

APPLYING GENDER DIFFERENCES IN PHONOLOGICAL AWARENESS TO ENHANCE STUDENTS' READING ABILITY

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Abstract: Phonological awareness is the first stage in enhancing kids' reading skills. Phonological awareness provides the foundation for youngsters to associate written letters with their voices, which will help them understand the reading process. Primary school reading abilities provide the groundwork for subsequent reading success. The research technique that utilized to conduct study on phonological awareness and reading ability of male and female primary school pupils is a research method that combines quantitative and qualitative data, commonly known as the Mixed-Method. To obtain quantitative data, this method employs one experimental group, whereas to obtain qualitative data, classroom observation, questionnaires, and interviews conducted on experimental. The subjects of this study were low-grade male and female pupils at primary schools in Cirebon. A basic random sampling procedure is used to determine the samples. There were four types of data gathering procedures used in this study: phonological awareness, observation, questionnaires, and interviews. This study leads to several findings. First, the findings are broadly consistent with previous research in the field of PA in primary children. The study discovered a consistent developmental trajectory in the majority of the PA tasks in favor of primary children. In addition, females outperformed males in some PA subtests. In Strip initial consonant, female students outperformed slightly higher than male students with 4.85. Other subtests are leading by female students such as in supply initial consonant 5.31, Initial consonant same 5.69, Initial consonant different 6.0, and others. In order to eliminate obstacles to advancing their reading abilities, elementary students must be trained on PA exercises.

Keywords: *phonological awareness; reading ability; sex differences.*

INTRODUCTION

In primary education, reading is the most crucial ability. Reading is essential for comprehending the reading assigned by the instructor, not just in Indonesian but also in other types of material in general (Kurniawan & Zufriady, 2019; Kurniaman *et al.*, 2018). The capacity to read at the primary school level is one of the language skills intended by the government through the School Literacy Movement (SLM) initiative since 2015 (Kurnia, 2021; Suwono, 2016; Vargas *et al.*, 2020). There are linguistic issues that primary school students experience as they grow more proficient, as they routinely come across words with more than three and four syllables, and as phrases and sentences become more and more comparable to the dynamic language they hear and speak around them (Wolley & Heggie, 2016).

They are therefore obliged to use internal vocabulary to generate phonological representations. This method uses spoken language to acquire meaning by transforming visual symbols into phonemes (Sandoval *et al.*, 2014; Yarahmadzahi *et al.*, 2017; Alhunsu, & Awwad, 2020). The development of phonological awareness is necessary for optimal reading development. Students in elementary school who lack this talent, phonological awareness, have a more difficult time improving their basic reading proficiency (Wilsenach & Makaure, 2020). Several studies have found a beneficial relationship between phonological awareness and reading ability (Alvarez *et al.*, 2021; Waknis & Vanaja, 2017; Carnio *et al.*, 2017).

Very few researches have looked into the relationship between sex and phonological

awareness, particularly at the phonemic level. Nonetheless, some researches demonstrate that female students have superior phonological awareness abilities, particularly at the syllable level (Moura *et al.*, 2009; Chipere, 2013; Fernandez, 2018; Wolter *et al.*, 2015; Logan & Johnston, 2010). Another study found that female students outperformed male students in primary school reading proficiency in first and second grades (Sana & Kirby, 2018; Deliany, 2020; Wolter *et al.*, 2015). As a result, research on the application of gender to phonological awareness connected to pupils' reading ability in primary schools in the Cirebon is required. Elementary school kids' reading motivation will be influenced by their instructors' gender views. Finally, the School Literacy Movement program will be achieved more swiftly by decreasing sex inequalities in phonological awareness to increase the reading ability of primary school kids. This enhancement will propel Indonesia to a higher ranking in literacy and numeracy programs.

