out of the fourth-grade students of the school where the study was conducted.

The pretest-post-test non-equivalent group design, regarded as the most common semi-experimental design, was used in the study. In this design, the experimental and control groups are assigned. Both groups are given a pre-test and post-test and only experimental group receives the treatment (Creswell, 2016).

Study Group

The sample consisted of 44 fourth-grade students attending to a public primary school located in Vakfıkebir county of Trabzon province, Turkey, in the 2015-2016 academic year. The random sampling method, a probability sampling method, was adopted to produce the sample. Acquisition of a high level of reading fluency is available in the Turkish curriculum as an objective as of the second grade. The fourth grade is the final year of primary education and it is required for students who will attend secondary school to acquire an advanced level of reading fluency. As mentioned above, conducting studies on the determination and elimination of problems related to reading fluency in primary school could prevent academic failure that may occur in future education processes. In this context, the present study was conducted on fourth graders who were in the final year of their primary education and it was aimed to help them acquire and improve this skill before they start secondary school.

Activities including nursery rhymes were offered the students in the experimental group over 15 weeks and the effects of these activities on the reading rates, reading accuracy, and prosodic reading skills of these students were investigated. The experimental group consisted of 22 students (12 females and 10 males), while the control group to of 22 students (8 females and 14 males). No students were excluded from the analyses.

Data Collection

This section presents how the data were collected and what the data collection tools are.

Data Collection and Data Collection Tools

In this study, activities incorporating nursery rhymes were offered the students in the experimental group in 2-hour courses weekly for 15 weeks. Such parameters as aim, time management, classroom use, classroom organization, students' preliminary information, comprehension, suitability of materials, teachers' and students' rules, students' roles, difficulties experienced by students, assessment and evaluation, and flexibility (Özmantar & Bingölbali, 2009) were considered while designing the activities. The activities were incorporated into the daily lesson plans in accordance with the research aim. The activities with nursery rhymes, which were developed by the researcher, were linked with the acquisitions in the Turkish course curriculum. They were developed in consideration of the aimed skills and acquisitions for the 2015 Turkish course curriculum of the Ministry of National Education. Nursery rhymes, which are also known as fallacies and twists, were used in the activities to eliminate pronunciation problems.

The parents, the principals, and the classroom teachers of the participating fourth graders in the control group were informed about the study before it was launched. The participation was voluntary and the participating students were also informed about the content of the study. The permissions were obtained from the parents for the video recordings carried out for the purpose of the study. The audible readings conducted before and after the practices were performed with each student individually. The students were in no way guided by the researcher before the reading practice. They were encouraged to start reading when they felt ready. The researcher followed the reading of the students with the guide text and video-recorded them while they were reading. As each student volunteered for the study and performed the reading practice accompanied by his/her teacher, it was observed that they were comfortable while reading.

A text that the students had never encountered before, unavailable in the Turkish coursebooks, published by a different publishing house, and approved by the Ministry of National Education was used in order to collect the study data. To determine the most suitable nursery rhymes for the fourth-grade students, the opinions of two classroom teachers, a Turkish language teacher and an expert academician, were considered. The chosen texts were read by the students in both groups in order to determine their reading rates and reading accuracy percentages and this process was recorded by a video recorder. The students in the experimental group adopted different reading fluency strategies, methods, and techniques in 78 different nursery rhymes with various alliterations as the activities were performed and attempted to recite each nursery rhyme. The students were made to read the texts after they had participated in the activities involving nursery rhymes and the readings were recorded in order to determine the effect of nursery rhymes on their reading fluency. The data obtained before and after the treatment with a video recorded were analysed with a computer.

The students in the control group performed the reading and listening activities in the Turkish language coursebooks. The classroom teacher of the students in the control group did not have recourse to any special methods, techniques, strategies, or activities that would improve the reading fluency of the students apart from those available in the coursebooks. Since the texts used in the study were found in a Turkish coursebook by a different publishing house and

were not used in the Turkish courses of the school of the students in the experimental group, the control group did not perform any activities based on this text. Furthermore, the students in the control group did not do any nursery rhyme readings.

