

Jolly Phonics and Word Recognition among Second-Grade Libyan Pupils: A Comparative Ex Post Facto Study

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مقارنة درجات التعرف على الكلمات لدى تلاميذ الصف الثاني الابتدائي في ليبيا وفق
طريقتي جولي فونكس والطريقة التقليدية: دراسة بأثر رجعي

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Received: 29-06-2026	Accepted: 01-10-2026	Published: 15-10-2026
		
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Abstract

This study examined differences in word-recognition test scores between second-grade pupils who had been taught using Jolly Phonics and pupils who had been taught using a traditional approach in two Libyan schools. The sample consisted of 60 pupils: 30 from a private school using Jolly Phonics and 30 from a public school using the traditional approach. The study employed a quantitative, non-experimental ex post facto design. Data were collected using a 30-word oral reading test based on first- and second-grade textbooks. The reported results indicate that the Jolly Phonics group obtained a higher mean score than the traditional-method group. However, because the groups came from different schools and no pre-test was administered, the observed difference cannot be attributed to the teaching method alone. School-level differences and pre-existing differences between pupils may also have influenced the results. The statistical results should be verified against the original pupil-level dataset before publication.

Keywords: Jolly Phonics, synthetic phonics, word recognition, oral word reading, Libyan EFL pupils, ex post facto design.

الملخص

هدفت هذه الدراسة إلى مقارنة درجات اختبار التعرف على الكلمات لدى تلاميذ الصف الثاني الابتدائي الذين تلقوا تعليمهم باستخدام طريقة جولي فونكس ودرجات التلاميذ الذين تعلموا بالطريقة التقليدية في مدرستين ليبيتين. شارك في الدراسة 60 تلميذاً، بواقع 30 تلميذاً من مدرسة خاصة تستخدم طريقة جولي فونكس و 30 تلميذاً من مدرسة عامة تستخدم الطريقة التقليدية. واعتمدت الدراسة تصميمًا كمياً غير تجريبي

بأثر رجعي، واستخدمت اختباراً لقراءة 30 كلمة مستمدة من كتابي الصفين الأول والثاني. وتشير النتائج المبّلع عنها إلى أن متوسط درجات مجموعة جولي فونكس كان أعلى من متوسط درجات المجموعة الأخرى. ومع ذلك، فإن انتماء المجموعتين إلى مدرستين مختلفتين وعدم تطبيق اختبار قبلي يمنعان عزو هذا الفرق إلى طريقة التدريس وحدها. وينبغي التحقق من النتائج الإحصائية باستخدام البيانات الأصلية لكل تلميذ قبل النشر.

ولجمع البيانات، أُعدَّ اختبار في القراءة وطُبق على أفراد المجموعتين، ثم أُخضعت الدرجات التي تم الحصول عليها للتحليل الإحصائي. وأظهرت نتائج التحليل وجود فروق ذات دلالة إحصائية لصالح المجموعة التي دُرست باستخدام طريقة جولي فونكس مقارنة بأقرانهم في المجموعة الأخرى، مما يشير إلى أن طريقة جولي فونكس أكثر فاعلية في تدريس قراءة الكلمات.

الكلمات المفتاحية: جولي فونكس، التدريس الصوتي التركيبي، التعرف على الكلمات، القراءة الجهرية للكلمات، متعلمو الإنجليزية في ليبيا، التصميم بأثر رجعي.

Introduction

Reading is an important skill for accessing written information and supporting educational, occupational, and everyday communication (Oakhill, 2014). It also contributes to language learning. Previous research has reported associations between reading and the development of language proficiency (Davis, 1995; Elley & Mangubhai, 1983; Tudor & Hafiz, 1989; Brusch, 1991). In contexts where learners have limited exposure to the target language outside the classroom, reading can provide an important source of language input (Bright & McGregor, 1970, as cited in Brusch, 1991).