Phonological Awareness (henceforth PA) is described as the sensitivity to and ability to work with the sounds of spoken language (Wooley *et al.* (2015). It is a metalinguistic skill that relates to one's capacity to comprehend the phonological characteristics and structure of words (Zugarramurdi, *et al.*, 2022; Olufunke & Elizabeth, 2020; Pantazi *et al.*, 2019). PA denotes that words are formed up of many different types of various sound units (Patscheke *et al.*, 2016). It has been clearly established over the last 30 years that phonological awareness is one of the biggest indicators of reading achievement (Cho *et al.*, 2011; Lim & Chew, 2018). It influences reading ability more than any other element, including intelligence, age, and socioeconomic status (Manu *et al.*, 2021). PA is a necessary skill for language learning. (Vibulpatanavong & Evans, 2019; Milankov *et al.*, 2021). PA skills involve the capacity to discover word similarities, alter words through blending and segmentation, and detect word elements such as phonemes and syllables (Alcock *et al.*, 2010; Bahrudin *et al.*, 2021). PA reflects children's growing sensitivity to sublexical and segmental information.

It is essential to underline the contrasts between sex and gender in this study, since each has its own function. Gender refers to biological distinctions between men and women, whereas gender relates to men and women's social characteristics (Winarto, 2016). For a long time, men and women have used separate languages. Women are thought to be better at language than

males (Winarto, 2017). This enables women to have a higher level of phonological awareness than men (Chipere, 2013; Moura *et al.*, 2009). Chipere (2013) presents her descriptive story demonstrating that girls outperform boys in three phonological awareness tests. Smooth Phonemic Segmentation (KSF) was 0.31d, Letter Sound Accuracy Identification (KBF) was 0.44d, and Reading Whole Words (MSK) was 0.3d for the girls. When it comes to mastering phonological awareness, male and female pupils show considerable variances.

In another research, Moura *et al.* (2009) found statistically significant differences between the male and female sexes in recognizing the final phoneme, separating words by six phonemes, and reversing words phonemically by two and three phonemes. Female students have an edge in phonological awareness over male pupils since they have the linguistic skills to encourage male students.

Gender variations in verbal and reading ability have drawn an excessive amount of attention in the field of study. Khasawneh & Saleem (2021) stated that females outperformed males in reading. Moura *et al.* (2009) examined Gender gaps in phonemic awareness were discovered, with females outperforming males in the majority of the tasks. Logan & Johnston (2010) reported a connection between gender variations in PA and gender disparities in reading ability.

Based on the facts, it has been established that girls outperform boys in phonological development (Fauzi & Ashadi, 2019; Dixon, 2010). According to recent research, girls do much better than boys in phoneme segmentation tasks (Calle, 2018; Moura *et al.*, 2008), accessing and employing phonological name codes, and achieving a greater proportion of appropriately uttered phonemes (Ahmed, 2023; Krenca *et al.*, 2019). Gender inequalities in phonological or phonemic awareness, on the other hand, appear to change with the task's nature and complexity. For example, Moura *et al.* (2008) reported that Girls outperformed boys in phonemic synthesis and segmentation, as well as 'phonemic reversion for words with two or three phonemes' (p. 53). Boys, on the other hand, performed much better in 'phonetic synthesis for words with seven phonemes, and phonemic reversion for words with four or five phonemes'. Boys and girls differed in task complexity in this sample of children aged 7:2 to 8:8 years, albeit it was acknowledged that these gender differences, while statistically significant, were quite modest.

Duranovic *et al.* (2012) also found, in a sample of 401 kindergarten pupils, girls displayed considerably stronger phoneme segmentation skills; nonetheless, boys and girls fared similarly in terms of early sound fluency. Girls had made greater development in initial sound fluency by the end of kindergarten, whereas boys had made faster growth in phonemic segmentation. Although girls outperformed boys at the end of kindergarten in both first sounds fluency and phonemic segmentation, *et al.*, similar to Moura *et al.* (2008), concluded that Gender differences were insignificant, and gender was not a major predictor of later reading achievement.

Phonemic awareness is important for early reading development and subsequent reading success, however there is little evidence that gender variations in phonemic awareness, or even phonological awareness, account for more boys than girls with a reading problem. A number of studies have found substantial gender variations in phonemic or phonological awareness, albeit these differences have been admitted to be minor. Other studies have found minor or no differences between boys and girls. Furthermore, data suggests that depending on the kind and difficulty of the activity, boys and girls have varying capabilities in components of phonological awareness. However, it does not appear that these differences regularly predict later reading success. Although differences in phonemic awareness may explain for inequalities in reading ability, they do not appear to account for reported gender differences in reading limitation.

