Developing REMANG for Functional Literacy Learning in SKB Berastagi

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Abstract. This study aims to develop the "REMANG" learning application for the Functional Literacy program at SPNF SKB Karo and determine the effect of the "REMANG" learning application on program participants' reading, writing and arithmetic abilities. Stages of application design begin with concept, design, collecting material, assembly, testing and distribution. The result shows that learning for functional literacy programs endeavours to be based on local culture to stimulate students' learning motivation. In this respect, digital-based learning has the potential to make the learning process more enjoyable. Learning using digital content must also be assisted by explanations from the tutor/teacher to meet the specified learning goals.

Keywords: functional literacy learning, remang

1 Introduction

The Functional Literacy Program (FL) is the government's effort to reduce the level of illiteracy in Indonesia. The KF program is integrated with business skills based on community needs and potential by collaborating with various elements of the world of education. This program aims to eradicate illiteracy as a benchmark for improving the quality of human resources in Indonesia. The illiteracy reduction program has been carried out through formal and non-formal education, but more synergistic treatment is needed to obtain more optimal results. Cross-sector collaboration needs to be intensified to obtain maximum results because the reduction in illiteracy will not be optimal if new illiterates continues to increase.

Based on data from the Central Statistics Agency, the percentage of the illiterate population in North Sumatra in the 15-44 year age range in 2020 was 0.20%, in 2021 it decreased to 0.17%, then increased again to 0.24% in 2022. Meanwhile, for the population aged 45+, the percentage is 2.09% in 2020, falls to 2.03% in 2021, then increases again to 2.11% in 2022. This data shows that the percentage of illiterate people still needs is getting attention, therefore it is still necessary to continue the FL program in North Sumatra.

The FL program is a form of non-formal education program intended for people who do not yet have literacy skills, namely reading, writing, calculating and language skills [1]. This program also provides additional life skills so that after completing the program, participants have practical skills that can be used in everyday life [2]. Based on the results of interviews

with Mrs. Fatimah Syam as Head of SPNF SKB Karo, all of the KF program participants are community members who are already working but want to gain reading, writing, calculating and language skills to support the implementation of their work. Therefore, many participants cannot participate in face-to-face learning every day. This has an impact on achieving the final learning competency.

This research provides a solution for FL program participants who do not have time to attend lessons every day. Using adult education learning principles, this research developed a product in the form of a learning application entitled "REMANG" as a learning medium for functional literacy program participants at SPNF SKB Karo. In general, participants in the FL learning program are aged 15-44. This community group is participating in the FL program because they do not yet have the skills to read, write and count. These participants generally already work and do not have time to participate in face-to-face learning daily. Therefore, the problem formulation in this research is: 1. How can Android-based "REMANG" learning be developed for the FL program at SPNF SKB Karo? 2. How does the Android-based "REMANG" learning application affect the reading, writing and arithmetic abilities of FL program participants?

The benefit of this research is that, theoretically, it is hoped that this research can be used as information material to improve the learning outcomes of FL program participants. This research can also be used as a reference for developing learning models for digital-based functional literacy programs. Practically, this research can be useful for:

a. Study participants

Increase learning motivation because learning is packaged in an attractive and innovative display so that the learning process becomes more enjoyable and does not make you bored.

b. Teacher/Tutor

Develop the quality of learning to be more interesting, make the class atmosphere more creative, and help the efficiency of learning in the classroom.

c. Other researchers

Become a reference source and source of information to improve the quality of learning, and it can also design learning designs using technology and other innovative learning approaches.

Functional literacy consists of two elements, namely literacy and functional. Literacy is simply defined as the ability to read, write and calculate. Literacy is broadly defined as basic knowledge and skills required by all. It is further said that literacy is a necessary skill and one of the foundations for other life skills. Literacy is a person's ability to read, write and count. An illiterate person is a person who cannot read, write and count in everyday life. A literate person is someone who can read and write simple sentences and do arithmetic.