Reading is a complex skill involving several interrelated abilities. The National Reading Panel identified phonics, phonemic awareness, fluency, vocabulary, and comprehension as important components of reading instruction (National Institute of Child Health and Human Development [NICHD], 2000, as cited in Learning Point Associates, 2004). Adams (1994) likewise argued that these components support one another rather than operate independently. For the purposes of the present study, it is important to distinguish word recognition from broader reading outcomes: the ability to identify and pronounce individual words supports reading comprehension, but it is not equivalent to comprehension or fluency.

Word recognition involves identifying printed words accurately and efficiently. When readers devote substantial effort to decoding individual words, fewer cognitive resources may remain available for comprehension (Adams, 1994). Thus, accurate word recognition is an important foundation for reading, although a test of isolated words cannot by itself establish pupils' overall reading comprehension or fluency.

Children need explicit instruction to develop word-recognition skills, including knowledge of letter-sound relationships and the ability to decode unfamiliar words.

When children struggle to identify letters, spelling patterns, or words, reading may become effortful and discouraging. Readers who devote much of their attention to decoding may have fewer cognitive resources available for comprehension (Adams, 1994).

For this reason, accurate and increasingly automatic word recognition is an important component of developing reading proficiency.

Reading instruction for beginners commonly addresses phonemic awareness, decoding through phonics, and the recognition of familiar words (Murray, 2016). These skills are related, but they are not interchangeable; the present study focuses specifically on oral word recognition.

Several approaches are used to teach reading. They differ in how they introduce written language and support beginning readers.

Phonics is one approach to teaching word recognition because it explicitly addresses relationships between written letters or letter combinations and speech sounds. Jolly Phonics is one programme based on this approach.

Jolly Phonics is a synthetic-phonics programme designed to help children learn to read and spell. It introduces letter sounds in a planned sequence and uses multisensory activities. The programme teaches 42 letter sounds represented by the 26 letters of the alphabet, arranged in seven groups. The sequence is intended to help children build simple words early while reducing confusion between similar sounds.

Children learn letter sounds through stories, pictures, and other activities, and they practise letter formation. They are then taught to blend sounds to read words and to identify sounds within spoken words. The programme also introduces frequently used irregular words, often called “tricky words,” that cannot be decoded fully through common phonics patterns. Lloyd and Stephen (1994) also describe a role for parents in supporting practice at home.

Parents may support children by helping them practise letter sounds and complete activities in the worksheets (Lloyd & Stephen, 1994).

In Libya, Jolly Phonics has been incorporated into the English curriculum for the first three primary grades. The present study compares the word-recognition scores of second-grade pupils who had been taught using Jolly Phonics with those of pupils taught using a traditional approach. Because the teaching approaches were already in place and were not assigned by the researchers, the study used a non-experimental ex post facto design and a reading test to collect data.

Statement of the Problem

Reading provides important language input and is associated with academic achievement and the development of other language skills (Krashen, 1989; Anderson, 2013, as cited in Khaldi, 2017). However, previous research has identified difficulties with reading among Libyan learners of English. Pathan (2013), for example, reported problems with reading tasks among university students and noted difficulties with word pronunciation, vocabulary, and training.

Research on Libyan learners has also highlighted difficulties in decoding written words. These findings suggest a need to examine approaches that explicitly teach letter–sound relationships and word recognition, particularly at the primary-school level.

Reading words (word recognition) is a fundamental skill for reading comprehension.

Word recognition is an important foundation for reading comprehension. Previous research in Libya has reported that learners sometimes rely on letter names rather than letter sounds when attempting to decode words (Al-Beckay, 2015). However, claims about teaching practices across all Libyan schools should be made cautiously, as practices may differ by school and teacher. This study therefore examines the scores of pupils taught through two existing approaches rather than assuming that one approach alone explains any observed difference.

Purpose of the Study

This study aims to compare the word-recognition test scores of second-grade Libyan pupils who had been taught using Jolly Phonics with the scores of pupils who had been taught using a traditional approach.

Research Question

Is there a statistically significant difference between the word-recognition test scores of second-grade pupils taught using Jolly Phonics and those of pupils taught using the traditional approach?

