

Constructing an Adaptive Linguistically-Based Reading Program for Indonesian Students with Reading Difficulties: Success Story of TAL-ID

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Abstract. Students with reading difficulties (including but not limited to dyslexia) in Indonesia and their teachers have been in a dire need for reading-intervention programs that are scientific, precise, adaptable to the needs and strength of individual students, easily administered in (public) schools, and affordable financially and time-wise. The purpose of this study was to determine whether the TAL-ID (Harwintha's Adaptive Linguistically-Based Indonesian Reading; [1]) program was a good candidate for such programs. Two students with severe reading difficulties in their fifth and sixth grades participated and received weekly tutoring following the principles outlined in TAL-ID program. The treatment started in the second semester of the fifth grade and continued to the first semester of the sixth grade due to the availability of the students and the researcher outside of formal class hours. The students were taught one-on-one for 35 sessions of 35 minutes each. Before the first session, the students' reading-aloud (decoding) performance was assessed using the Tes Membaca Satu Menit [2] and was assessed again in the 35th session. The reading performance of the two students at the end of the program was compared to their initial performance, and to the performance of 11 fifth-grade students recorded before the intervention program began. The comparisons showed: 1. the two participants showed impressive progress for the syllable structures that were treated, in terms of both accuracy and speed; 2. although they still lagged behind their peers, the incorporation of TAL-ID had shown progress that the previous methods used, both whole-group and one-on-one, failed to create. This strongly suggests that the TAL-ID program is a promising reading-intervention program targeted specifically at students in Indonesia who have reading difficulties reading Indonesian. The clinical and educational implications are discussed.

Keywords: reading intervention; reading difficulties; Indonesian reading; Tes Membaca Satu Menit; linguistically-based reading therapy; TAL-ID approach

INTRODUCTION

Although Indonesia had had the National Education System Law that included inclusive education since 2003, the details and practice of education for students with reading difficulties were not officially in place yet as of 2026. Reading difficulties were agreed as one of the learning difficulties experienced by students globally [3]. Students with reading difficulties struggled to master reading skills and lagged behind their peers. Coupled with the lack of reading specialists and supportive text books in Indonesia, the schooling of these children was not supportive for their academic success. In this article, the guidelines of [4] regarding the identity of sounds and letters discussed were followed: sounds or phonemes were enclosed in slanted brackets (/ /) and letters or graphemes in square brackets ([]).

An observation into the national book for the course Bahasa Indonesia (Indonesian Language) in the most-recent Merdeka Belajar curriculum [5] showed that first-grade students were only given assistance in the form of reading aloud by teachers in the first twenty pages of the book. Henceforth, they were asked to read independently words that were not graded according to difficulty levels. Some examples were the words *bebek* and *benang* that appeared on page 21. These words are irregular in that they contain the letter <e> that can read as /e/ and /ə/, and the digraph <ng> that is read as /ŋ/. This condition obviously did not help students with reading difficulties. To be able to read, they needed to learn to read decodable words.

The ultimate goal of reading is that readers are able to pair the written words with their meanings. To read successfully, readers employ two kinds of strategies: non-lexical and lexical strategies. In the non-lexical strategies, readers make use of the Grapheme Phoneme Correspondence (GPC) or the mapping between the letters and their sounds to decode the words. After some experience using this strategy, readers develop the lexical strategy that maps the written words directly to their meanings [6]. By largely bypassing the phonemes or sounds, the use of the lexical strategy saves some time for the readers and contributes to a faster and more fluent reading. For example, at first words that have the digraph *ng* such as <yang> need to be decoded by assembling the sounds of the letters *y* and *a*, and the digraph *ng*, resulting in the

phonological form /ya/. After several instances reading <yang>, students usually establish a connection between the letters and the sounds, and thus they do not need to sound out the letters anymore.