The term functional is closely related to the function and purpose of learning in literacy education, as well as the guarantee that the learning outcomes are truly meaningful and useful for improving the quality of life. Functional here also means that students can use their learning results to solve problems related to literacy that they encounter in everyday life.

1.1 Concept of Functional Literacy (FL)

Illiteracy is simply defined as a person's inability to recognize Latin letters (reading) and numbers (counting). Illiteracy is always associated with backwardness, ignorance, poverty, and other symbols of helplessness, even the illiteracy rate is one of the indicators in measuring a country's Human Development Index (HDI) [3]. Therefore, the phenomenon of illiteracy is one of the main issues in terms of improving the quality of human resources.

It can be concluded that the aim of the FL Program according to [2] is firstly to improve the ability to read, write and count as well as the skills of participants to be able to improve the quality and standard of living. Second, to create potential local workers to manage existing resources in their environment. Third, encourage the creation of a society that loves learning and is able to reduce the drop out rate in school education.

UNESCO summarizes and explains the concept of the FL Program which is divided into several elements. First, literacy programs should be integrated and connected to economic and social planning. Furthermore, eradicating illiteracy should start from residents who have high motivation and are beneficial for regional development. Then, literacy programs should be linked to economic development priorities. It should be noted that, literacy programs should not only teach reading and writing but also professional and technical knowledge so that it has an impact on the economic life of society. In this case, literacy programs remain integral to overall educational planning and the applicable education system. The need for funding for functional literacy should come from various government and private sources, as well as from economic investment. So, in general, literacy programs should help achieve economic goals such as increasing human resources' productivity, improving human resources' quality, and increasing community economic activity [4].

There are four main principles that need to be understood in functional literacy learning [4] i.e.,:

a. Local Context
   In order for FL learning can run according to its function and objectives, learning materials must be extracted from the local context. Learning materials must be useful for the daily lives of students studying. The need for students to develop FL learning programs that are truly high quality and relevant to their lives. Based on the statement above, the learning carried out in the studied study groups using the principles of local context is used as a basis for compiling learning materials for learning residents that are agreed upon in identifying the needs of learning residents.

b. Local Design
   Elements related to FL learning, such as objectives, target groups, learning materials, learning facilities, learning activities, learning time, learning places and other important elements, must be designed according to the local situation, conditions and potential where the learning group is located. It is also necessary to make learning agreements and learning plans and select learning activities based on the interests, needs and expectations of the study group and designed according to the characteristics of the learning community.

c. Participatory Process
   Literacy education programs must be able to mobilise students to carry out various actions so that they can develop a variety of skills that are useful for improving

students' quality of life and standard of living. Functional literacy education must be action-oriented, and all elements involved in it must actively and proactively participate in all activities.

d. Functionalization of Learning Outcomes
    Literacy education programs should start from things that students already know and can do so that their experience, abilities, interests, and learning needs become the basis for establishing a harmonious and dynamic relationship between tutors and students in learning activities.

There are many variations of methods that tutors can use to teach students. The appropriateness of using several learning methods and techniques depends on the basic abilities that the learning community already has, as well as the interests and needs of the learning community. Therefore, various methods can be used according to the learning community's situation, conditions, interests and needs. There are several very important things to consider in choosing a particular method, namely: (1) the goals to be achieved, (2) the characteristics of the learning material, (3) the ability of educators, (4) the time available, and (5) the number of participants.