Research Hypothesis

The Jolly Phonics group is expected to obtain higher scores on the word-recognition test than the traditional-method group. Because the study is non-experimental and lacks pre-test measurements, this hypothesis concerns a difference in observed scores and does not establish that the teaching method caused that difference.

Significance of the Study

Research has examined Jolly Phonics in several educational contexts, including contexts where English is learned as a second language.

The present study adds a Libyan primary-school context to this discussion. Its contribution is a comparison of word-recognition test scores among second-grade pupils taught through two existing approaches. Because the groups were drawn from only two different schools, the findings should be interpreted as context-specific and not generalized to all Libyan pupils. The study also highlights the need for stronger designs that can separate the influence of a teaching approach from school-level and pupil-level differences.

Definition of Key Terms

Cognitive abilities: "the skills involved in performing the tasks associated with perception, learning, memory, understanding, awareness, reasoning, judgment, intuition, and language."

Word recognition skills: "the cluster of strategies that are used to recognize words in reading, including the instant recognition of sight words, the interpretation of context clues, and the use of phonics and structural analysis." (APA Dictionary of Psychology, n.d.).

Reading fluency: is the ability to identify words in a text quickly and correctly, and making use of wording as well as stress in a manner that makes reading sounds like speaking. (Learning point association, 2004).

Comprehension: "the act or capability of understanding something, especially the meaning of a communication." (APA Dictionary of Psychology, n.d.).

Synthetic phonics: "a method of teaching people to read by training them to pronounce sounds associated with particular letters in isolation and then blend them together"

Phonics: "is a method of teaching people to read by training them to associate written letters with their sounds"

Phonemic awareness: the ability to differentiate between and identify different phonemes. (Adams, 1994).

Grapheme: "one of a set of orthographic symbols (letters or combinations of letters) in a given language that serve to distinguish one word from another and usually correspond to or represent phonemes"

Ex post facto: "research that examines past occurrences in order to understand a current state. Although this type of design involves both a dependent variable and an independent variable, the investigator cannot manipulate the latter." (APA Dictionary of Psychology, n.d.).

Literature Review

Background

This review summarizes research relevant to reading, word recognition, phonics, phonemic awareness, and the use of Jolly Phonics with young learners. It provides a conceptual basis for the research question and allows the present study to be compared with earlier work in terms of design, participants, intervention, and outcome measures.

The reviewed studies differ in sample size, educational context, research design, duration, and assessment instruments. These differences matter when interpreting their findings: a single-child case study, a quasi-experimental comparison, and a post-test-only study do not provide the same strength of evidence. The present study is also limited in this respect because it compares existing groups from two schools without pre-test measurements.

The Importance of Reading

In this rapidly growing world, the ability to read is vital to function successfully in the society. Children with reading difficulties are very likely to face problems in schooling

.In addition, when they grow up, they would struggle to get a job, because nowadays reading is a basic requirement.

In terms of language acquisition, reading skill is so important. Krashen stressed the importance of reading, and explained that reading contributes to other forms of language competence like vocabulary and spelling (1989). Many studies have been carried out to examine the role of reading in improving language levels of learners; the results of those studies supported Krashen's hypothesis. Elley and Mangubhai conducted a programme in Fijian primary school. They chose twelve schools, and then they divided them into three groups: Two experimental groups and one control group. They provided the experimental group with 250 books along the course of the programme. On the other hand, the control group continued to use their usual English programme. The two experimental groups used two different methods for reading: shared book method and silent method. After eight months, results showed that the impact of the programme was beneficial; students made progress in several language skills (1981).

Inspired by Krashen's input hypothesis, a study was carried out in UK to examine the effect of extensive reading programme. The participants were ESL learners from two schools. Students in the experimental group were provided with graded readers material, and no changes were made regarding the control group. The treatment took three months.

Results revealed that the language of students of the experimental group improved particularly in the areas of reading and writing (Tudor & Hafiz, 1989).

Reading Difficulties

Reading is not a simple process. It might take much time and effort to teach a child how to read. It gets more complex when the goal is to teach them how to read in a foreign language.