One of the three components of fluent reading is reading rate. In this study, the number of accurate words per minute was considered as the reading rate. Only the number of words read accurately was evaluated, thus allowing to exclude the readings that students would intentionally or mistakenly read. Thus, in order to evaluate the reading rates, the mistakes were subtracted from the number of total words read. This method, the reliability and validity of which were accepted, is known as a program-based measurement approach and is considered a strong indicator of reading-aloud fluency (Keskin, 2012). In this method, the suitable texts are read aloud for one minute and the reading is recorded by a video recorder. When one minute is over, the number of the read words are counted, the misread words are determined, and the number of words read accurately is found by extracting the misread words from the number of total words (Akyol, 2014; Baştuğ, 2012; Keskin, 2012). In this study, the audible readings of the students were recorded and a guide text was developed in which the number of words in each line was written at the end of the line in order to determine the reading rate. The video recording of each student was reviewed, the lines that the students read in the guide text in one minute were determined, and the number of the total read words was found. Then, the misreadings were determined by watching the video recording of each student several times. The required calculations were made by processing the number of the total read words and the misreadings with a computer.

Another component that facilitates reading fluency is accurate reading. It is stated in the literature that experiencing difficulty in reading accurately also negatively affects fluent reading and it is required to exhibit accurate reading in order to perform fluent reading (Akyol, 2014; Baştuğ, 2012; Keskin, 2012). Audible reading, which is recording the reading process and determining the number of the total read words, and misreadings by listening to the recorded readings form the basis of accurate reading. The number of the misread words is extracted from the number of the total read words and thus the number of the accurately read words is determined. Since reading accuracy is expressed as the accurate reading percentage, the number of accurately read words is divided by the number of the total read words and the result is multiplied by 100 and thus the reading accuracy percentage is determined. The accurate reading percentage is formulated as "Number of accurately read words/number of total read words X 100 = reading accuracy percentage". The reading accuracy percentage allows to classify students' levels into three, i.e. free level, education level, and anxiety level (Baştuğ, 2012; Keskin, 2012). In this study, the video recordings of the students were viewed repeatedly in order to determine the accurate reading percentages and the data were typed in a computer to perform the necessary calculations.

It is required to determine the mistakes of the students in audible readings for the measurement of reading rate and reading accuracy. In this study the Error Analysis Inventory, which was adapted for Turkish academic works by Akyol (2012) and includes error types such as repetitions, skips, additions, reversing, alterations, and misreads in order to determine the audible misreadings, was used. The words with these mistakes were regarded as misreadings and extracted from the number of the total read words.

Data Analysis

The data that were obtained from the measurement tools were analysed with SPSS 22, a statistical analysis program, and depending on the sub-problems of the study the independ-

ent samples *t*-test (third and fourth sub-problems) and paired samples *t*-test (first and second sub-problems) were used in the analyses of the data.

The paired samples *t*-test, a parametric statistical analysis test, was used for the dependent samples in order to determine whether there was a statistically significant difference between the averages of the values concerning the fluent reading skills that were obtained as a result of the separate pre-test and post-test measurements from the experimental and control groups. The independent samples *t*-test was used to determine whether there was a statistically significant difference between the averages of the values of the fluent reading skills that were obtained as a result of the pre-tests and post-tests of the experimental and control groups.

The effect size values were calculated to be able to make accurate decisions about the obtained results by removing the results arising from the number of the samples used in the study (Özsoy & Özsoy, 2013). Cohen's *d* statistic was also used in this study. Regardless of the notation, Cohen's *d* value was interpreted as small, medium, and large effect size if the values were 0.2, 0.5, and 0.8, respectively (Cohen, 1988). In determining the significant difference, *p* value was accepted to be .05.

Findings

In this section, the results of the pre-tests and post-tests of the experimental and control groups that were analysed in order to find answers to the questions determined as the sub-purposes of the study and the interpretations of these results are provided.

Findings Related to the Sub-Problems of the Study

The findings related to the sub-problem "Do the activities involving nursery rhymes affect the reading rates, reading accuracy, and prosodic reading skills of the students in the experimental group?":

Table 1. *Paired samples t-test results of the pre-test and post-test reading rate scores of the experimental group*

Experimental Group	N	Mean	SD	df	t	p
Pre-Test	22	78.45	23.89	21	-14.46	.001
Post-Test	22	102.18	26.66			

p < .05

According to the results of the paired samples *t*-test, based on which the effect of the activities with nursery rhymes on the reading rate was researched, a significant difference was observed between the average reading rate scores before the activities ($M_{pre-test}$ = 78.45) and the average reading rate scores after the treatment ($M_{post-test}$ = 102.18) ($t_{(22)}$ = -14.46; *p* < .05). The effect size calculated in the test (*d* = 2.4) indicated that this difference was substantially high (Cohen, 1988). This manifested that the activities that included nursery rhymes, which were performed in the experimental group, had a significant effect on the reading rates.