Reading interventions had been done in Indonesia (e.g., [7]; [8]; [9]) but almost all were all targeted towards students without reading difficulties. Although these studies were undoubtedly important, students with reading difficulties composed a good portion of students in the world (around 7% of primary school students around the world had dyslexia [10]) and thus were not ones to be ignored. To put the prevalence in the Indonesian public primary school context, 2-3 students in a class of 40 students may have reading difficulties. What was more important was that reading interventions for students with reading difficulties needed to be done by taking into account the characteristics of the language and orthography. The more straightforward pairings of letters and sounds should be taught earlier. However, one study conducted in the context of reading difficulties did not specify the syllables and words used, and there was no mention of orthography [11]. What was mentioned was just the syllable structure of Consonant-Vowel.

A study urged that Indonesian teachers be trained to give intervention strategies that were based on research [12]. Interventions for students with reading difficulties could not be the same as reading activities for students without reading difficulties, in terms of both the materials and delivery. Not differentiating the activities for the students with reading difficulties may result in passive students and drop outs [13]. Therefore, not only goodwill and a willingness to assist, but also research-based intervention programs are needed for interventions to be successful and helpful for students with reading difficulties.

The present study aimed to assess whether the intervention based on the principles of the TAL-ID approach resulted in progress in the reading of the students with reading difficulties.

METHODS

All the materials used in the tests and intervention had been adjusted to fit for the needs of the students with reading difficulties. The size of the pages and fonts, and the fonts themselves were chosen to make sure that the students did not have difficulties with them. They were not too small and too complicated or artsy. This was done so that the research could ascertain that problems that happened were due to the reading difficulties and not the physical attributes of the materials.

Participants

Ten grade five students were in the control group. These students went to the same school as the two students with reading difficulties who formed the experimental group. All students had no history of speech delay, Developmental Language Disorder (DLD), intellectual disability, and hearing difficulties as informed by the class teacher and observed by the researcher.

The following are the demographic details of the participants. The students in the control group were given the initials A to J, and the students with reading difficulties were given the initials KK and LL.

Table 1. Demographic details of the participants (control participants: A-J; participants with reading difficulties: KK and LL)

No.	Initial	Age	Gender
1.	A	11 years 2 months	M
2.	B	11 years 2 months	F
3.	C	11 years 2 months	F
4.	D	11 years 3 months	F
5.	E	11 years 3 months	F
6.	F	11 years 3 months	M
7.	G	11 years 4 months	M
8.	H	11 years 6 months	F
9.	I	11 years 8 months	M
10.	J	12 years 1 month	M
11.	KK	12 years 9 months	M
12.	LL	13 years 4 months	M

Procedures

Pre-test

Control participants and experimental participants read 83 syllables arranged in 32 words, which were a part of the Tes Membaca Satu Menit [2]. Fifteen words had two syllables, fifteen words had three syllables and two words had four syllables. The syllable structure complexity ranged from simple (Consonant-Vowel <a>, <i>, <u>, and <o>), consonants with vowel <e> such as <te> in <tenaga> and <cen> in <cenderung>, syllables with simple-written rhymes (Consonant-Vowel-Consonant such as <yah> in <wilayah>), and syllables with digraphs such as <ling> in <paling> and <ngi> in <wangi>. The participants were recorded when they read the words aloud. Fluency and accuracy were then analysed.

Table 2 below lists the words used in the pre-test

Table 2. List of words in the pre-test.

No.	Words	No.	Words
1.	cara	17.	tenaga
2.	guru	18.	berani
3.	hari	19.	gereja
4.	tiga	20.	paling
5.	muda	21.	bunga
6.	bagi	22.	barang
7.	daya	23.	wangi
8.	juta	24.	sekarang
9.	data	25.	anggota
10.	kamu	26.	belakang
11.	satu	27.	cenderung
12.	budaya	28.	wilayah
13.	wanita	29.	sekolah
14.	bahasa	30.	sekitar
15.	negara	31.	informasi
16.	kepala	32.	perempuan

Intervention

The experimental participants underwent intervention that followed the principles of the TAL-ID [1]. The intervention took place in the library of the elementary school. The condition in the library was controlled in such a way that ensured maximum learning opportunities within the confines of what the school could provide. The participants each had about 35 minutes of intervention that was devoted mostly for reading and a bit for writing.