Some learning methodologies that can be used by tutors in functional literacy education include:

a. Language Experience Approach Method (PPB)
    The PPB method is a way of learning literacy (reading and writing) based on experience. Residents learn to read and write through the process of creating learning materials that originate from ideas or sentences spoken by the residents themselves, not from tutors.

b. Structural Analysis Synthesis (SAS) Method
    The SAS method (Synthesis Analysis Structure) is a method or technique for teaching illiterate people to read and write which emphasises sentence structure (SPO) first by breaking it down into parts of words, syllables and letters and reassembling them into syllables, words, and sentences.

c. Syllable Method
    The syllabic method is very effective in helping people who are entirely illiterate to learn. The main concept in this method is studying syllables, which are often pronounced and have a clear meaning, with the principle of repeating, memorising and practising all the consonants and vowels that make up these syllables.

d. Alphabetical Method
    The alphabet method is a learning method that uses the media "Alphabet Poster" and "Alphabet Dictionary". Alphabet posters are used as learning media to help residents learn to understand how to remember letters, spelling and new words. Alphabet posters can also make it easier for students to create an alphabet dictionary. "Alphabet Dictionary" is a learning media to help citizens learn to organize the words they learn through alphabet posters, PPB methods, SAS and activities.

e. Transliteration Method
    The transliteration method transfers writing (letters and numbers) from one form to another. Since some students (especially in Muslim communities) already know "Arabic" numbers but are still illiterate in Latin, this transliteration method involves switching from Arabic letters and numbers to Latin letters and numbers. This method

is enough to help residents who are illiterate in Latin, but who already have little ability to read, write and count using Arabic letters. The main concept of the transliteration method is to equate the sound of Arabic letters or script with Latin script. In this case, residents learn to learn words that sound almost the same and write them with Arabic letters.

f. Keyword Method
   The keyword method is a method of learning to read and write using keywords and driving themes that are known to students and encountered in everyday life. The reason for using keywords and going themes is the importance of connecting reading and writing skills with the natural, everyday lives of students.

2   Research Method

This research will be carried out at the SPNF SKB Karo Regency located at Jl Letjen Jamin Ginting. This study will use The entire population as a sample of participants from the FL program at SPNF SKB Karo Regency. This study will use The entire population as a sample because the numbers are small.

Data was collected through literature studies related to KF learning materials and local culture to develop the application in this research, which will be integrated into the learning application. A literature review is a written summary of journal articles, books, and other documents describing past and current information, organising literature into topics, and documenting the need for the proposed study [5]. Data from the literature study was then analysed and adjusted to the learning outcomes of the FL program. This research integrates teaching materials for the FL program into the Android-based "REMANG" application so that participants can take part in learning without being physically present in class. The procedures in this research are:

a. First step: analyse learning material needs through curriculum analysis. At this stage the activities carried out are:
   1   Conduct competency standard analysis;
   2   Analyse the basic competencies to be achieved;
   3   Analyse and determine indicators for achieving learning outcomes;
   4   Analyse and determine the main material;
   5   Determine the learning experience that participants will achieve.
b. Second step: preparing a learning material map. After going through the analysis process of learning material needs, the next step is to prepare a teaching material map. This preparation was carried out to determine what material would be integrated into the "REMANG" application in accordance with the learning needs analysis that had been carried out.
c. Step three: create an ideal teaching material framework. In KF learning, 3 basic skills will be taught, namely reading, writing and arithmetic. This framework was developed based on seven components: title, study guide, main material or basic components, information that supports teaching materials, work steps/work instructions/tasks, and evaluation/assessment of activities.
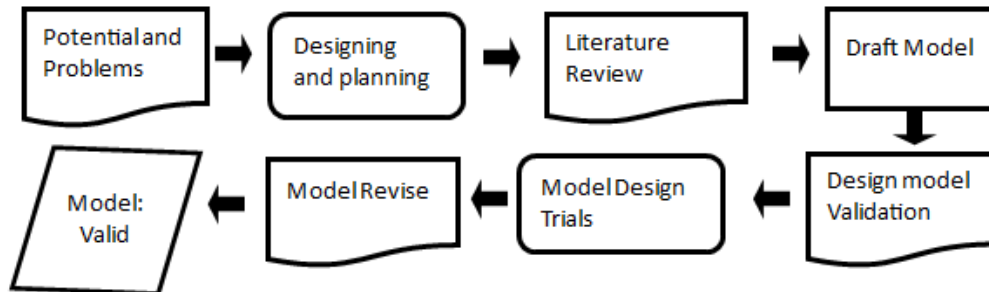
Fig. 1. Research Procedure