Chandran and Shan carried out a study to identify reading difficulties of ESL Malaysian students. They found that there were five categories of reading comprehension difficulties. The major difficulty was related to basic reading skills; although students were in the secondary level, they reported having problems with word recognition (2019).

A similar study in Libya was carried out by Albeckay and Reddy. The objectives of this study was to bring to light reading difficulties of Libyan students, and to suggest some pedagogical solutions to overcome these difficulties. Findings revealed that students faced many challenges that affected their reading ability like, limited access to English texts at home, lack of parent support, and lack of community support for English

.However, the major obstacle was the use of "inappropriate teaching approach" which did not directly address the skill of decoding words (2015).

According to Adams, word recognition skills are crucial to skillful reading. Moreover, readers who struggle with this skill will very likely choose not to read (1994). Stanovich (2000) stated that the ability to recognize words correctly and unconsciously, even without meaning is a sign of skilled readers (as cited in Hayes & Flanigan, 2014). Hayes and Flanigan stated that children who are skilled at recognizing words will do better in comprehending texts (2014).

Phonics

Adams defined phonics as an approach for teaching reading which is based on the alphabetic principle. That is, it is a system used for teaching the correspondences between letters or group of letters and their sounds (1994). According to Ehri, phonics is a method for teaching students written graphemes and their corresponding phonemes in order to help them read and spell words. In addition, he explains the term "systematic phonics instruction" by pointing out that phonics instruction is systematic when all the letters and their corresponding sounds are taught in a specific order including vowels (long and short), digraphs and blends of letter sounds. Systematic phonics instruction is considered to be very important for teaching reading for beginners; It enables them to understand the alphabetic writing system; Beginners cannot read well unless they fully understand the alphabetic principle (2003). According to Adams, there are plenty of phonics programmes, and they are different in many aspects. Some of these differences are minor, however, other differences are irreconcilable for instance, should instructors start teaching capital letters, or should they start with small letters? Are Instructors supposed to teach letter names, or should they neglect it?

The effectiveness of systematic phonics instruction has been investigated many times in recent decades. However, the first best known attempt was made by Chall; She gathered all studies she managed to find in that time, then, she analysed them. She found that students who had systematic phonics instruction performed better in reading than those who had less or no systematic phonics instruction (1967 as cited in Adams, 1994). Chall findings were confirmed in subsequent research reviews (Adams, 1990; Anderson, Hiebert, Wilkinson & Scott, 1985; Balmuth, 1982; Dykstra, 1968 as cited in Ehri, 2003). According to Ehri, these reviews did not include any studies in which the subjects were ELL pupils. Nevertheless, he mentioned one study which investigated the effectiveness of systematic phonics instruction for ELL children. The study found that systematic phonics instruction helped children in reading more than a whole word approach. However, he stated that more research is required to reaffirm those findings (2003).

Phonemic awareness

As stated by Liberman et al (1974), phonemic awareness is the ability to notice as well as move, change, or modify phonemes in spoken words (as cited in Ehri et al, 2001). Ehri et al. stated that phonemic awareness (PA) is not the same as phonological awareness; the latter is more general term which refer to phonemic awareness as well as to awareness of bigger units of speech like, syllables and rhyming words. Phonemic awareness instruction is considered to be very helpful in teaching children how to read. Ehri et al. explain that the English writing system is alphabetic, and it is difficult to get familiar with it. This is because words in English consists of graphemes which corresponds to spoken phonemes, and to match these together is not an easy job for beginners. Moreover, words in speech are connected, and it is hard to signal the beginning and the ending of each phoneme. Thus, learning about phonemes will help to understand the alphabetic principle. This was supported by evidence from a research conducted by (Mann, 1987; Read, Zhang, Nie, & Ding, 1987); in which the results showed that people who learnt scripts that is not alphabetic, like Chinese, had difficulties dividing speech into

phonemes (as cited in Ehri et al, 2001).researchers pointed out that there are a number of tasks used to develop and evaluate children's phonemic awareness such as:

1. Phonemic isolation: which depends on the ability to identify phonemes in a given word.
2. Phoneme identity: which depends on the ability to identify the phoneme which is repeated in different words.
3. Phoneme blending: which depends on the ability to mix sounds to form a word.
4. Phoneme segmentation: which depends on the ability to divide words into their constituent phonemes.
5. Phoneme categorization: which depends on the ability to recognize the word , which has a different sound, from a group of words.
6. Phoneme deletion: which depends on the ability to identify what word can be made after removing a particular phoneme (2001).