The intervention followed the pace of the experimental participants. When they had not mastered a certain syllable structure, more materials were sourced to be used. Therefore, there were no sets of materials decided at the outset of the intervention. The materials started from the simplest in terms of grapheme-phoneme correspondence or how the spoken sounds were written in the orthography of Indonesian. The intervention started with Consonant-Vowel syllable structure with the stop consonants produced most near the lips at the start (and <d>) and ending with fricatives and semivowels. The vowels were <a>, <i>, <u>, <o>, and <e>. The letter <e> was presented and learned the last because it could be pronounced as /e/ and /ə/ and thus was more difficult than the other vowels. After the Consonant-Vowel structure, the intervention continued to Consonant-Vowel-Consonant structure, in which the last consonant was written with just one letter. The order of the last consonant followed the order done in the first syllable structure, starting with the stops near the lips and ending with fricatives. After the second syllable structure was mastered, the third syllable structure was introduced. This third one phonologically is also Consonant-Vowel-Consonant but orthographically, the last consonant was written with two letters or a digraph. All of the words in the intervention had two syllables because the focus was on mastering the syllable structures, in terms of both accuracy and fluency. Adding one more syllable or reading three-syllable-word would make it more difficult for the participants and hindering their progress.

The researcher's teaching techniques were as important as the materials. The researcher as the facilitator made sure that the lights and room temperature were within a comfortable range for the students to study. However, the ambient sounds could not be controlled because the library did not have sound-proof walls and voices of the other students playing outside at the school field could be heard from inside the library. During the sessions, the students were given time 3-5 seconds to sound out each word that they were facing and the syllables in the words were pointed out by a finger or a pencil one by one by the researcher. This was a way to help the students focus on the words that were read and not anything else in their field of vision. Mistakes were shown by two taps on the syllables by a pencil or a finger, and if there were still mistakes, the students were asked to see very carefully the letters in the words. Scaffolding like this without

any reprimands were applied consistently throughout the sessions. Praises were given as appropriate to acknowledge the students' effort and performance.

Multisensory and meta-analysis were used, in addition to the usual techniques of reading printed materials and reading the words out loud. Multisensory meant that other senses are also used to support the reading activities. In practice, the students used pictures of objects to recall the memory from their minds, including the sounds of the object names. Meta-analysis made use of the experimental participants normal intelligence to reason about the sounds of objects and the grapheme-phoneme correspondence in Indonesian orthography, especially for cases of irregularities such as the letter <e> when it was meant to be read as the schwa. The schwa was not the sound that directly linked to the grapheme <e> because the letter name was /e/ and thus children arrived at the sound /e/ more readily. To be able to choose the sound // meant that the participants had to be able to recall from memory, for example, that /bəli/ existed in their memory (mental lexicon), instead of /beli/.

Post-test

On the last day of the intervention, the post-test was carried out. In keeping with the latest reading materials, the two students with reading difficulties read aloud story-books with comparable syllable structures as the pre-test materials. The results were then compared with the results of their pre-test in order to see whether there was progress in terms of accuracy and fluency.

Table 3. List of words in the post-test.