Boys' lower levels reading ability reinforces existing gender prejudices that reading is for females. According to research, children begin to absorb gender preconceptions from the age of 2-3 years, and information about those genders accumulates until the kid reaches school age (Wolter *et al.*, 2015; Banse *et al.*, 2010; Lundberg *et al.*, 2012). This assumption suggests that males' activities are outside the home, such as football and other outdoor activities, whereas children are more active within the house, such as cooking and reading (Rouland *et al.*, 2013; Retelsdorf *et al.*, 2015; Lee & Al Otaiba 2015). Chipere (2015) illustrates gender variations in the capacity to read all words at various levels of schooling. Female kindergarten students outperformed male pupils by grades of 0.022d and insignificant, $U = 342$, $z = 0.151$, $p > 0.05$. Primary school grade one results Female students outperformed male pupils by 0.15d, although this difference was not statistically significant ($U = 167$, $z = 0.935$, $p >$

0.05). For grade 2 primary school education levels, the difference between female students and male students was 0.68d and significant, $U = 146.5$, $z = 2.394$, $p 0.02$.

Lynn and Mikk (2009) conducted a systematic review that confirms both Lietz's finding of a sex difference in favor of girls and her notion that variability in assessment methodologies could explain the variation in the magnitude of sex differences across time. Lynn and Mikk's systematic review included research that used two different reading comprehension measures: the Program for International Student Assessment (PISA) and the Progress in International Reading Literacy Study (PIRLS). The PISA was conducted in 27, 40, and 56 nations in 2000, 2003, and 2006. The PIRLS was administered in 35 and 40 nations, respectively, in 2001 and 2006. Lynn and Mikk's meta-analysis drew on 198 country studies in total. Lynn and Mikk reported effect sizes in favor of girls of 0.49d, 0.36d, and 0.41d for the PISA studies of 2000, 2003, and 2006. They reported effect sizes of 0.25d and 0.21d for the 2001 and 2006 PIRLS investigations, respectively. Thus, they not only supported Lietz's discovery of sex differences in reading ability, but the pattern of their data also confirmed her theory about the influence of measuring tools on the degree of sex differences. School teachers play a critical role in developing pupils' phonological awareness in order to improve their reading ability. It is therefore crucial that studies be conducted on how gender affects phonological awareness in relation to reading proficiency in Cirebon region elementary schools. The reading motivation of primary school pupils will be influenced by the gender judgments of their teachers. Thus, this study suggests the following formulation of the problem: How phonological awareness varies depending on how gender differences are applied on pupils in raising the reading proficiency of primary school pupils?

Ultimately, the School Literacy Movement program will be realized more quickly by reducing gender differences in phonological awareness to enhance elementary school students' reading abilities. Indonesia's literacy and numeracy programs will be improved thanks to this optimization.

METHOD

The Mixed-Method study methodology is utilized to examine the association between phonological awareness and reading proficiency in primary school pupils based on these gender disparities.

Quantitative and quantitative data are combined in this manner. Using a pretest-posttest nonequivalent group design, a pseudo-experimental method is employed in this Mixed Method approach to gather quantitative data. In this approach, there is two experimental group. A straightforward random sampling strategy was used to collect samples for this investigation. Meanwhile, in order to obtain qualitative data, classroom observations, questionnaires, and interviews with classroom teachers will be conducted with both experimental and control classes to learn how primary school teachers perceive the connections between phonological awareness and reading ability of elementary school students based on gender differences.

Students learn about phonological awareness from researchers. In addition, researchers explain each aspect of phonological awareness. The intervention class received this phonological awareness knowledge, while the control class received standard learning. Following the application of phonological awareness, the researcher observed the students. The type of observation used is participant observation, in which the researcher participates in the activities that the subject performs; more specifically, the observation will be carried out at the learning process stage using phonological awareness. The researchers then administered questionnaires to teachers to assess teachers' understanding of the relationship between gender and male and female students' phonological awareness and reading ability. The questionnaire will be given to educators in the form of a closed questionnaire (close-ended questionnaire) regarding the relationship between gender and phonological awareness and reading ability.