Table 2. *Paired samples t-test results of the pre-test and post-test accurate reading scores of the experimental group*

Experimental Group	N	Mean	SD	df	t	p
Pre-Test	22	90.67	6.18	21	-6.03	.001
Post-Test	22	95.89	3.37			

p < .05

According to the results of the paired samples *t*-test, based on which the effect of the activities with nursery rhymes on the

accurate reading was researched, a significant difference was observed between the average accurate reading scores before the activities ($M_{pre\text{-}test}$ = 90.67) and the average accurate reading scores after the application ($M_{post\text{-}test}$ = 95.89) ($t_{(22)}$ = -6.03; p < .05). The effect size calculated in the test (d = 1.2) indicated that this difference was considerably high (Cohen, 1988). This indicated that the activities incorporating nursery rhymes, which were performed in the experimental group, had a significant effect on accurate reading.

Table 3. *Paired samples t-test results of the pre-test and post-test prosodic reading scores of the experimental group*

Experimental Group	N	Mean	SD	df	t	p
Pre-Test	22	2.13	0.56	22	2.85	0.42
Post-Test	22	2.85	0.42			

p < .05

According to the results of the paired samples *t*-test, which was conducted in order to determine whether or not there was a difference between the prosodic reading scores before and after the treatment of nursery rhymes, a significant difference was observed between the average prosodic reading scores before the activities ($M_{pre\text{-}test}$ = 2.13) and the average prosodic reading scores after the activities ($M_{post\text{-}test}$ = 2.85) ($t_{(22)}$ = -8.73; p < .05). The effect size calculated in the test (d= 1.2) indicated that this difference was very high (Cohen, 1988), which revealed that the activities that included nursery rhymes and were performed in the experimental group had a significant effect on prosodic reading.

The findings regarding the sub-problem "Is there a significant difference between the pre-test and post-test reading rates, reading accuracy, and prosodic reading scores of the control group?":

Table 4. *Paired samples t-test results of the pre-test and post-test reading rate scores of the control group*

Experimental Group	N	Mean	SD	df	t	p
Pre-Test	22	72.54	14.24	21	.616	.545
Post-Test	22	71.68	12.66			

p < .05

In Table 4, the *t*-test results of the pre-test and post-test reading rate scores of the control group are given. According to these results, there were no significant differences between the pre-test and post-test reading rate scores of the control group ($t_{(22)}$ = .616; p > .05). The average reading rate scores of the control group from the pre-test were calculated to be ($M_{(pre\text{-}test)}$ = 72.54), while the average reading rate scores from the post-test to be ($M_{(post\text{-}test)}$ = 71.68)

Table 5. *Paired samples t-test results of the pre-test and post-test accurate reading scores of the control group*

Experimental Group	N	Mean	SD	df	t	p
Pre-Test	22	92.20	4.88	21	.583	.566
Post-Test	22	91.64	5.43			

p < .05

In Table 5, the *t*-test results of the pre-test and post-test accurate reading scores of the control group are given. According to the results, no significant differences were found between the pre-test and post-test accurate reading scores of the control group ($t_{(22)}$ = .583; p > .05). The average accurate reading scores of the control group from the pre-test were calculated to be ($M_{pre\text{-}test}$ = 92.20) and the average accurate reading scores from the post-test to be ($M_{(post\text{-}test)}$ = 91.64)

Table 6. *Paired samples t-test results of the pre-test and post-test prosodic reading scores of the control group*

Experimental Group	N	Mean	SD	df	t	p
Pre-Test	22	2.27	0.62	21	1.103	.282
Post-Test	22	2.20	0.59			

p < .05

In Table 6, the *t*-test results of the pre-test and post-test prosodic reading scores of the control group are given. According to these results, there were no significant differences between the pre-test and post-test prosodic reading scores of the control group ($t_{(22)}$ = 1.103; p>.05). The average prosodic reading scores of the control group from the pre-test were calculated to be ($M_{(pre\text{-}test)}$ = 2.27), while the average prosodic reading scores from the post-test to be ($M_{(post\text{-}test)}$ = 2.20)

