

Development of Angi Moti's Beginning Reading Method (BRM), to Improve Elementary School Students' Reading Skills

Moh. Aminullah^{1*}, Ni Ketut Suarni², Ida Bagus Putrayasa², Ketut Suma²

^{1*,2} Ganesha University of Education, Singaraja Bali, Indonesia

*Corresponding Author: aminullah@undiksha.ac.id

Abstract

Reading is a fundamental skill that all students must master. Many Beginnings Reading Methods (BRMs) have been developed by experts, yet more than 50% of first-grade elementary school students still cannot read by the time they reach second grade. This research aims to develop and produce a BRM design as an initial reading method for early elementary school students, consisting of BRM learning steps. The method used to develop Angi Moti's BRM is Thiagarajan's Four-D model. The steps developed include reading sound letters, syllables, words, and sentences. The letters introduced initially are the 13 independent sound letters: a, i, u, e, o, m, n, l, s, r, z, f, and h. Afterward, students are taught to read sound letters independently until they can read sentences. According to experts, the developed learning steps are highly valid (Aikens $V = 0.92$). After being taught and used in class, teachers found the method to be highly practical (Gregory's analysis showed a score of 97). Analysis of the students' pre- and post-test scores indicated a substantial improvement in their reading skills. The high normalized gain (N-gain) value of 0.90 confirms the method's effectiveness. According to teacher interviews, this method enables students to read in around 24 sessions (8 weeks), which is significantly faster than the previous approach of spelling, letters, and syllables that took nearly six months.

Keywords: reading method, independent letters, sound letter

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Introduction

Reading is a very important language skill for humans, because reading is a window to knowledge. Current developments in science and technology demand the creation of a society that loves to learn [1]. Without reading, humans will experience many obstacles in living their lives. Reading is a way or one of the ways to increase knowledge, in addition to hearing and seeing. Therefore, reading must be taught to children from an early age.

In Indonesia, this process is formally taught starting in the first grade of elementary school. In Government Regulation (PP) Number 4 of 2022, concerning changes to Government Regulation Number 57 of 2021 concerning National Education Standards, Article 6 point (1). c., states that graduate competency standards in Elementary Education Units are focused on developing students' literacy and numeracy competencies for further education [2].

According to PISA (the Program for International Student Assessment), Indonesia's literacy rate is the lowest among participating countries. Indonesia scored 371, ranking 64th out of 70 participating countries. In the last four PISA surveys conducted, Indonesian students' reading scores remained low. The average reading scores were 359 (2022), 371 (2018), 397 (2015), and 396 (2012), while the average reading score for other countries was 487 (2018) [3]; [4]; [5].

In the PIRLS (Progress in International Reading Literacy Study), which specifically measures the reading literacy of fourth-grade elementary school students, Indonesia has

participated (and only participated) three times, in 2011, 2016, and 2021. The results obtained in the 2011 study were as follows: 66% of Indonesian students correctly answered the weak questions, 28% correctly answered the

medium questions, 4% correctly answered the high questions, and 0.1% correctly answered the perfect questions. The international median for the 2011 PIRLS test was 8%. Based on this, it can be said that the majority of Indonesian students still have difficulty solving questions in the high and perfect categories. These results are still far behind the achievements of students from neighbouring countries such as Singapore, which ranked first in reading literacy skills in informative tests [6]; [7]; [8]; [9] [10]; [11] [12].

To determine students' reading abilities, Indonesia use the INAP (Indonesian National Assessment Program). The INAP results for students in NTB (Nusa Tenggara Barat) show that are not as good as other provinces in Indonesia. NTB Province is ranked below in all aspects examined [13].

