

## EDUTECH INNOVATION: COMMUNICATION THROUGH FLIPBOOKS AT THE NUMERACY LITERACY LEVEL

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### ABSTRACT

This article discusses flipbook communication technology that can be implemented in fun learning at the level of numeracy literacy; numeracy literacy can be applied to primary-level children. This study aims to foster a fun learning experience of basic numeracy literacy for grade II students and interest in learning at the numeracy literacy level by utilising flipbook communication technology. This study uses descriptive data analysis techniques. The subjects were students of Madrasah Ibtidaiyah Terpadu Class II Langsa, Aceh Province, totaling 28 students. Data collection techniques used tests and non-tests. The test instrument is an interest questionnaire, and the non-test is observation as supporting data to determine students' attitudes in learning numeracy literacy using flipbook communication technology media. Data analysis was used in a descriptive way to find the average score of students' interest in learning numeracy literacy using flipbook communication media. The results show that students' interest in learning by utilising flipbook communication media is in the medium category, with a percentage of 32.143% and an average score of 83.94. Flipbook communication media as an educational innovation in a global context makes students optimistic about learning. Students are enthusiastic during the learning process, allegedly using flipbook communication media.

**Keywords:** *Communication Media, Flipbook, Interest in learning, Numeracy Literacy*

### INTRODUCTION

In the current era of globalisation, effective and inclusive communication strategies are essential in the learning process. One form of educational technology innovation, such as the flipbook, can create a pleasant communication experience for elementary-level students, especially in numeracy literacy. This study will discuss the integration of flipbooks as an educational innovation to enrich communication in the context of numeracy literacy in education. In the edutech approach, the teacher's role as an instructor is significant in developing flipbooks to increase students' understanding of communication in mathematics subjects. In this way, it is hoped that students will no longer avoid mathematics subjects and that their numeracy literacy will improve. Numeracy is applying number concepts and mathematical calculation operations contextual in everyday life (Mahmud, 2019). Every student must have good numeracy skills

because it will be easier for students to solve everyday problems with numeracy skills (Ayuningtyas & Sukriyah, 2020).

Individuals who continually hone their reasoning process can overcome everyday life problems. The reasoning process will be good if the learning process brings up numeracy literacy because numeracy literacy is an essential part, where competencies that hone individuals to reason are integrated (Pratiwi et al., 2020). Numeracy literacy is the ability to use numbers, data, mathematical symbols, and knowledge and skills in making decisions related to real-life contextual problems (GNL, 2017). Numeracy literacy is essential for students to understand a world of numbers and data and reason systematically and critically in solving problems and making decisions in various contexts.

According to the Ministry of Education and Culture (2021) states that numeracy literacy is knowledge and skills (1) using various kinds of numbers as well as basic mathematical symbols in solving practical problems in various real-life contexts and (2) analysing the information presented in various forms (graphs, tables, charts, etc.), then using the interpretation of the results of the analysis to predict and make conclusions and decisions. Globalisation and transformation encourage students to compete to improve literacy skills because it is an essential indicator that students must have. UNESCO states that literacy is the ability to understand information, identify, interpret, communicate and calculate through sources obtained from various media, both digital and print, and write in various contexts (Farmer & Stricevic, 2011; Takaria & Rumahlatu, 2016; Takaria & Talakua, 2018).

Along with the development of science, literacy has developed and been applied in various fields, such as information, media, science, statistics, and mathematics (Takaria & Talakua, 2018). Numeracy literacy, part of mathematics, is more applicable in its application. To improve numeracy literacy, the learning process at the elementary level needs to present mathematical problems that are contextual or related to students' real lives. If mathematical problems are abstract, using media can be an effective bridge (Rahmawati, 2021).

As a communication tool, media can convey messages or learning materials to communicants or audiences. According to Kustandi and Darmawan (2020), media is a place for a message that the communicator wants to convey to the recipient of the message. In the learning context, learning media is a communication tool that helps teachers convey learning material, influences changes in student behaviour in understanding the material, improves memory, and

increases student motivation. Teachers should carry out the development of learning media, such as teaching materials containing materials, concepts, and tasks, because they better understand the characteristics of their students. Katrina (2016: 2) suggests that teaching materials be prepared by teachers because only teachers understand the material being taught and the character of the students. In the learning and teaching process, teachers can also design learning so that interactive communication occurs where students can express thoughts and ideas to others. Communicating with friends is highly recommended for developing communication skills and motivating learning to become active. Therefore, teachers are advised to create media as teaching materials to guide student learning, facilitate student communication, increase motivation, and be effective, practical, and innovative.