This study conducted in Cirebon area's Elementary School setting. Participants in this study were low-grade primary school pupils and instructors who had taken English classes and already possessed entry-level reading abilities. Four different types of data gathering methods, including applying phonological awareness to

students, observations, questionnaires, and interviews, were used in this study. Phonological awareness is introduced to pupils by researchers. Each component of phonological awareness was also described by the researcher. The researcher observed the students after putting phonological awareness to use (Creswell, 2012). The method of observation employed is participant observation, in which the researcher actively participates in the subject's actions. More specifically, the observation too place throughout the learning process when phonological awareness is being used. Researchers also administered questionnaires to instructors in order to learn more about their perceptions of the connections between gender and the phonological awareness and reading proficiency of male and female pupils. Teachers received a closed-ended questionnaire more about relationship between gender, phonological awareness, and reading abilities. Teachers also questioned in interviews to learn more about participants' perceptions of gender in connection to phonological awareness and reading proficiency. The following phase is data analysis after the research data has been collected.

RESULTS AND DISCUSSION

In this study, researchers examined the developing pattern in first-graders' Phonological Awareness. Additionally, the researchers looked at how gender differed in Phonological Awareness. The researchers discovered the majority of the subtests showed evidence of PA developmental directions, such as strip initial consonant, supply initial consonant, initial consonant same, initial consonant different, initial consonant not same, final consonant same, final consonant different, rhyme choice, rhyme supply, and substitute initial consonant. Table 1 shows descriptive statistics for each of the ten phonological awareness measures, calculated with the ten phonological tasks as the set of dependent measures, with sex differences in the data noted.

Table 1. *Phonological awareness test result*

Subtest	Male		Female		F
	M	SD	M	SD	
Strip initial consonant	4.00	2.236	4.85	2.703	0.822
Supply initial consonant	3.73	1.486	5.31	2.529	4.167
Initial consonant same	3.67	1.633	5.69	2.428	6.873
Initial consonant different	3.53	1.125	6.00	2.517	11.754
Initial consonant not same	3.73	2.086	5.46	1.761	5.509
Final consonant same	3.67	1.877	5.77	2.242	7.301

Final consonant different	3.13	1.060	5.46	2.332	12.123
Rhyme choice	3.33	1.234	6.38	1.502	34.824
Rhyme supply	3.13	1.060	5.85	2.035	20.368
Substitute initial consonant	2.80	1.014	6.08	1.656	41.087

Based on the findings of the subtests that were administered, several tests appear to be challenging for pupils. Male students typically do worse than female students on each subtest, as seen by their lower scores. The substitute initial consonant has a mean score of 2.80, making it the most challenging for male students to pass. The strip initial consonant, which has a value of 4.85, is the sub-test that male students find to be the most challenging, despite it being the easiest for female students.

The rhyming choice sub-test saw excellent performance from female students. Females achieved the highest mean ($M = 6.38$). This concurs with what Duranovic et al. (2012) discovered in their research. This may make sense given that the growth of PA in the early years begins with syllable awareness, followed by onsets and rhymes awareness, then PA awareness (Tate et al., 2004). PA evolves along a continuum that starts with syllable manipulation and moves on to phoneme manipulation. According to research by Carroll et al. (2003), children's phoneme skills develop later than their rhyming skills. This outcome is in line with Pullen and Justice's (2003) recommendation that easy tasks, such as rhyme discrimination, be introduced first when teaching rhyming before progressing to more challenging tasks, like rhyme production or generation.

The initial consonant strip is a subtest that does not provide much evidence of gender differences in results. With $M=4.85$ and male students with $M=4.00$, female students continue to perform better. Female students still outperformed male students on the first consonant supply sub-test for all starting consonants, including the same, different, and not the same. Compared to the final consonant different ($M = 5.46$), the final consonant same ($M = 5.77$) appears to be simpler. There are further challenging subtests in the same and different final consonants, with female students continuing to do well.

In this study, the overall trend of gender differences in PA was that females did better than males in each of the subtests. In their study on the growth of PA in elementary students, Lundberg et al. (2012) identified a distinct gender effect. They came to the conclusion that this obvious advantage could be related to the early stimulation

of language processes in females. Males begin life with a slight verbal advantage while females demonstrate greater spatial skills. These variations may result in various ways for both sexes to engage with the outside world. Males typically prefer physical manipulation of items, whereas females typically choose verbal and social contact. As a result, the linguistic and spatial ability difference between men and women widens.