The findings on the sub-problem of "Is there a significant difference between the pre-test and post-test reading rates, reading accuracy, and prosodic reading scores of the control and experimental group?":

Table 7. *Independent samples t-test results of the pre-test reading rate scores of the experimental group and the control group*

Group	N	Mean	SD	df	t	p
Experimental	22	78.45	23.89	42	.-997	.325
Control	22	72.45	14.24			

p < .05

In Table 7, the *t*-test results of the pre-test reading rate scores of the experimental and the control group are given. According to the results, no significant difference was determined between the pre-test reading rate scores of the experimental and control groups (t*(42)* = .-997; p > .05). The averages reading rate scores of the groups were calculated to be (*M* = 78.45) for the experimental group and (*M* = 72.45) for the control group.

The fact that there were no significant differences between the pre-test reading rate scores of the experimental and the control group indicated that the reading rates of the groups were similar before the application.

Table 8. *Independent samples t-test results of the pre-test accurate reading scores of the experimental group and the control group*

Group	N	Mean	SD	df	t	p
Experimental	22	78.45	23.89	42	.-997	.325
Control	22	72.45	14.24			

p < .05

In Table 8, the t-test results of the pre-test accurate reading scores of the experimental and control groups are given. According to these results, there were no significant differences between the accurate reading scores of the groups ($t_{(42)}$ = .908; p > .05). The averages of the accurate reading scores of the groups were calculated to be (*M* = 90.67) for the experimental group and (*M* = 92.20) for the control group.

The fact that there were no significant differences between the pre-test accurate reading scores of the experimental and the control group indicated that the accurate reading levels of the groups were similar before the application.

In Table 9, the t-test results of the pre-test prosodic reading scores of the experimental and control groups are given. According to the results, there were no significant differences between the prosodic reading scores of the experimental and control groups ($t_{(42)}$ = .772; p > .05). The averages of pro-

sodic reading scores of the groups were calculated to be (*M* = 2.13) for the experimental group and (*M* = 2.27) for the control group.

Table 9. *Independent samples t-test results of the pre-test prosodic reading scores of the experimental group and the control group*

Group	N	Mean	SD	df	t	p
Experimental	22	2.13	.568	42	.772	.444
Control	22	2.27	.628			

p < .05

The fact that there were no significant differences between the pre-test prosodic reading scores of the experimental and the control group indicated that the prosodic reading scores of the groups were similar before the application.

The findings regarding the sub-problem "Is there a significant difference between the post-test reading rates, reading accuracy, and prosodic reading scores of the control and experimental group?":

Table 10. *Independent samples t-test results of the post-test reading rate scores of the experimental and control group*

Group	N	Mean	SD	df	t	p
Experimental	22	102.18	26.66	42	-4.847	.001
Control	22	71.68	12.66			

p < .05

According to the results of the paired samples *t*-test, which was conducted in order to reveal whether the activities involving nursery rhymes had a significant effect on the reading rates, a significant difference was observed between the average test scores of the students in the experimental group ($M_{(experimental)}$ = 102.18) and the average test scores of the students in the control group ($M_{(control)}$ = 71.68) ($t_{(42)}$ = -4.847; *p* < .05). Accordingly, it can be stated that the activities that involved nursery rhymes had a significant effect on the reading rates.

Table 11. *Independent samples t-test results of the post-test accurate reading scores of the experimental group and the control group*

Group	N	Mean	SD	df	t	p
Experimental	22	95.89	3.37	42	-3.118	.003
Control	22	91.64	5.43			

p < .05

According to the results of the paired samples *t*-test, which was conducted in order to reveal whether the activities incorporating nursery rhymes had a significant effect on accurate reading, a significant difference was observed between the average test scores of the students in the experimental group ($M_{(experimental)}$ = 95.89) and the average test scores of the students in the control group ($M_{(control)}$ = 91.64) ($t_{(42)}$ = -3.118; *p* < .05). Accordingly, it can be stated that the activities had a significant effect on accurate reading.