The effectiveness of phonemic awareness instruction was examined numerous times in the literature. A meta-analysis was conducted to assess the strength of the evidence provided by previous studies. 52 published studies were chosen based on specific criteria.

Those studies included a control group that either had non-PA instruction or no special instruction. Results showed that PA instruction is more effective than other types of instruction or no instruction in teaching reading and spelling (2001). Moreover, Bond and Dykstra's data analysis showed that the second most important predictor of reading achievement in the first grade was the ability to differentiate phonemes from each other (1967 as cited in Adams, 1994).

Previous Studies

This section reviews three studies related to Jolly Phonics. Although all examine the programme, they differ in their participants, duration, research designs, and outcome measures. These methodological differences should be considered when comparing their findings with those of the present study.

In this study, the researcher used the Early Reading Screening Instrument (ERSI) to evaluate the level of students in reading an English text. The students were subjected to ERSI pre-test that included the alphabet knowledge task, concept of word task, phonemic awareness task, and word recognition task. The pre-test was carried out 20 weeks before the JP (Jolly Phonics) intervention, then, the child was post-tested after the intervention of JP. The scores improved in terms of concept of word task, phonemic awareness task, word recognition task, but the alphabet knowledge task score was the same. This research paper concluded that JP is considered as effective method to teach reading regular words by sounding and blending. However, the method failed to teach reading irregular words (tricky words).

“The Effect of Using Jolly Phonics on Jordanian First Grade Pupils Reading”.

By Abeer Nasrawi & Dina Al-Jamal (2017)

This study investigated the effect of Jolly Phonics on Jordanian first grade pupils' reading. A quasi-experimental research design was applied in this study. The sample of this study consisted of 58 first grade pupils. It was selected from primary school in Irbid city, Jordan, and subjected to pre-test. The sample was divided into two groups: an experimental group which consists of 29 children taught by using the Jolly Phonics for five weeks, and a control group of 29 pupils taught by using the conventional strategy. During the first semester of the academic year 2015- 2016, four tools were used, which were: a reading test, Jolly Phonics worksheets, and Jolly Phonics songs with action. The findings of the study reported positive statistical effect of the Jolly Phonics strategy. This study recommends that the Ministry of Education needs to

adopt the strategy of Jolly Phonics in order to improve pupils reading performances; however, they should bear in mind that there are some student who are considered non auditory and that they need more different activities to be able to read successfully.

The third study entitled "Utilizing Jolly Phonics Songs and Flash Cards to Teach Iraq EFL Primary School Pupils' Language Learning Skills" By. Noor Hameed Majeed (2020).

This study aimed to examine whether the use of Jolly Phonics songs and flash cards is effective in teaching Iraqi EFL primary school pupils language skills. Experimental design and post-test were used as a data collection tool. Two groups, particularly 36 first class primary school pupils in each group were selected to be the sample of this study; the two groups were equalized in terms of variables that may have effect on the independent variable (Jolly phonics songs and flash card). Then, suitable statistical tools were applied on analyzing the data. The results of this study showed that Jolly Phonics songs and flash cards have effectively improved the students' language learning skills. The study concludes that the pupils of the experimental group achieved higher scores and performed better than those of the control group. Since that, the using of the songs and flash cards have a positive impact on the students' achievement in the oral post-test ,and these results support the fact that utilizing the Jolly Phonics' songs and flash cards in Iraqi EFL classes can provide interactive learning environment for the pupils.