PISA, is an international study measuring the reading, mathematics, and science literacy of 15-year-old students. It is organized by the OECD (Organization for Economic Co-operation and Development) to evaluate and compare education systems across countries. Indonesia is one of 81 countries participating in the 2022 PISA. Indonesia's PISA results, particularly for reading literacy, are known to be below the average of other countries. Indonesia is also developing a similar test nationally, and the results are not far from the PISA scores. This situation is

*Author for Correspondence: aminullah@undiksha.ac.id

certainly concerning, and significant efforts are needed to improve the skills of Indonesian students so they can catch up with the reading literacy of other countries.

There are many factors that contribute to the low literacy skills of Indonesian students. One of them is the teacher's ability to teach their students to read. This is related to the teacher's ability and mastery of teaching reading using existing methods which should be improved over time [14]; [15]; [16]. Some popular methods used by teachers to teach and improve students' reading skills at the beginning stage include the letter method, syllable method, or the spelling method [17], [18], [19].

The use of these methods, based on the results of research and observations conducted, shows that there is a lack of synchronization between what the teacher teaches and what students understand. For example, when the teacher introduces the single letter /b/, this letter is read as [be] by the students and is recorded well in their brains. When the teacher then continues with the lesson on syllable formation, the students' difficulties begin. The teacher teaches the syllable /bo/ by combining the letters /b/ and /o/, and when students are asked to read the syllable, the students read it with the sound [be o]. This means that students read the letter /b/ independently with the sound [be] so that when the teacher asks students to read the syllable /bo/, the students read it as [beo]. This happens to almost all existing consonants, because the teacher introduces the consonants with the sounds of the syllables. The single letter /b/ is introduced as the syllable [be], the letter /k/ is introduced as [ka], the letter /t/ is introduced as [te], and so on. When this is done, it will certainly make students confuse. There is something inappropriate or not quite right in this matter. There are concrete things taught by teachers that are read by students that do not match what is desired.

This is also related to students' language acquisition, where the mother tongue influences their phonological awareness. Mother tongues are generally local languages/tribal languages that also have their own scripts. The Sanskrit script, which was commonly used in the archipelago, influenced many local scripts in Indonesia, such as the Balinese script, Lombok script, Javanese script, and others [20]; [21]; [22]; [23]; [24]; [25]; [26]; [27]. Many of these local scripts, when read, are syllable-based scripts, and are different from the Latin script which is letter-based. This is thought to be another cause of students' difficulties when starting to combine letters into syllables, as previously stated.

Therefore, it is necessary to devise simpler and easier methods for introducing letters and then reading them as syllables. If what students hear and then repeat during syllable learning is consistent, it will make it easier for them to begin learning to read. This research seeks to address this by formulating research objectives to develop and produce a design for a beginning reading method (BRM) for early elementary school students, consisting of learning steps. It is hoped that the developed method will be simple, making it easier for teachers to teach and students to read more quickly.

1. Research Methods

There are various methods used in this research, each corresponding to the steps taken. Several aspects related to these methods can be seen below.

2.1 Research Approach

This research uses a mixed approach, namely a qualitative and quantitative approach. This development research model is designed using the Thiagarajan development model — the Four-D Model [28]. The procedure for developing the Thiagarajan Four-D modified early reading method is as follows [29]; [30]; [31]: define, design, develop, and disseminate.

The developed design was validated by experts before being tested in three randomly selected elementary schools. First-grade teachers from the three pilot schools were previously taught the method in training. To determine its effectiveness, pre-test (before students were taught using this method) and post-tests (after the students were taught by the teacher using the early reading method) were administered to first-grade students in both the pilot and three control schools. The teachers were asked to assess the practicality of the designed method after using it in their classrooms.

2.2 Subject of the Study

The subject of this research is the design of Angi Moti's BRM. This design will develop the steps for learning to begin reading. The resulting design will be tested in the learning process in first-grade elementary school by teachers. This design will be tested for its validity, practicality, and effectiveness.

2.3 Data Collection

Data to assess practicality was collected through surveys and interviews with first-grade teachers who had implemented this early reading method. To determine the effectiveness of this early reading method, pre and post-test were conducted.