Source	No.	Words	Source	No.	Words	Source	No.	Words	Source	No.	Words
Mungkin... Aku Bisa Bantu	1.	ini		31.	dina		61.	akan		91.	menetas
	2.	pipi		32.	berani		62.	baca		92.	itu
	3.	pipi		33.	cerita		63.	buku		93.	ibu
	4.	baru		34.	kupu- kupu		64.	nenek		94.	mereka
	5.	di		35.	ada		65.	baca		95.	kira
	6.	sini		36.	ulat		66.	cerita		96.	itu
	7.	kamu		37.	ulat		67.	seru		97.	ibu
	8.	kenapa		38.	tidur		68.	sekali		98.	mereka
	9.	aku		39.	lalu		69.	nenek		99.	aku
	10.	bisa		40.	jadi		70.	beri		100.	bukan
	11.	satu		41.	kupu- kupu		71.	kado		101.	ibu
	12.	bantu		42.	cerita		72.	buku		102.	kamu
	13.	gigi		43.	dina		73.	aku		103.	apa
	14.	aya		44.	seru		74.	jadi		104.	itu
	15.	sakit		45.	cerita		75.	suka		105.	ibu
	16.	sini		46.	dina		76.	baca		106.	iya
	17.	kepala		47.	lucu	Itu Ibu	77.	ini			
	18.	kamu		48.	terima		78.	ibu		107.	ini
	19.	kenapa		49.	kasih		79.	bubu		108.	ibu
	20.	hore	Buku Nenek	50.	nama		80.	ini			
	21.	kita		51.	aku		81.	telur			
	22.	jadi		52.	juli		82.	ibu			
	23.	teman		53.	aku		83.	bubu			
	24.	iya		54.	lagi		84.	ibu			
Taman Kupu-Kupu	25.	dina		55.	ketemu		85.	bubu			
	26.	suka		56.	nenek		86.	lagi			
	27.	kupu- kupu		57.	ini		87.	cari			
	28.	dina		58.	nenek		88.	makan			
	29.	pemalu		59.	aku		89.	telur			
	30.	tapi		60.	kami		90.	lalu			

Data analysis

The students' performance in the pre-test were scored for accuracy and fluency. The pre-test performance was compared to the performance of the students without reading difficulties to see the discrepancy. The reading performance of the students with reading difficulties was assessed several times during the intervention period and was checked for accuracy and fluency as well. At the end of the intervention period, the post-test was administered and the results were compared to those of the pre-test. Any progress in the performance of the students with reading difficulties were noted from the comparison and were also noted by comparing their performance to that of the control students.

RESULTS AND DISCUSSION

The results of the intervention study is presented below and discussed in relation with the research questions and previous literature on reading difficulties.

Pre-test Result

Table 4. Pre-test results (control participants: A-J; participants with reading difficulties: KK and LL)

No.	Initial	Age		Gender	Accuracy (in syllables)	Mistakes	Fluency
1.	A	11 years 2 months		M	80/83	Cenderung read as ceredu	22 seconds (1.5 word per second)
2.	B	11 years 2 months		F	77/83	Ba in bagi read as pa , ta in juta read as ga , ta in data read as tang , ngi in wangi read as gi , cen and rung in cenderung read as ce and ru	32 seconds (1 word per second)
3.	C	11 years 2 months		F	83/83	-	23 seconds (1.4 word per second)
4.	D	11 years 3 months		F	73/83	Ba in bagi read as pa , ta in data read as tang , tenaga read as tangan , ba in barang read as da , cen and rung in cenderung read as cer and ru .	57 seconds (0.6 word per second)
5.	E	11 years 3 months		F	83/83	Muda was read as pemuda	35 seconds (0.9 word per second)
6.	F	11 years 3 months		M	83/83	-	30 seconds (1.1 word per second)
7.	G	11 years 4 months		M	83/83	-	20 seconds (1.6 word per second)
8.	H	11 years 6 months		F	83/83	-	40 seconds (0.8 word per second)
9.	I	11 years 8 months		M	83/83	-	27 seconds (1.2 word per second)
10.	J	12 years 1 month		M	80/83	cen in cenderung read as ce , for in informasi read as co , lah in sekolah read as la	36 seconds (0.9 word per second)
11.	KK	12 years 9 months		M	4/83	The other words apart from cara and hari were spelled and read wrong.	More than 3 minutes with very low accuracy (less than 0.2 word per second)
12.	LL	13 years 4 months		M	11/83	The other words apart from cara, budaya, guru, hari and tiga were spelled and read wrong.	More than 3 minutes with very low accuracy (less than 0.2 word per second)