3 Result and Discussion

Functional literacy consists of two elements, namely literacy and functional. Literacy is defined as the ability to read, write and calculate. Literacy is broadly defined as basic knowledge and skills required by all [6]. It is further said that literacy is a necessary skill and one of the foundations for other life skills. Literacy is a person's ability to read, write and count. An illiterate person is a person who cannot read, write and count in everyday life. A literate person is someone who can read and write simple sentences and do arithmetic.

The term functional is closely related to the function and purpose of learning in literacy education and the guarantee that the learning outcomes are truly meaningful and useful for improving the quality of life. Functional here also means that students can use their learning results to solve problems related to literacy that they encounter in everyday life.

There are many variations of methods that tutors can use to teach students. The appropriateness of using several learning methods and techniques depends on the basic abilities that the learning community already has and the interests and needs of the learning community. Therefore, a variety of methods can be used according to the situation, conditions, interests and needs of the learning community. There are several very important things to consider in choosing a particular method, namely: (1) the goals to be achieved, (2) the characteristics of the learning material, (3) the ability of the educator, (4) the time available, and (5) the number of participants [7].

The main thing in determining the success of a functional literacy program is by improving the abilities and skills of each student in utilizing and functioning their literacy or learning outcomes in their daily activities. From the results of their learning, they are expected to be able to analyse and solve problems to improve their standard of living.

Implementation of the Functional Literacy Program (KF), overcoming related problems by eradicating illiteracy and providing skills for students or participants' education. Functional literacy consists of two elements, namely literacy, simply the ability to read, write and calculate. Someone illiterate is someone who cannot read, write, or count in everyday life. A literate person can read and write simple sentences and counting. Meanwhile, function is closely related to the function and purpose of carrying out learning in literacy education, as well as a guarantee that the learning outcomes are truly meaningful and useful for improving

the quality of life. Functionality is also meaningful. Learners can use their learning results to solve problems related to literacy encountered in everyday life.

Observations in the field obtained the impression from the community that the educational program literacy has not yet shown signs of changing attitudes or motivation to try to take action. The output of realising community empowerment is still far from expectations. The level of self-confidence of the literacy education community is still low; they appear to be silent or even chat, which is useless. Based on interviews, most students don't know the benefits of the KF program; after receiving a piece of paper that says SUKMA, they feel less useful in everyday life.

Supporting factors in implementing functional literacy learning, including the high level of enthusiasm that students have for learning to take part in this learning, and there is full support from residents so that this learning activity gets a response positive from the surrounding community. Apart from supporting factors, there are factors including the old age of the learning population, who have difficulty in accepting the material provided quickly; they are also tired of working during the day, so students often feel sleepy every time learning takes place. Weather conditions do not allow students to attend lessons, for example, heavy rain, when it rains, people study. There were only a few people present so learning could not take place to the maximum because the number of students studying is too small. Another inhibiting factor is that learning is often closed because the time for implementing functional literacy learning is frequent at the same time as village activities and celebrations for the residents. The next inhibiting factor is learning activities have not used good and correct lesson plans so that learning. What is carried out is only adjusting to field conditions without use the correct RPP reference. Deep tutoring capabilities utilization of learning media is still very lacking, so citizens learning cannot receive the material optimally because the tutor only uses textbooks equivalent to elementary school as learning media.

4.1 Storyboard

Storyboard design describes guidelines regarding the application's appearance that will be built later at the assembly (creation) stage. The following is a storyboard design used in designing learning applications in this research.