2.4 Data Analysis

The collected data was analysed using various existing methods. Among others, for instrument validation and validation of the resulting product (content, language and media) it was analysed using Aiken's V analysis [32], [33], [34]. For practicality of using the method, it was analysed using the Gregory model, while to determine the effectiveness of the method, N-gain analysis was used [35].

2. Result and Discussion

The development of the Angi Moti BRM has been successfully completed. The resulting design of the Angi Moti BRM has been validated by experts before being used in classroom teaching. The design model, results of teacher use, and its effectiveness can be seen in the following section.

3.1 Result

3.1.1. Angi Moti's BRM Design

The steps developed in Angi Moti's BRM are: 1) reading letters that can be pronounced, 2) learning to read syllables, 3) learning to read words, 4) reading syllables from unpronounceable consonants, and 5) reading simple sentences.

The letters introduced in the initial step are the 13 unpronounceable letters: a, i, u, e, o, m, n, s, r, l, z, f, and h. After recognizing the letters, students move on to the next step. Reading syllables is a critical point in all the steps of this BRM and is the most important part of the steps developed. In the fourth step, unpronounceable consonants are introduced using a syllabic model. There are also 13: be, ce, de, ge, je, ka, pe, qi, te, ve, we, ex, ye.

If students can read syllables, reading words and simple sentences will become easier.\

3.1.2. Validation of Angi Moti's BRM Textbook

Before conducting expert assessments, the developed instrument must first be validated. Validation by experts in their respective fields applies not only to the textbook but also to the instrument used to assess the practicality of this BRM and to the reading ability test instrument for students. The method used to assess the results of these expert assessments is the Aiken's V Analysis Method [36], [37], [38]. All instruments were assessed by the experts, with the results shown in the following table.

Table 1. Results of Instrument Assessment by Experts.

No.	Instrument	Expert Assessment Result	Aiken's V Score	Notes
1.	Textbook			
	a. Content	4.7	0.93	Several items were moved to language and media, including typos. Mistakes in wording, effective sentences, periods and commas.
	b. Media	5,0	1.00	
	c. Language	4.5	0.88	
2.	Practicality.	4.9	0.98	Appropriate, with only typos and effective sentence usage correction
3.	Student Test	4.8	0.96	Appropriate

After being validated by experts, the instrument was then used to assess textbooks. For textbooks, the validation included the content, the media used, and the language used. The results of this expert validation were also

analysed using Aiken's V-Analysis, and can be seen in the following section.

Table 2. Expert Assessment Results for Textbook Product Validation

No.	Aspect Assessed	Expert Assessment	Aiken's V Score	Notes
1.	Content	4.7	0.91	The use effective sentences and word.
2.	Language	4.7	0.92	
3.	Media	4.5	0.93	

3.1.3. Practicality of Using Angi Moti's BRM

To ensure the practicality of using the textbook, teachers who will be conducting the learning process were given training on the principles and how this BRM works. After learning using this method, the teachers were asked to assess the learning process using it. The practicality of this reading method was assessed by teachers by completing a previously validated form. In addition to completing the form, the teachers were also interviewed using a pre-prepared interview form. The data and interview results were then analysed using Gregory's analysis method [39], [40], [41], [42]. The score obtained was 97. This value indicates that the developed method is

very practical for use in beginning reading instruction in the classroom.

3.1.4. Effectiveness of Using the Angi Moti BRM

To find out the level of effectiveness of Angi Moti's BRM, carry out a test for students who have participated in the learning process in the classroom. The test was carried out in three sample schools (60 students) and three control schools (60 students). The average scores obtained from the pre and post tests for these students can be seen in the following section. The scores obtained by students were analysed using N-Gain analysis [43], [44] [45] [46] [47].

Table 3. Pre and Post Test Scores of Experimental and Control Schools.