Table 12. *Independent samples t-test results of the post-test prosodic reading scores of the experimental group and the control group*

Group	N	Mean	SD	df	t	p
Experimental	22	2.85	.420	42	-4.181	.001
Control	22	2.20	.593			

p < .05

According to the results of the paired samples *t*-test, which was conducted in order to reveal whether activities with nursery rhymes had a significant effect on prosodic reading, a significant difference was observed between the average test

scores of the students in the experimental group ($M_{(experimental)}$= 2.85) and the average test scores of the students in the control group ($M_{(control)}$ = 2.20) ($t_{(42)}$ = -4.181; *p* < .05). Accordingly, it can be stated that such activities had a significant effect on accurate reading.

Conclusion and Discussion

This study aimed to improve the reading fluency of fourth-grade students with activities incorporating nursery rhymes and investigated whether there was an improvement in the reading fluency of the students as a result of these activities.

When the scores of the experimental and the control group from the pre-test were compared, it was observed that the reading rates, reading accuracy, and prosodic reading scores showed similarities and there were no differences between the groups in terms of these scores.

The study found that there was a significant difference between the reading rates, reading accuracy, and prosodic reading skills of the students in the experimental group when their pre-test and post-test data were compared. There was an increase of 23.73 points in the reading rates, 5.22 points in the reading accuracy, and .72 points in the prosodic reading skill of the students in the experimental group. This result complies with those of the studies in the literature, in which special methods used for the improvement of reading fluency have resulted in improved reading fluency of various groups (Baştuğ & Kaman, 2013; Çayır & Ulusoy, 2014; Duran & Sezgin, 2012a; 2012b; Keskin & Akyol, 2014; Şafak & Kaman, 2013; Ulu & Başaran, 2013; Uysal, 2018; Yılmaz, 2008).

It was observed that there was a significant difference in the reading rates, reading accuracy, and prosodic reading skills in favour of the experimental group when the scores of the experimental and the control group were compared after the practice. It was considered that in addition to the in-class studies performed on the students in the experimental group, the activities with nursery rhymes affected the increase of their reading rates. It can be stated that the activities involving nursery rhymes significantly affected the automatization of the reading accuracy (word recognition) of the students. According to previously conducted studies, texts including vocals, syllables, and word repetitions are effective in improving reading fluency and it is considered that nursery rhymes can be an effective tool to help students acquire these skills.

There were no studies in the literature that have examined the effects of nursery rhymes on reading fluency. However, in his study on reading fluency, Aşıkcan (2019) has included nursery rhymes in addition to reading techniques that are frequently used in studies.

Although there are no studies about the relationship between nursery rhymes and reading fluency, there is a great number of studies indicating that nursery rhymes are effective in language education. Available research indicates that nursery rhymes improve phonological skills and affect reading (Bradley & Bryant, 1983; Bryant, Bradley, Maclean & Crossland, 1989; Ehri & Robbins, 1992; Kurudayıoğlu & Potur, 2015; Ungan, 2009; Özkaya, 2012; Patride, 1992; Stanovich, Cunningham & Cramer, 1984; Şentürk, 2008). There are also studies that have revealed that nursery rhymes are effective in improving speaking skills (Erdem, 2013; Gökkaya, 2008; Orhun, 2009). Furthermore, there are studies indicating that nursery rhymes are effectively used in foreign language education (Baleghizadeh & Dargahi, 2010; Erdem at al., 2015; Gordon, 2007; Gürbüz, 2004; Pinter, 2006; Prosic-Santovac, 2015; Sarıca, 2013; Snow, Burns & Griffin, 1998).

In the present study, the students in the experimental group were given the opportunity to improve their reading fluency

through activities that included nursery rhymes and it was concluded that they read more fluently compared to the students in the control group. Correct pronunciation, paying attention to speed, emphasis, and intonation form the basis of nursery rhymes. The sounds, syllables, and word repetitions in nursery rhymes ensure that linguistic practices can be performed while having fun. Nursery rhymes, which appeal to students due to their entertaining properties, significantly contributed to the improvement of the reading fluency of the experimental group. Nursery rhymes can take part in the literature as products that can be used to improve the reading fluency of students.

Suggestions

• Activities that include nursery rhymes have been effective in the improvement of students' reading fluency. Thus, teachers should offer these activities in Turkish courses by adapting them to the grades of students.

• Teachers should present their students with nursery rhyme reciting activities in Turkish courses in order to improve their students' reading skills.

• Families should be informed about the activities that can be performed with students with reading disabilities and encouraged to support nursery rhyme reciting activities.

• Researchers could practice activities that include nursery rhymes with students in different grades and share the results.

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