The flipbook is an innovative communication medium that can help students and be fun for elementary-level students. Flipbook is an interactive communication media that provides a more dynamic platform for presenting information visually. In a global context, language is often a barrier. However, using flip books can minimise language barriers so flipbooks can be an effective and inclusive communication tool. Flipbooks can encourage students to familiarise themselves with literacy. Using images, icons, graphics and handling complex problems can be utilised in flipbooks to communicate ideas, overcome language barriers, and ensure that messages can be understood globally. Reasons for considering flipbooks as a communication tool for students include;

1. in general, elementary-level students are bright and understand how to use smartphones,
2. flipbook communication learning media can present exciting and creative learning,
3. easy use of flipbook communication learning media for both teachers and students,
4. The flipbook website can be accessed anywhere and at any time

The "flipbook" learning media can be developed as a learning innovation in communicating a message or teaching students as communicants. Flipbook media in learning is a tool to make it easier for teachers to convey learning material, which can increase students' understanding in capturing learning material at the numeracy literacy level. With flipbook media, students can express mathematical ideas through pictures/graphs, tables, equations, or in the student's language, increasing students' attention, increasing motivation, and literacy skills.

Flipbooks can be an effective teaching tool for subjects such as mathematics and languages. Flipbooks can help improve students' global literacy and practise cross-cultural

communication skills by presenting vocabulary, phrases, and sentences in real context. The benefits of flipbooks are not only limited to students, as parents can also use them to help their children understand the messages conveyed by the teacher. Parental involvement can enhance children's learning, creating a solid connection between school and home. This approach supports holistic education, which recognizes the importance of collaboration between the school and home environments in supporting students' overall development.

The development of class II students at the Langsa City Private Madrasah Ibtidaiyah still needs help in reading and literacy. As a result, students will also need help in numeracy literacy. Lack of numeracy literacy skills can make it difficult for students to understand basic mathematical concepts, hinder the development of numeracy skills, face daily problems related to mathematics, and even negatively affect academic abilities in numeracy literacy. Students needing to be more interested in learning can cause this obstacle. The results of Marti 'in's study (2019) show that one of the high levels of student interest in learning is due to aspects of the school environment: teaching methods, curriculum, relations between teachers and students, relations between students and students, and media or learning aids. In this case, it is suspected that the teacher did not use learning media during the learning process. This method causes students not to focus, to be serious, to get bored quickly, and to become lazy in learning. To overcome the problems expressed above, in this article, the author will examine communication media via flipbooks at the level of student numeracy literacy.

## **METHOD**

This qualitative research was conducted at the Private Integrated Madrasah Ibtidaiyah, Langsa City. The subjects were 28 2nd-grade MIS Langsa City, Aceh Province students. The subject was determined on the basis that the subject of class 2 students was chosen because their reading ability still needed to improve and the student's interest in learning needed to be higher. The object of the research is students' numeracy literacy regarding addition and subtraction of whole numbers.

The data collection techniques used are observation methods and questionnaires. The questionnaire increased students' interest in learning at the numeracy literacy level. The learning interest questionnaire was adopted by Magdalena Irawati (2018). The questionnaire is a structured questionnaire with closed answers. Respondents answered alternative answers

deemed appropriate to what the students felt—validity testing with Pearson correlation and questionnaire reliability with Cronbach's Alpha using the SPSS computer program.

**Table 1.**  
 Learning Interest Grid

| No | Variable                                                                 | Indicator                                                           | No Statement |          |
|----|--------------------------------------------------------------------------|---------------------------------------------------------------------|--------------|----------|
|    |                                                                          |                                                                     | Positive     | Negative |
| 1  | Interest in Learning Numeracy Literacy with Flipbook Communication Media | Feelings of joy when learning numeracy literacy with flipbook media | 5, 6         | 4, 8     |
|    |                                                                          | Interest in learning activities                                     | 1, 14        | 9, 10    |
|    |                                                                          | Pay attention when studying                                         | 2, 7         | 3        |
|    |                                                                          | Involvement in carrying out learning activities                     | 12, 13       | 11, 15   |
|    |                                                                          |                                                                     |              |          |

Scoring of the interest in learning questionnaire uses a Likert scale using four alternative answers: Strongly Agree (SS), Agree (S), Disagree (TS), and Strongly Disagree (STS). Analyze the questionnaire data descriptively by classifying student interest into high, medium, and low categories as follows:

**Tabel 2.**  
 Mathematics Interest Category

| Score                            | Category  |
|----------------------------------|-----------|
| $X \geq M_i + SD_i$              | Tall      |
| $M_i - SD_i \leq X < M_i + SD_i$ | Currently |
| $X < M_i - SD_i$                 | Low       |

The observation technique shows students' attitudes when learning using flipbook communication media. Observations were carried out using an attitude assessment rubric, as shown in Table 2, as follows:

**Table 3.**  
 Attitude Assessment Rubric

| Attitude                                                                                                      | Yes | No | Notes |
|---------------------------------------------------------------------------------------------------------------|-----|----|-------|
| Students seem involved in learning (enthusiastic)                                                             |     |    |       |
| Students look enthusiastic and enjoy what they are doing (excited)                                            |     |    |       |
| Students try different approaches/props to tackle the task, in discovering answer (never give up; persistent) |     |    |       |
| Students seek additional information and try something new (taking risks) (confidence)                        |     |    |       |
| Students often seek help or approval for their ideas (responsibility)                                         |     |    |       |

## RESULT AND DISCUSSION

The results of the descriptive analysis obtained from the student interest questionnaire appear in Table 3 and Table 4 as follows:

**Table 4.**

Recapitulation of Measurement Results from the Interest Questionnaire

| No | Measurement results | Mark  |
|----|---------------------|-------|
| 1. | Average             | 83,94 |
| 2. | Median              | 85,00 |
| 3. | Standard Deviation  | 5,98  |
| 4. | Variance            | 35,75 |
| 5. | Maximum             | 93    |
| 6. | Minimum             | 73    |

The complete results of the interest questionnaire can be seen in Table 4 as follows:

**Table 5.**

Distribution of Student Interest Classifications

| No.    | Score Intervals  | Category  | Many Students | Percentage (%) |
|--------|------------------|-----------|---------------|----------------|
| 1.     | $X \geq 86$      | Tall      | 12            | 42,857%        |
| 2.     | $79 \leq X < 86$ | Currently | 9             | 32,143%        |
| 3.     | $X < 79$         | Low       | 7             | 25%            |
| Amount |                  |           | 28            | 100%           |

From the results of observations of students' attitudes when learning using *flipbooks*, it can be seen in Table 5.

**Table 6.**

Recap of Student Attitude Observation Results

| Attitude                                                                                                      | Yes | No | Notes |
|---------------------------------------------------------------------------------------------------------------|-----|----|-------|
| Students seem involved in learning (enthusiastic)                                                             | 25  | 3  |       |
| Students look enthusiastic and enjoy what they are doing (excited)                                            | 20  | 8  |       |
| Students try different approaches/props to tackle the task, in discovering answer (never give up; persistent) | 18  | 10 |       |
| Students seek additional information and try something new (taking risks) (confidence)                        | 17  | 11 |       |
| Students often seek help or approval for their ideas (responsibility)                                         | 23  | 5  |       |

The results of the questionnaire show that students are interested in learning. Students who have an interest in flipbook media when studying can express mathematical ideas tend to be more enthusiastically involved in learning and absorb information better. There were 25 students

with an enthusiastic attitude in learning using flipbook media, namely 89.28%. High interest can encourage students to seek additional knowledge outside of class and become more active in discussions or projects related to adding integers.

The observation results also showed that 20 students, or 71.43% of students, seemed enthusiastic and enjoyed what was done in learning using flipbook media. Active involvement in learning, students tend to be more focused, participate more in-class activities, and are more involved in the learning process. A high level of student involvement can also increase understanding of the information provided.

The level of student confidence in their numeracy literacy abilities in facing academic challenges can influence students' activity attitudes in the classroom. Confident students tend to be more willing to take risks, ask questions, and participate actively in class discussions. This is shown from the observations, namely that 17 students, or 60.71%, had a confident attitude, trying something new. Likewise, students with a responsible attitude toward learning will take an active role in completing assignments, seeking help to complete assignments, or seeking approval for their ideas. This is shown from the results of observations that there were 23 students, namely 82.14%, who had a responsible attitude.

## **CONCLUSION**

Flipbook is an educational innovation teachers can use to stimulate students' learning process. Teachers stimulate students through innovative flipbook communication media by doing the following: 1) introducing new material visually and interestingly at the numeracy literacy level more dynamically and efficiently for students to understand. 2) use flipbook communication media as independent reading material, containing additional information, examples, or exercises that can help students deepen their understanding of numeracy literacy. 3) use flipbook as an interactive communication medium in class. In this case, the teacher creates a flipbook that allows students to participate/be involved directly in learning activities.

Students' interest in learning by using flipbook communication media is in the medium category, at a percentage of 32.143%, with an average score of 83.94. Flipbook communication media as an educational innovation in a global context gives students a positive learning attitude. So the role of flipbook communication media in education is an inclusive and visual medium and a strategic one to facilitate effective communication and global collaboration.

## CONFLICT OF INTEREST

Researchers have a professional interest in supporting edutech innovation in the use of flipbook communication media at the numeracy literacy level.

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