No.	School Subject	Pre-test	Post-test	Score Increase	N-Gain
1.	Experimental School	11	91	80	0.90
2.	Control School	5	37	32	0.33

After analysis, the average N-Gain value obtained in the sample schools was 0.90, while in the control schools the average N-Gain was 0.33.

3.2 Discussion

Based on the research results obtained, the discussion related to how the design of the BRM steps was developed, the preparation and validation of the instruments used, the validation of the content/media and language used in the textbook product, the practicality of using the Angi Moti BRM, and how effective the use of this method is on students. All of these can be seen in the following section.

3.2.1. Design of BRM Steps

The research results show that the Angi Moti beginning reading textbook is highly valid and can be easily used by teachers, improving students' reading skills in a relatively short time.

The design of the Angi Moti BRM steps developed are:

- 1) recognizing/reading letters that can be pronounced,
- 2) learning to read syllables,
- 3) learning to read words,
- 4) reading syllables from unpronounceable consonants,
- and 5) reading simple sentences.

These five steps are an inseparable unit. This means that once the first step is completed, it is not necessary to complete the second or third steps. Once the introduction of five vowels has been taught, the second step, learning to form syllables, can be started. This means that it is not necessary to wait until all consonants (that can be pronounced) have been introduced before the next step is taken. Once just five vowels have been taught, learning to form syllables can begin. If four more consonants (which can be pronounced) are introduced, then learning syllables and even learning to read words can be done. So, recognizing the letters in the first step doesn't have to be done all at once until they're finished, before moving on to the second step. Once the teacher has taught the vowels and the four consonants, they can move on to learning how to form syllables, and then words. And so on until all the consonants (which can be pronounced) are taught and students are finally able to read words.

Once students can read words, the next step is to teach them to read consonants that cannot be pronounced by themselves. This is done by introducing these letters as syllables. This means that consonants that cannot be pronounced independently are taught to read syllables by adding a vowel before or after them. For example, the letter /b/ is taught to sound like [be], the letter /c/ with the sound [ce], the letter /k/ with the sound [ka], the letter /x/ with the sound [ex], and the letter /y/ with the sound [ye]. Vowels must be added before or after the consonants (which cannot be pronounced independently) to make them sound as explained previously. Once students can do

this proficiently, composing and reading sentences will not be difficult.

The steps developed in Angi Moti's BRM are actually based on two important principles. First, in this method, the process of recognizing letters is divided into two: recognizing letters that can sound independently (vowels and consonants) and letters that cannot sound independently (cannot sound without the support of a vowel). Second is the fact that the country of Indonesia, or what was formerly called the Nusantara, has its own script to produce the desired reading and writing. This script is not just one, but many varieties according to each tribe and location. For example, Javanese script, Balinese script, Lontara script, Sundanese script, Malay script and others. If observed carefully, all of these scripts are used to read knowledge and ideas written by each tribe in their respective regions. So this script developed according to the local language used, and almost all of this script is based on syllabic sounds. This is different from the Latin script brought by the Dutch to the Archipelago which consists of single/independent letters.

The habit of Indonesian people to read and write using their own script is certainly closely related to the local language they use. When Indonesian children begin to learn to read this script, they are actually using reading materials closely related to their mother tongue. The mother tongue is a language acquired early in life. According to the theory of language acquisition, the mother tongue is the first language acquired and used during childhood [48], [49], [50], [51].

Instinctively, if they learn to read and write using their own script, it is naturally based on their first language, namely their mother tongue/local language. Learning to read and write based on their mother tongue is certainly easier because the writing used is based on syllables. This is certainly very different from learning to read and write using the Latin script. The Latin script is read like Latin, with single/independent letters and is not based on syllables. This differs from the Indonesian script, which is syllabic. Therefore, when Indonesian people learn to read the Latin script, adjustments must be made to ensure ease of reading. This adaptation to the reading method is what has been inaccurate until now, so that Indonesian citizens who are starting to learn to read Latin script often experience difficulties, as described above. The syllable /bo/ is read as [be o] by beginner learners or /ka/ will be read as [ka u].