Table 1. Story Board

No	Information	Visualization	Audio
1.	Opening: *Remang Calistung* Showing two children Ngat and Ame with the Unimed logo.		Traditional karo music and *sound effects*

| 2. | Introduction: *Main Menu page* to play with Ngat and Ame with the options:
    1.   Read
    2.   Write
    3.   Counting
    4.   My culture | | Text:
Hi friends, meet again with us Ngat and Ame. This time we will accompany you to learn calistung (reading, writing and arithmetic. Let's get started, click on the picture... |

THEME: READING

| 3. | This menu facilitates students to read with indicators: being able to pronounce letters (vowels and consonants) and numbers and being able to read syllables, words and simple sentences (two words). | Picture of Ngat and Ame introducing themselves. | • Ame: Hi I'm Ame, and I'm Ngat.
• Ngat: Hello… what's your name? (pause gives students time to introduce)
• Ame: We come from Kutalimbaru. Where are you from? (pause gives students time to name their place of origin)
• Remember: Now we will learn to pronounce vowels, consonants and also numbers. Let's get started... |
| 4. | Vowel | Draw vowels | Vowels are sounds produced by the speaking apparatus if the flow of air out of the lungs is unimpeded. Therefore, vowels are also called vowels or sounds. Vowel letters represent vowel phonemes: *a, i, u, e ,* and *o .* Vowels can generally be placed at the front, middle, or end of a word.
• Let's mention it together, okay? |

| 5. | Consonant letters | Image of consonant letters | Now let's learn consonant letters. Consonant letters are letters produced by blocking the air flow in the vocal tract. Consonants are sounds that occur because the air coming out of the lungs is blocked. Therefore, consonants are also called consonants. |
| | | | The letters that represent consonants in Indonesian consist of: 21 letters, namely b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, and z. |

THEME: WRITING			
6.	This menu facilitates students to write with indicators: able to write letters, able to string letters into syllables, able to string syllables into words, and able to string words into sentence.	Image of Ngat writing	Friends, after learning to pronounce vowels and consonants, let's learn to write them next. Prepare your blank paper and writing utensils.

7.	Vowel	Image of Ngat writing	The letter A is written like this: If the beginning of the sentence is written like this A (uppercase A display) If in the middle or end of a sentence it is written like this a (lowercase a display)
			The letter I is written like this: If the beginning of the sentence is written like this I (uppercase I display) If in the middle or end of a sentence it is written like this i (lowercase i display)
			The letter U is written like this If the beginning of the sentence is written like this U (upper U display) If in the middle or end of a sentence it is written like this u (lower case u display)
			The letter E is written like this If the beginning of the sentence is written like this E (uppercase E display) If in the middle or end of a sentence it is written like this e (lower case e display)
			The letter O is written like this If the beginning of the sentence is written like this O (uppercase O display) If in the middle or end of a sentence it is written like this o (lower case o display)

| 8. | Consonant letters | Image of Ngat writing | The letter B is written like this:
If the beginning of the sentence is written like this
B (uppercase B display)
If in the middle or end of a sentence it is written like this
b (lower case b display)

The letter C is written like this:
If the beginning of the sentence is written like this
C (uppercase C display)
If in the middle or end of a sentence it is written like this
c (lower case c display)

The letter D is written like this:
If the beginning of the sentence is written like this
D (uppercase D display)
If in the middle or end of a sentence it is written like this
d (lower case d display)

If the beginning of the sentence is written like this
G (uppercase G)
If in the middle or end of a sentence it is written like this
g (lowercase g display) |

THEME: COUNTING

| 9. | This menu facilitates students to count with indicators: able to calculate addition, subtraction, division and multiplication. | Counting is related to addition, subtraction, multiplication and division. Numeracy needs to be learned because numeracy is very necessary in work and in everyday human life. Many people believe that mathematics must be mastered by all students in all types of schools.
Now let's start learning to count. Numbers consist of:
1 (visualization 1)
2 (visualization s)
3 (visualization 3)
4 (visualization 4)
5 (visualization 5)
6 (visualization 6)
7 (visualization 7)
8 (visualization 8)
9 (visualization 9)
10 (visualization 10)