The students without reading difficulties (A-J) all made predictable mistakes. The first kind of mistakes was substituting letters that did not change the syllable structure (saying pa instead of ba for the word bagi) but resulted in a more familiar content word (i.e., pagi meant morning, whereas bagi meant for). The second kind of mistakes also resulted in more familiar words but they changed the syllable structure, for example adding the digraph ng to the consonant-vowel ta that resulted in the syllable tang. Tang in turn resulted in datang (come) that was presumably more familiar to the students than data (also data in English). The third group of mistakes was omission of the second consonant in a syllable, such as cen in cenderung read as ce, and lah in sekolah read as la. Lastly, the fourth group of mistakes was simplification or regularization where digraph ng was reduced into just one of the letters (wangi read as wagi) or omitted altogether (cenderung read as cenderu). Although these were clearly inaccuracies because the students did not read correctly what was written, there were proof of mastery of letters and their corresponding sounds. The mistakes had reasons behind them and not some random guesses.

The fluency of the students without reading difficulties was also very good. Their reading took from 22 to 57 seconds. While reading aloud had a motoric component that varied among people, this component did not seem to make the homeroom teacher put the students in the slow extreme (longer than half a minute) in the reading difficulties group. Therefore, it is reasonable to state that the range of normal fluency to read aloud 83 syllables was between 20 and 57 seconds.

The students with reading difficulties performed a lot more poorly than the control students. They could read only the words that had consonant-vowel-consonant-vowel structure with simple writing, such as <cara> and <budaya>. And even those, they were very few. The more complex ones, namely the ones with a second consonant and diphthong, were read inaccurately. They also needed to spell each and every one of the letters and needed a lot more time to string the letters into syllables, albeit often inaccurately. This compromised their fluency. The results of the pre-test established that the students with reading difficulties were very far behind in their reading.

Intervention details

Table 5. List of intervention sessions, materials, and participants' performance

Number of sessions	Materials discussed	Performance of the participants with reading difficulties
14	Consonant-Vowel (a, i, u, o, e)	KK read slowly but accurately most of the time. Did not have problems with syllables with different vowels (e.g., pita) LL read more slowly and less accurately than P1. Also had problems with syllables with different vowels. The second vowel would frequently read as the first vowel (e.g., reading pita as piti)
7	Consonant-Vowel, Consonant-Vowel- Consonant not digraph	KK could quite easily grasp the concept of the second consonant in a syllable, although the consonant t presented more difficulties than other consonants. LL most of the time started with just Consonant-Vowel and had to be prompted to acknowledge the second consonant. His being able to finally produce the second consonant was enabled in part by the multisensory technique of listening and producing the consonant sounds and relating those to the letters that represented the consonants.
14	Consonant-Vowel, Consonant-Vowel- Consonant not digraph and Consonant-Vowel- Consonant digraph ng	The understanding that digraph <ng> was represented by one phoneme, namely //, had to be drilled again and again for the two participants. Notwithstanding that they forgot the previous materials and had to be reminded. This impacted the number of sessions that was needed in order for the Consonant-Vowel-Consonant digraph ng syllable structure to be considered mastered.

The second consonant in a syllable such as papan was difficult for both LL and KK, but KK took longer to master it. LL could follow and apply the explicit instruction to attach the second consonant to the syllable after about 4 sessions. However, KK had to read the words such as papan in two steps for quite longer than it took LL. The two steps were papa first, and then the researcher would point out that there was the letter n and that LL had to join the n to the pa, and LL tried to read papan again as one word. The second consonant problem was very much exacerbated for KK when the two syllables had the letter e in one of them, such as the word teman (friend). The letter e was almost always read by KK as /e/ which was in line with the letter name. There seemed to be two things making reading words with e more difficult, namely deciding the correct sound for the letter e in the particular words being read and pronouncing the second consonant (n) in the second syllable of the word.