Common reading methods, such as the letter method, the syllable method, and the spelling method, present difficulties for beginning learners [52], [53]. This is

because letters that should not be pronounced (especially consonants) are pronounced when learning to recognize letters. The letter /b/ is pronounced as [be], so the syllable /bo/ is pronounced as [be o]. Even with the SAS reading method or the Global method, when learning to recognize letters, students encounter the same difficulties.

On the one hand, the Nusantara script is based on syllable sounds (which can be easily pronounced), while the Latin script, introduced by Europeans, is based on single letters/independent letters that cannot all be pronounced. This Latin script is widely known to the public as only vowel groups can be pronounced, while consonants must be pronounced before or after them. This is the fundamental difference between the letters that came from Europe and the letters that already existed in the Nusantara.

There are two scripts that have been used by many people in the Nusantara. First, the Sanskrit script influenced many local scripts in the Indonesian archipelago. Javanese, Balinese, and Lombok scripts are some of the Indonesian scripts influenced by this Sanskrit script. When Islam arrived in the Indonesian archipelago, Muslim traders introduced Arabic script as a script for reading and writing. Eventually, this Arabic script developed and was used by the Indonesian people, eventually evolving into the Arabic-Malay script. If we look closely, both the Sanskrit and Malay scripts are based on syllables (which can be pronounced). This foundation is why, when we currently use the Latin script as a writing script in Indonesia, difficulties begin to arise without us realizing it. The approach or method used to read Latin letters is based on single letters, while the script used for reading and writing in the Indonesian archipelago is based on syllables.

Therefore, adjustments should be made to the teaching of reading and writing Latin letters, to make it easier for Indonesian learners to learn and read Latin letters based on single letters/independent letters. The long-established habit of reading the Nusantara script based on syllables must be changed/transformed to learn to read the Latin script based on single/independent letters. The approach of these two script models is certainly very different. Learning to read Latin letters with this letter-based approach and method is ultimately used until now in Indonesia. The approaches and methods used (especially the letter method, the syllable method, the spelling method) often make it difficult for students to form syllables during the early stages of learning to read. For example, as mentioned earlier, when teachers teach the consonant letter /b/ which is pronounced as [be], when combined with the letter /o/, students will read it as [be o] and not [bo]. The same thing will be found with the letter /k/ which is pronounced [ka], when combined with the letter /u/, students will read it as [ka u] and not [ku]. This happens because teachers unconsciously teach consonants to be syllable sounds and no single letters/independent letters.

This then inspired the first step in implementing Angi Moti's BRM, which was to implement the introduction of letters that could sound. The only letters introduced at this

initial stage are letters that can sound, totalling 13 letters. The basic idea is that these letters are sounded as syllables like the script used in the archipelago which corresponds to the mother tongue that children acquire as their initial language. Apart from the five vowels, the consonant letters must be able to be sounded like sounding out a syllable. For example, the letter /m/ is sounded by extending the sound to [mm], and not with [em]. The letter /n/ is sounded with [nn], the letter /s/ with [ss] and likewise with other sounds such as [rr], [ll], [zz], [ff] and [hh] as well as the combined letters [ngng] and [nyny]. Ultimately, when students learn to form syllables and are asked to combine the sounds [mm] and [i], they easily combine them to form [mm i], because the letter they are introduced to is [mm], not [em]. Similarly, for example, the letter [ss] combined with the letter [o] becomes [ss o], not [e so]. These eight consonants, when combined with vowels in the same pattern, make it much easier for students to form syllables.

The consonants that cannot be made into syllables are taught in the fourth step, after students can read words composed of vowels and consonants that can be made into syllables. These 13 consonants that cannot be made into syllables are taught as syllables, such as: be, ce, de, ge, je, ka, pe, qi, te, ve, we, ex, ye. Third, when students can read syllables proficiently, reading words and sentences is just a matter of time. So, the key to learning to read using this method is distinguishing between letters that can be pronounced (made into sounds) and letters that cannot be pronounced. Reading syllables is a crucial point that must be mastered in order to be able to read words and sentences.