Now try doing your worksheet... |

THEME: MY CULTURE

10.	This menu facilitates students to get to know culture, home environment and school.	Picture of Ngat introducing the family.	Remember: Hello friends... Now I will introduce my family tree. Well, this is my father and mother. Every day they work as farmers to earn income and send us to school. Who is this? Hayoooo... (picture of Ame). Yes, that's right, this is my sister Ame. These are my grandparents and we call them Bulang and Tigan. They also work in the fields every day. Friends, do you know that working in the fields is healthy?
11.	Get to know the culture of the Karo traditional house which consists of the shape of the house, ornaments, parts of the house, the function and meaning of the Karo house	Picture of a karo house and its parts.	Friends, Ame would like to introduce our traditional house. This is our traditional house, called Siwaluh Jabu. made from wood, bamboo and palm fiber. No nails, you know. Our traditional house is shaped like a stilt. The roof is made of palm fiber and has a gable shape. Unique right... For more details, click on the following image...

12.	Get to know Ulos as a Karo custom	Displaying ulos and various ulos	Remember: friends, we also have our own fabrics, you know. It's called Ulos cloth. In the past, we wore ulos as clothing and part of our customs. Ulos is our identity and its types and functions are also varied. Click on each picture, friends...
13.	Get to know Karo traditional clothes	Pictures of types of Karo traditional clothing for both men and women.	Ame: Friends, apart from ulos cloth, we also have traditional clothes which are usually used at weddings. Look at the following picture...
14.	Get to know the types of karo food	Pictures of karo food such as cimpa, pagit-pagit, tasak telu	Ame: Do your friends like to eat? We have various types of unique food.. want to know... Try clicking on the picture, then you will be introduced to our special foods.

5 Conclusions

Based on the research results, the research conclusions up to this stage are :
a. Learning for functional literacy programs is endeavored to be based on local culture to stimulate students' learning motivation.
b. Digital-based learning has the potential to make the learning process more enjoyable.
c. Tutors for functional literacy programs must understand the application of digital learning so that learning becomes more updated.
d. Learning using digital content must also be assisted by explanations from the tutor/teacher so that it is in accordance with the specified CPL.

This research needs to be continued so that it is not limited to functional literacy programs but can also be used for other non-formal learning programs. It should be noted that the design of digital content and learning instructions must be adapted to the learning curriculum and pay attention to the tutor's capacity to use digital media for the learning process.

References

[1]   Rinawati, N. K. A. (2020). Meningkatkan Motivasi Belajar Dengan Bermain Kartu Pada Program Keaksaraan Dasar. *Jurnal Akrab*, *11*(2), 52-61.

[2]   Kartanegara, M. K. K., Wahdhani, M. N., Apriani, F., & Prakoso, C. T. (2019). Implementasi program keaksaraan fungsional oleh dinas pendidikan kabupaten kutai kartanegara.*eJournal Administrasi Negara* 7 (1), 8500-8511.

[3]   Agussani, A. (2019). *Program Pendidikan Keaksaraan Berbasis Kecakapan Hidup.* Bandung: Departemen Pendidikan Masyarakat Fakultas Ilmu Pendidikan Universitas Pendidikan Indonesia.

[4]   Zubaidi, M. (2017). Pengembangan model pembelajaran program keaksaraan fungsional berorientasi nilai budaya dalam rangka meningkatkan kehidupan berkarya studi kasus pada pola kehidupan belajar komunitas Bali di Gorontalo. *Wacana Didaktika*, *2*(3), 59-80.

[5]   Creswell, J. W., & Creswell, J. (2018). *Research design*. Thousand Oaks, CA: Sage publications.

[6]   Napitupulu, W. P. (1999). Pendidikan orang dewasa, deklarasi Hamburg agenda masa depan: Jakarta: Ditjen Diklusepora.

[7]   Kusnadi, et.al. (2003). Pendidikan keaksaraan fungsional (konsep, strategi, dan implementasi). Jakarta: Mustika Aksara.