Understanding that the digraph <ng> was to be read as one sound was a challenge for KK and LL. The researcher had to devise a way to jog their memories to remember the letters and their sound. The way took the form of explicitly saying the letter names (/en/ and /ge/) and saying "read as ..., while at the same time pointing at the syllable." It took a lot of tries before the grapheme-phoneme correspondence between the letters <ng> and their sound was established in the reading of KK and LL.

Towards the end of the intervention program, KK's performance was very similar to that of the middle control group. His accuracy and fluency had increased. However, LL continued to spell the words he read. At the beginning, he spelled audibly. After being asked to try to not spell and to try remembering the letters of frequent words in order to read them, he spelled silently. Nevertheless, this still cost him time. His fluency was still compromised at the same time as his accuracy gradually increased.

When the progress of reading words with second consonants was very slow, a multisensory approach using words written on cards and pictures, and various activities was employed to speed up the progress. The reason behind the multisensory approach was that activating the objects and their names would help the students access the sounds in the object names and map those sounds to the letters representing them. One example of the activities were a choose-the-word activity where the students were presented with two written words on cards, listened to a target word, and choose which written word matched the spoken word. Although this was an activity with a low cognitive load, it was still very important because it repeatedly exposed the students to the second consonants and how they were written. It was also very important because both KK and LL scored almost perfect every time and this boosted their confidence. The only difference was LL took a few more seconds longer to choose the correct written word. Another example was a write-the-word-and-read-it activity where the students were presented with pictures of objects or animals, asked to write their names, and asked to read the words that they had written. This was a fun and important activity because they could see interesting pictures while at the same time practice the syllable structure that posed difficulties for them. Below is an example of a picture used in this second activity.

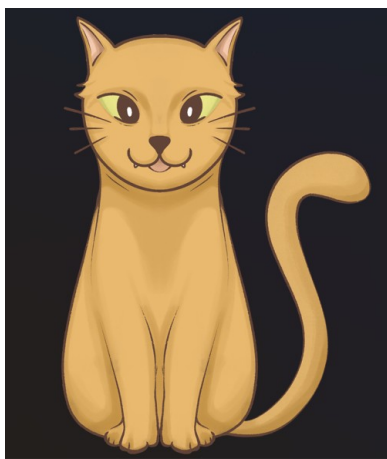


Figure 1. Kucing (cat)

Post-test Result

Table 6. Post-test accuracy result of the students with reading difficulties.

No.	Words	KK	LL	No.	Words	KK	LL	No.	Words	KK	LL
1.	ini	✓	✓	37.	tidur	✓	✓	73.	jadi	✓	✓
2.	pipi	X (pipit)	✓	38.	lalu	✓	✓	74.	suka	✓	✓
3.	pipi	✓	✓	39.	jadi	✓	✓	75.	baca	✓	✓
4.	baru	✓	✓	40.	kupu-kupu	✓	✓	76.	ini	✓	✓
5.	di	✓	✓	41.	cerita	✓	✓	77.	ibu	✓	✓
6.	sini	✓	✓	42.	dina	✓	✓	78.	bubu	✓	✓
7.	kamu	✓	✓	43.	seru	✓	✓	79.	ini	✓	✓
8.	kenapa	✓	X (/e/)	44.	cerita	✓	✓	80.	telur	✓	✓
9.	aku	✓	✓	45.	dina	✓	✓	81.	ibu	✓	✓
10.	bisa	✓	✓	46.	lucu	✓	✓	82.	bubu	✓	✓
11.	bantu	✓	✓	47.	terima	✓	✓	83.	ibu	✓	✓
12.	gigi	✓	✓	48.	kasih	✓	✓	84.	bubu	✓	✓
13.	aya	✓	✓	49.	nama	✓	✓	85.	lagi	✓	✓
14.	sakit	✓	✓	50.	aku	✓	✓	86.	cari	✓	✓
15.	sini	✓	✓	51.	juli	X (Julia)	✓	87.	makan	✓	✓
16.	kepala	✓	X (/e/)	52.	aku	✓	✓	88.	telur	✓	✓
17.	kamu	✓	✓	53.	lagi	✓	✓	89.	lalu	✓	✓
18.	kenapa	✓	X (/e/)	54.	ketemu	✓	X (/e/)	90.	menetas	✓	X (/e/)
19.	hore	✓	✓	55.	nenek	✓	✓	91.	itu	✓	✓
20.	kita	✓	✓	56.	ini	✓	✓	92.	ibu	✓	✓
21.	jadi	✓	✓	57.	nenek	✓	✓	93.	mereka	✓	X (/e/)
22.	teman	✓	✓	58.	aku	✓	✓	94.	kira	✓	✓
23.	iya	✓	✓	59.	kami	✓	✓	95.	itu	✓	✓
24.	dina	✓	✓	60.	akan	✓	✓	96.	ibu	✓	✓
25.	suka	✓	✓	61.	baca	✓	✓	97.	mereka	✓	✓