3.2.2. Validation of Content, Media, and Language of the Angi Moti BRM

Validation of the content, media, and language of the Angi Moti BRM textbook was conducted after the instruments used were validated by experts. Content validation primarily focused on the learning steps of the Angi Moti BRM. These included definitions, the appropriateness of the material to the student's developmental level, the explanation of the material for the purposes of beginning reading, how to administer tests to determine student abilities, and how to calculate test results. These key aspects were assessed by the experts, who ultimately agreed that the content of the Angi Moti BRM was highly valid for use in the beginning reading learning process.

The experts declared the Angi Moti BRM textbook highly valid for use after examining the book's size, cover, and design. Key factors examined included the book's size's compliance with ISO standards, its size's suitability to the content, illustrations, fonts, the appropriateness of the material and images, the size of the images, the font size and type, the quality of tables, and the placement of titles, subtitles, and captions that did not interfere with comprehension. These factors were given a very good rating by the experts, as seen in the results above. As previously stated, the experts assessed that the Angi Moti BRM textbook was very valid and could be used for classroom learning.

The language used in this Angi Moti BRM textbook is considered very valid for use in the classroom. The sentence structure, effectiveness, and standardization of terms are all excellent. The assessment also examined the material's ability to motivate teachers and students. Its suitability for the intellectual and emotional development of students also received linguistic attention. Of course, spelling accuracy received full attention in this language validation.

3.2.3. Practicality of Using the Angi Moti BRM

Before teaching using the Angi Moti BRM, teachers received training on how to teach beginning reading using this method. In this training, teachers were taught how to use the method in the learning process, how to create and use simple instruments for the learning process, and how to test students to determine their reading skills. Once teachers understood, they then conducted the learning process using the Angi Moti method. After conducting the learning process using the Angi Moti BRM, teachers were asked for their input to assess whether the Angi Moti BRM method was practical for beginning reading instruction.

The analysis using the Gregory Method resulted in a score of 97. This means the Angi Moti BRM has high practicality, or is strong enough to be used as an early reading method. Teachers reported that the method is simple and easy to use. The learning steps are easy, practical, and uncomplicated. This method is appropriate for Indonesian conditions, and the material is structured and coherent. Textbooks are easily accessible because they are available in digital versions, as are test instruments to assess student ability. The students quickly understand and can quickly read the syllables, words and sentences that are taught.

3.2.4. Effectiveness of the Angi Moti BRM for Early Elementary School Students

The effectiveness of the Angi Moti BRM for these students is evident from the results of the pre- and post-tests. On average, students scored higher on the post-test than on the pre-test. The pre-test is administered at the beginning, when students cannot read yet. And then, the post-test is later given after the BRM learning process is conducted.

The teacher introduces students to letters in three to four sessions. Within the next three or four sessions, students generally begin to read syllables and words—both open and closed syllables, although not all students are able to read syllables and words. In the next three or four sessions, each student can begin to read simple sentences consisting only of a subject, predicate, and object. Many teachers interviewed stated that using this method helps their students learn to read more quickly than using previous methods (the letter method, the syllable method, and the spelling method). Previously, students began to be able to read in the third or even sixth month. Using this method, not to mention in the second month, some students were already able to read sentences. Looking at the results of the students' pre- and post-tests and then

calculating the N-Gain with an average of 0.9 (high category), it was concluded that the Angi Moti BRM is effective for learning to read in early grades.

3. Conclusion

Based on the objectives to be achieved, Angi Moti's BRM has successfully developed and produced a design for a BRM for early elementary school students, consisting of simple and practical learning steps that can be applied throughout the early grades. And also, students' abilities have improved, and they can read faster than with the previously used methods (letter and syllable methods). Within eight weeks, students can begin to read simple sentences.

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