Methodology

The reviewed studies used different approaches to examine Jolly Phonics (Nasrawi & Al-Jamal, 2017; Faustina & Syukri, 2014; Majeed, 2020). The design selected for a study should match its research question and the degree of control available to the researchers. This section describes the design, participants, instrument, procedures, and analysis used in the present study.

Research Design

The study used a quantitative, non-experimental ex post facto design. The researchers compared the scores of two groups that had already received different forms of instruction; the researchers did not assign pupils to teaching conditions or deliver an intervention. This design allows a comparison of observed outcomes but does not establish a causal relationship between the teaching method and test performance. In particular, differences between schools and pre-existing differences between pupils may offer alternative explanations for any score difference. A quasi-experimental or experimental design with pre-test and post-test measurements would provide stronger evidence about change associated with an instructional approach.

The researchers did not conduct an intervention because of time constraints. The Jolly Phonics handbook describes a programme taught over an extended period (Lloyd & Stephen, 1994), and there was insufficient time to implement and evaluate the programme within the study period. The design should therefore be understood as a comparison of existing instructional groups, not as an experiment testing the effects of a newly administered intervention.

Data Collection Instrument

Pupils' oral word reading was assessed using a 30-word test based on material from first- and second-grade textbooks. The test measured the ability to pronounce individual words; it did not directly assess reading comprehension, connected-text fluency, or general reading proficiency. The manuscript does not currently provide a word-by-word rationale or a distribution of items across specific phonics or word-recognition skills; these details should be added if the original test-development records are available.

Content Validity

The test was reviewed by English teachers who taught second grade. According to the study records, the reviewers considered whether the words matched the curriculum and approved the test as appropriate for assessing second-grade word reading. The manuscript does not specify the number of reviewers, their qualifications, the criteria used for their review, or how feedback was documented. These details should be confirmed and reported rather than inferred.

Test–Retest Reliability

Test–retest reliability was assessed using a separate group of 10 second-grade pupils from Al-Ghiran Central School. The pupils completed the same reading test twice, with a two-week interval between administrations. Pearson’s correlation coefficient was calculated to examine the consistency of scores across the two administrations. Because the reliability sample was small, the coefficient should be interpreted cautiously.

The reported Pearson correlation coefficient was .98 ($n = 10$). A confidence interval calculated from this rounded coefficient is approximately 95% CI [.92, .995]; this is an approximation and should be recalculated from the original paired scores before publication. The small sample and the use of a correlation alone do not establish every aspect of measurement reliability, including consistency between different assessors.

Table 1. Pearson correlation coefficient

Decision	Critical value	Degree of freedom	Correlation coefficient value	Number	Data
Reliable	0.93	8	0.98	10	Test-retest

The reported test–retest correlation was .98, suggesting a strong association between the two sets of scores. However, this estimate is based on only 10 pupils and is therefore imprecise. The manuscript should report the original paired data or a verified confidence interval and should avoid treating the coefficient as definitive evidence of reliability.

Data Collection Procedure

Because the study used an ex post facto design, the researchers had limited control over the conditions under which pupils had received instruction. Pupils who were reported to be taking additional courses after school were excluded to reduce one possible source of variation. Nevertheless, other potentially influential factors—including teacher experience, instructional resources, school environment, attendance, family background, and prior achievement—were not controlled and may have affected the results.

The Jolly Phonics group was drawn from Al-Haramain Private School, whereas the traditional-method group was drawn from Bader Al-Kubra Public School. As teaching approach and school type were therefore linked, their separate contributions cannot be distinguished in this design. Differences between the groups may reflect the teaching approach, school-level conditions, pupil characteristics, or a combination of these factors.

Testing took place approximately two weeks before the end of the second semester. Pupils were asked to read each word aloud and could skip a word they did not know. According to the original procedure, a correctly pronounced word received one point and an incorrectly pronounced word received zero, producing a maximum score of 30. The manuscript does not specify how acceptable pronunciation variants, dialect-related differences, self-corrections, or

ambiguous responses were handled, nor does it report whether one or more assessors scored the test. These scoring rules and assessor details should be clarified from the original records.