No.	Words	KK	LL	No.	Words	KK	LL	No.	Words	KK	LL
26.	kupu-kupu	✓	✓	62.	buku	✓	✓	98.	aku	✓	✓
27.	dina	✓	✓	63.	nenek	✓	✓	99.	bukan	✓	✓
28.	pemalu	✓	✓	64.	baca	✓	✓	100.	ibu	✓	✓
29.	tapi	✓	✓	65.	cerita	✓	✓	101.	kamu	✓	✓
30.	dina	✓	✓	66.	seru	✓	✓	102.	apa	✓	✓
31.	berani	✓	✓	67.	sekali	✓	X (/e/)	103.	itu	✓	✓
32.	cerita	✓	✓	68.	nenek	✓	✓	104.	ibu	✓	✓
33.	kupu-kupu	✓	✓	69.	beri	X (biar, beli)	✓	105.	iya	✓	✓
34.	ada	✓	✓	70.	kado	X (kotak)	✓	106.			
35.	ulat	✓	✓	71.	buku	✓	✓		ini	✓	✓
36.	ulat	✓	✓	72.	aku	✓	✓	107.	ibu	✓	✓

Both KK and LL did very well in terms of accuracy. On the one hand, KK read accurately almost all of the 107 words. His mistakes could be explained by confusion with other similarly spelled words that fit with the context of the stories, such as reading kado (gift) as kotak (box). Kado and kotak shared almost all letters and the gift in the story was a book that had a shape similar to a box. On the other hand, LL's mistakes all concerned the letter e that should have been pronounced as / / in the words. Although KK and LL had been taught to consult their memories to access the correct pronunciation of the words that contained the letter e, LL seemed to be less successful. His default was to always pronounce /e/. In the next table, the result concerning fluency is presented.

Table 7. Post-test fluency result

Initials	Source read	Number of words	Fluency (word per minute)
KK	Mungkin... Aku Bisa Bantu	23	95 seconds (0.24 word per second)
	Taman Kupu-Kupu	25	40 seconds (0.6 word per second)
	Buku Nenek	26	58 seconds (0.45 words per second)
	Itu Ibu!	31	44 seconds (0.7 word per second)
LL	Mungkin... Aku Bisa Bantu	23	212 seconds (0.1 word per second)
	Taman Kupu-Kupu	25	129 seconds (0.19 word per second)
	Buku Nenek	26	130 seconds (0.2 word per second)
	Itu Ibu!	31	190 seconds (0.16 word per second)

KK's fluency when reading two of the books was comparable to the fluency of D and H in the pre-test of the students without reading difficulties. Even though it was evident from the pre-test result that D and H's fluency was in the lower range of normal, it was clear that KK's fluency improved a lot. Coupled with his accuracy, the post-test result showed a marked improvement. As for LL, his fluency was very low. He only managed 0.16 word per second on average. This slowness was the result of spelling or non-lexical strategy. LL still had to spell the letters, read syllables, and only then could he pronounce the full words. His reading was very slow going.