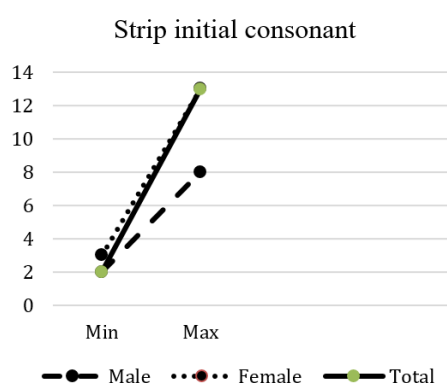


Figure 1. *Strip initial consonant*

Figure 1 displays the strip initial consonant subtest's minimum and maximum values. Male students scored the lowest at 2 and the highest at 10, whilst female students scored the lowest at 3 and the greatest at 13. The range of the total score is from 2 to 13, with 13 being the highest.

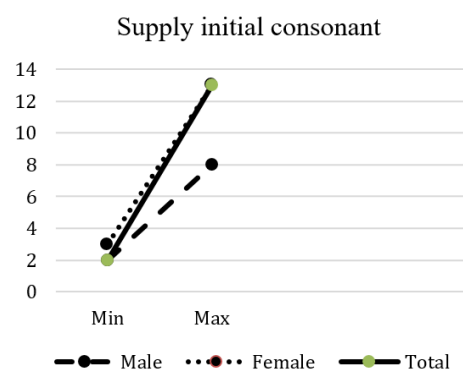


Figure 2. *Supply initial consonant*

According to the results of a different subtest, namely supply initial consonant, male students scored between 2 and 8, with 8 being the highest. In contrast, the lowest and best scores for female students are 3 and 13, correspondingly. The lowest score for this subtest is 2, and the best is 13.

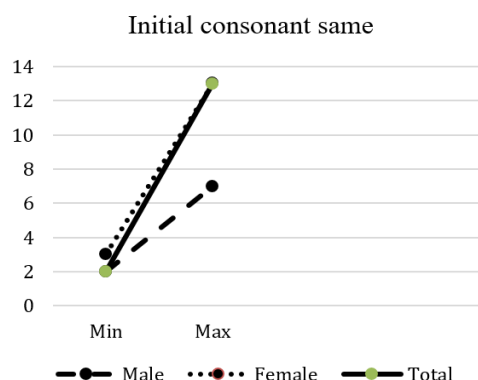


Figure 3. *Initial consonant same*

The initial consonant is the following subtest. The lowest score a male student can receive on this subtest is 2, and the best is 7. With the lowest score being 3 and the best being 13, female students performed better than male pupils. The lowest and highest scores for this subtest were 2 and 13, respectively.

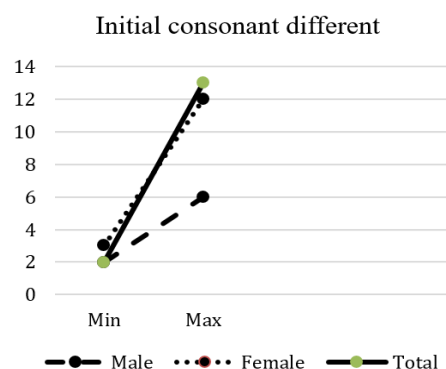


Figure 4. *Initial consonant different*

For initial consonant different sub test, male students scored the lowest at 2, and the highest at 6, on the initial consonant difference sub-test. This contrasts with female pupils, who had the lowest score of 3 and the maximum score of 12. This subtest's lowest and highest scores are 2 and 12, however.



Figure 5. *Initial consonant not same*

Female students nonetheless outperformed male students on the initial consonant not same subtest. In this subtest, males receive a maximum

score of 8, with a minimum score of 2. Compared to male students, female students have a lower average score of 3 and a higher average of 10. The minimum and maximum scores for this subtest are 2 and 10, accordingly.

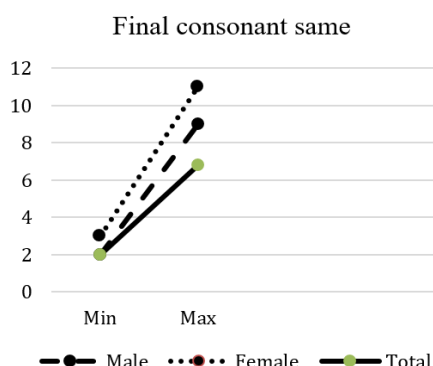


Figure 6. *Final consonant same*

Final consonant same is a further subtest. Students' scores on this subtest range from 2 for males to 9 for females, with the lowest being 2 and the highest being 11 for females. This subtest has a range of totals between 2 and 11, with 11 being the highest.