Participants

The sample consisted of 60 second-grade pupils enrolled in the second grade of the 2020–2021 academic year. Thirty pupils were selected from Al-Haramain Private School, where Jolly Phonics was used, and 30 were selected from Bader Al-Kubra Public School, where the traditional approach was used. The manuscript reports that pupils were randomly selected within each school; however, the two instructional groups were not randomly assigned to teaching conditions. The absence of random assignment and pre-test scores limits conclusions about the comparability of the groups before instruction.

by the traditional method.

Second grade was selected because the Libyan Jolly Phonics programme spans the first three primary grades, with pupils revisiting letter–sound patterns and learning additional tricky words and alternative spellings in later stages. School closures during the COVID-19 pandemic affected the 2019–2020 academic year and may have influenced pupils' learning opportunities. These circumstances provide context for the sample but do not remove the possibility of differences in prior learning between the two groups.

Research Ethics

Research ethics are concerned with what is appropriate or inappropriate in terms of morality when dealing with participants or obtaining any other type of data. There are several principles and guidelines that researchers should adhere to when conducting an educational research such as, voluntary participation, obtaining an informed consent, no harm or risk to participants, and privacy (McMillan & Schumacher, 2009).

Before data collection, the researchers obtained permission from the school principals and consent from pupils' guardians. Participation was voluntary, and pupils were not forced to complete the test. The manuscript reports that no pupils' names were linked to their scores. The authors should retain any available documentation of school permission and guardian consent in accordance with the journal's ethics requirements.

of privacy, no names were used in the process of collecting the data, that is, the scores of the test were not linked to the names of the pupils who took the test, which means that no one can identify the score of any particular pupil.

Data Analysis

The study compared the word-recognition scores of two independent groups. The original manuscript reports group means and variances and states that a t-test was used. Because the groups were independent and the reported variances differ substantially, Welch's independent-samples t-test is a reasonable analysis to consider; it does not assume equal population variances. However, all inferential statistics must be recalculated from the original pupil-level scores before submission. The manuscript should also identify the software used, examine relevant assumptions, and report the test statistic, degrees of freedom, exact p-value, effect size, and confidence interval.

Results and Discussion

This section reports the observed word-recognition scores for the two groups and discusses possible interpretations in light of the research design and earlier studies.

Because no pre-test was administered, the analysis compares end-of-period scores only. It cannot determine how much either group improved or whether the groups were equivalent before instruction.

Results and Discussion

Sixty pupils completed the 30-word oral reading test: 30 pupils from the school using Jolly Phonics and 30 from the school using the traditional approach. The words were selected from first- and second-grade textbooks. Each correctly pronounced word received one point, and each incorrect response received zero, for a maximum score of 30.

The original manuscript reports a mean of 10.77 and variance of 97.04 for the Jolly Phonics group, and a mean of 2.83 and variance of 25.56 for the traditional-method group. These summary values suggest that the Jolly Phonics group had a higher average score. However, the original reported *t* value and degrees of freedom are not consistent with the sample sizes and summary statistics presented. The statistical results must therefore be checked against the original pupil-level dataset before they are treated as final.

Table 2. Reported group summaries and statistical results (to be verified against the original dataset)

Group	n	Mean	Variance	SD
Jolly Phonics	30	10.77	97.04	9.85
Traditional approach	30	2.83	25.56	5.06
Difference (Jolly Phonics – traditional)	—	7.94	—	—

Based on the summary statistics currently shown in the manuscript, the Jolly Phonics group's mean score ($M = 10.77$, variance = 97.04) is higher than the traditional-method group's mean score ($M = 2.83$, variance = 25.56). A provisional calculation from these rounded summary values gives a mean difference of 7.94 points and a Welch *t* statistic of approximately 3.93, with approximately 43.29 degrees of freedom and a two-tailed *p* value of approximately .0003. The provisional 95% confidence interval for the mean difference is approximately [3.86, 12.02], and the standardized mean difference using the pooled standard deviation is approximately $d = 1.01$. These figures are estimates based on rounded published summaries, not a verified reanalysis of the raw data; they must be replaced or confirmed using the original scores. Moreover, statistical significance does not establish that Jolly Phonics caused the difference, because each method was represented by a different school and no pre-test was administered.