To conclude from the accuracy and fluency results, KK and LL had different results. KK's accuracy and fluency had attained the normal performance when compared to the pre-test result of students without reading difficulties. Meanwhile, LL's accuracy had attained the normal level, but his a fluency had not. For LL, the intervention had helped his accuracy but not yet his fluency.

Discussion

The results of the present study provided insight into the extent to which an intervention based on the principles of the TAL-ID approach contributed to improvements in the reading performance of students with reading difficulties. The two students with reading difficulties had improved their reading performance at the end of the intervention period. Although both students started with non-lexical reading strategy, only LL employed the strategy throughout the 32 sessions without apparent use of the lexical strategy. This suggested that the TAL-ID approach contributed to improvements in reading performance but the end result after a certain period of intervention may differ due to factors that we are going to discuss further in this section.

The most important takeaway was that the reading intervention conducted resulted in improvements in the reading performance of the participants but the aspect that showed earlier gains were accuracy. This may have been due to a difference in the severity of the reading difficulties. LL may have had a more severe condition and thus needed more intervention sessions or longer sessions in order to achieve what had already been achieved by KK. Unfortunately, due to the design of the study, this could not be verified. Despite this, there were similarities between our two students with reading difficulties and the participants with dyslexia in the study of Yu et al. [12] to support the assumption of different severity between KK and LL.

For teachers, understanding that students' accuracy benefitted earlier than fluency is of paramount importance because even though the students are not able to read fast yet, they have actually progressed. This progress, in turn, should not be taken for granted. The students have worked hard and processed the intervention materials to the best of their ability. Furthermore, the TAL-ID approach has also contributed a big part of the progress. The same amount of time and effort may not result in comparable success if the materials are organized and levelled differently.

Taking into account the participants with reading difficulties in the current research, who were two students in the fifth grade of elementary school, the gains that they showed in the post-test bridged what should have been achieved in the regular lessons and what they could reasonably achieve in a weekly intervention program. The performance shown in the post-test was still far from adequate if we were to take into account the fact that they graduated from elementary school right after the intervention period and had to attend junior high school. However, it gave a picture of how long an intervention based on the principles of the TAL-ID was needed for students similar to KK and LL to read at the level of their grade. Using this understanding, it was possible to help public elementary schools avoid producing graduates who were still struggling to read.

The current study was also an attempt to answer the call from [14] to scholars in Indonesia to construct a reading program that was scientific and evidence-based. If we were to use text books in the curriculum to teach reading to students with reading difficulties, we may not reach the goals in the time frame that the students have. This was quite simply because the reading materials in the text books were not arranged with the needs of students with reading difficulties in mind. Therefore, we strongly advocate that the TAL-ID approach or programs that follow the approach be used in the general teaching of reading and more individualized sessions in schools (Tiers 1-3 in the Responsiveness to Intervention Model (RTI) [15]). Using the TAL-ID approach in Tier 1 may reduce the cost and time needed by students to master reading, and avoid prolonged difficulties for those with mild reading difficulties. This would be a win-win situation for all parties involved in reading lessons in schools.

The relatively small sample may have reduced the extent to which the findings can be generalized to the broader population. Future studies should replicate the methods of the current study in a bigger sample of students with reading difficulties in order to see if the current results are also replicated. Having participants from different age groups and severity levels may also aid in the quest to come up with a reading intervention program that benefits as many students as possible.

CONCLUSION

The comparative results of the study yielded two crucial insights: first, both participants demonstrated marked gains in decoding accuracy and speed across the targeted syllable structures; second, while their performance remained below age-matched peer norms, the implementation of TAL-ID facilitated progress that prior class-teacher administered whole-group and individualized interventions had failed to achieve. Taken together, these results provide compelling preliminary evidence for TAL-ID as a viable, tailored reading-intervention tool for Indonesian learners experiencing reading difficulties.

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