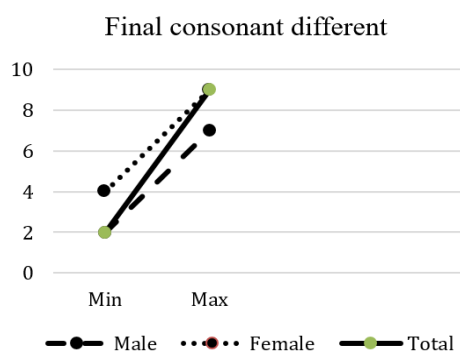


Figure 7. *Final consonant different*

Male students scored 2 and 7 correspondingly for the final consonant different. Female students consistently receive higher grades, with the lowest being 4 and the highest being 9. This demonstrates that a total score of 2 is the lowest and a score of 9 is the greatest for this subtest.

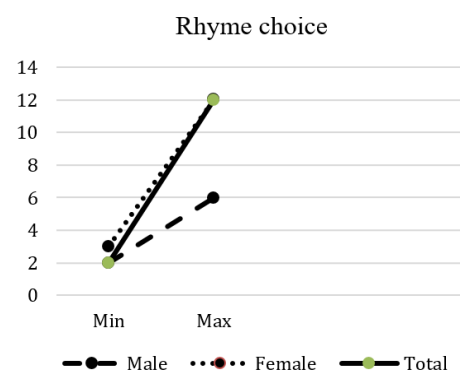


Figure 8. *Rhyme choice*

In rhyme choice sub test, male students scored the lowest at 2 and the highest at 6 on the subtest for rhythm choice. Women students, however, received the lowest 3 and best 12 scores. This subtest has a range of scores between 2 and 12, with 12 being the highest

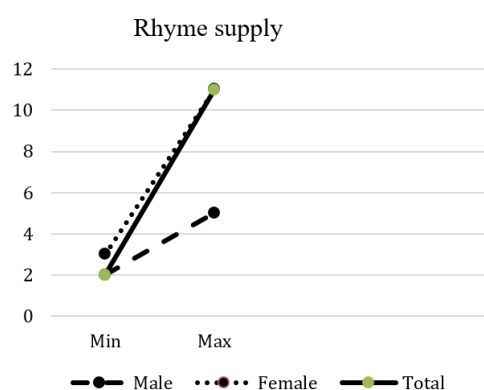


Figure 9. *Rhyme supply*

Substitute initial consonant and rhyme supply are the final two subtests. Male students performed the worst on the rhyme supply subtest with a score of 2, and the best with a score of 5. Female students, on the other hand, had scores ranging from 3 to 11. This subtest's lowest and highest scores were 2 and 11, respectively.

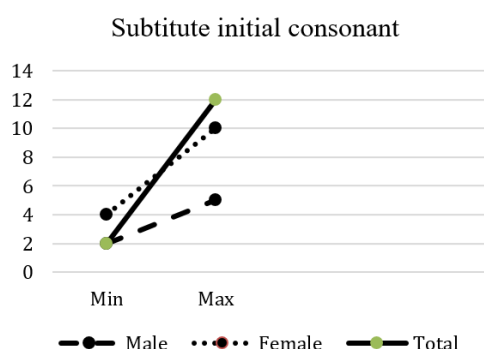


Figure 10. *Substitute initial consonant*

The substitute initial consonant subtest is the final test, and in this subtest, male students score between 2 and 5, with 5 being the highest. For female students, the lowest and highest scores are 4 and 10, respectively. In this subtest, the lowest total score is 2, and the best is 10.

CONCLUSION

According to the study's findings, phonological awareness subtests for all students revealed that female students outperformed male students overall. In contrast to their male counterparts, female students therefore have greater reading abilities. Students that have strong phonological awareness are better able to comprehend the first stages of learning to read. The findings of this

study offer recommendations for primary school teachers on how to help male children learn about phonological awareness. Primary teachers should be made aware of how they might contribute to a gender-equitable learning environment by carefully examining their own ideas on gender roles and making sure they do not support gender-specific attitudes and behaviours in order to raise the reading proficiency of boys in school.

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