Conclusion and Recommendations

This study compared second-grade pupils' oral word-recognition scores in two Libyan schools: one using Jolly Phonics and the other using a traditional approach. The Jolly Phonics group had a higher reported mean score on the 30-word test. However, the design was non-experimental, the groups came from different school types, and no pre-test measurements were collected. Therefore, the findings indicate a difference in observed test scores but do not establish that the teaching method alone caused that difference.

The result is broadly consistent with the direction of findings reported in previous studies of Jolly Phonics (Nasrawi & Al-Jamal, 2017; Faustina & Syukri, 2014; Majeed, 2020). Nevertheless, direct comparisons should be made cautiously because the studies differed in sample size, participants, duration, research design, and outcome measures. For example, the reviewed studies included a single-child study, a quasi-experimental study, and a study using songs and flashcards to assess broader language-learning outcomes. These differences limit the extent to which their results can be treated as direct replications of the present word-recognition comparison.

These findings are in line with the results from previous studies (Nasrawi & Al-jamal, 2017; Faustina & Syukri, 2014; Majeed, 2020). In one of these studies, pupils who had Jolly Phonics instruction improved their word recognition skills. In the other studies, Jolly Phonics groups' scores surpassed their peers' scores in the traditional groups.

One possible explanation for the higher score in the Jolly Phonics group is that explicit attention to letter–sound relationships, blending, and phonemic awareness may support beginning word reading (Adams, 1994; Ehri et al., 2001). However, this explanation remains tentative in the present study because the design did not isolate the teaching method from school-level differences. Teacher experience, available resources, prior achievement, attendance, home support, and other unmeasured factors may also have contributed to the observed difference. In addition, the test measured oral reading of isolated words, not reading comprehension or fluency in connected text.

Limitations

Several limitations should be considered when interpreting these findings. First, the study included only two schools, with Jolly Phonics represented by a private school and the traditional approach represented by a public school. Consequently, school type and teaching approach were confounded, and the effects of the two factors cannot be separated. Second, the study did not include pre-test measurements, so the initial comparability of the groups and changes over time are unknown. Third, the sample was limited to 60 second-grade pupils in one local context, which restricts generalizability. Fourth, the 30-word test measured oral word recognition only and did not assess comprehension, connected-text fluency, or other dimensions of reading. Fifth, the test description does not provide sufficient detail about word-selection criteria, expert review, pronunciation scoring rules, or the number of assessors. Sixth, the test–retest reliability estimate was based on only 10 pupils. Finally, school closures during the COVID-19 pandemic may have affected learning opportunities. These limitations mean that the results should be interpreted as a group difference in the scores observed at one point in time, not as definitive causal evidence of the effectiveness of Jolly Phonics.

Recommendations

The findings support continued evaluation of structured phonics instruction, but they are not sufficient on their own to establish the superiority of one method across Libyan schools. Teacher training and access to appropriate instructional resources may be considered as part of a broader, evidence-informed literacy strategy. Future implementation should be accompanied by systematic monitoring and evaluation rather than assuming that resources or training will necessarily produce a particular outcome.

Future research should include multiple schools of different types, larger and more representative samples, and pre-test and post-test measurements. Where feasible, pupils or classes should be randomly assigned to conditions; where random assignment is not possible, researchers should use a well-designed quasi-experimental comparison and account for relevant background variables. The same validated assessment should be administered consistently, and the study should report detailed scoring procedures, assessor training, and inter-rater agreement where more than one assessor is involved. Future studies may also investigate other outcomes, such as spelling, writing, reading fluency, and comprehension. Researchers should report the statistical software, share anonymized data or a data summary where ethically permitted, and provide complete reproducible analysis details.

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Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

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