

## Enhancing Elementary Literacy Skills through a Contextualized Coastal Course Book: A Developmental Study in Bengkulu, Indonesia

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<p><i>Course Book;</i></p> <p><i>Coastal Context;</i></p> <p><i>Student Literacy</i></p>	<p>Teaching materials designed using local contexts are important in improving students' literacy skills. The lack of teaching materials to support these skills causes low student literacy achievements in elementary schools. This study aims to design a course book, grounded in the coastal context of Bengkulu, to enhance the literacy skills of elementary school students. The research employs a developmental approach using the ADDIE model, which encompasses five stages: (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. The subjects of the study are fifth-grade students from elementary schools in Bengkulu City. The study is conducted in three phases: expert trials, limited trials, and wide-scale trials. Data is collected through both tests and non-tests. The instruments used for data collection include product validity sheets, practicality questionnaires, and literacy test instruments. Descriptive statistical analysis is utilized for data analysis. The result of the research suggests that the course book, based on the Bengkulu coastal context, meets the criteria for validity, and practicality, and effectively enhances the literacy skills of elementary school students. Teaching materials that integrate with coastal contexts have been proven to support students' thinking skills, one of which is mathematical literacy.</p>

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## INTRODUCTION

### Background of the Study

The swift progression of technology necessitates the adaptation of all sectors, including the field of education. In contemporary times, the field of education necessitates that students cultivate a diverse range of abilities, including communication, collaboration, complex thinking, and creativity (Soulé & Warrick, 2015). Additionally, students are expected to acquire cognitive, affective, and socio-cultural competencies (Kang et al., 2012). Furthermore, it is imperative to note that proficiency in literacy is of utmost importance for students in Indonesia, as it serves as a significant measure of educational attainment on both domestic and global scales. The Programme for International Student Assessment (PISA) places a strong emphasis on the assessment of literacy skills as the primary criterion for evaluating the level of proficiency among secondary school students. Likewise, the national evaluation of educational achievements in Indonesia necessitates students to exhibit proficiency in literacy skills as the primary aim, as assessed by the minimum competency assessment (MCA). The government's endeavor to improve learning outcomes by implementing of MCA and the Merdeka (Independence) curriculum requires the full support of all educational institutions, especially elementary schools. However, it has been noted that literacy achievements among elementary school students in Bengkulu City remain below the desired levels. Hence, it is imperative to integrate and prioritize literacy skills in the execution and objectives of each instructional session within the classroom setting.

The acquisition of literacy skills empowers students to comprehend the significance and practicality of mathematics in various real-life scenarios. According to Sumirattana et al. (2017), the acquisition of literacy skills enables students to effectively utilize mathematical knowledge to address practical challenges in the real world. The importance of mathematical literacy is evident in its contribution to problem-solving in various aspects of daily life (Rusmana, 2019). It serves as a bridge between theoretical mathematical concepts taught in educational settings and their practical applications in real-world scenarios (Masjaya & Wardono, 2018). Furthermore, it cultivates an awareness and appreciation for the relevance of mathematics in everyday situations (Riyadhotul et al., 2019). According to Ming (2012), the acquisition of literacy skills is also associated with the development of critical thinking abilities and problem-solving capabilities among students. Hence, the cultivation of literacy skills holds significant importance in all instructional settings.

In addition to learning outcomes, the successful implementation of the curriculum in Indonesia necessitates the provision of learning resources that can effectively facilitate the development of students' cognitive abilities. Teachers have the flexibility to select and modify instructional resources based on the individual learning requirements and preferences of their students when implementing the Merdeka curriculum (Kemendikbud, 2022). The utilization of innovative teaching materials has the potential to improve educational achievements (Susanta, Koto, et al., 2022). In order to cultivate students' literacy skills, it is imperative to develop teaching materials that are tailored to their specific needs. Educators have the ability to employ instructional contexts that are proximate and pertinent to their students. Within the framework of independent learning curricula, educational institutions possess the prerogative to modify the curriculum in accordance with the specific contextual requirements of the school. This suggests that the utilization of creative instructional resources that incorporate relevant contexts is imperative to attain educational goals.

### Problems of The Study

The deficiency in literacy proficiency among students in Indonesia is apparent based on the results of national and international surveys. As an illustration, Indonesia secured the 63rd rank out of

70 countries in mathematics on the 2018 Programme for International Student Assessment (PISA). The country achieved an average score of 386, which was lower than the global average of 500 (OECD, 2019). From 2000 to 2009, the performance of Indonesian students was limited to cognitive levels three and four (Stacey, 2012). Empirical research data further supports the notion that literacy skills are inadequate. As an illustration, 48.42% of the middle-level students in Bengkulu City who responded to a survey utilizing MCA questions regarding their literacy proficiency fell into the low category (Susanto et al., 2023). The majority of elementary school students possessed literacy skills at levels 1 and 2, whereas their reasoning abilities remained below 40 percent (Susanta, Susanto, et al., 2023). The presented data suggests that literacy skills should be prioritized in the classroom curriculum.

The primary factor contributing to the inadequate literacy proficiency of Indonesian students is the insufficient support provided by educational institutions to emphasize literacy development. This may be attributable to the dearth of literacy-related inquiries and the inadequate incorporation of literacy competencies into instructional resources. The creation of mathematical instructional materials has the potential to enhance literacy abilities, according to empirical evidence (Maryanti, 2017). Nonetheless, particularly at the elementary school level, the development of literacy-based instructional materials presents challenges for educators. As revealed through interviews with elementary school teachers at the state level in Bengkulu City, a subset of educators had not previously developed instructional resources with the explicit intention of fostering mathematical literacy abilities. Moreover, according to the findings of the needs analysis, context usage in the classroom remained minimal. Hence, it is imperative to confront the issue of inadequate literacy abilities through the creation of instructional resources.

Teachers encounter challenges in delivering learning resources that efficiently stimulate students' cognitive abilities. A notable concern is the insufficient availability of learning materials in elementary schools across Bengkulu Province that specifically target the development of literacy skills. As a response, this research initiative was launched with the objective of creating instructional materials designed to elevate the literacy skills of elementary school students.

### Research's State of the Art

The importance of literacy skills to be mastered by students in this century requires them to be present in every lesson in the classroom. Good literacy mastery can influence each individual's thinking ability (Pantiwati, et al, 2022); abilities that can help students solve problems and make decisions (Luthfiyani et al., 2019) as well as apply and evaluate information in everyday life (Setyaningsih et al., 2017). This means that this ability is needed to solve problems found in mathematics learning. Mathematical literacy which includes the ability to understand, apply concepts, and evaluate includes the abilities that are the learning objectives in class.

The literacy process that occurs in students involves four abilities, namely how to formulate real problems to find solutions which are then interpreted as real solutions (OECD, 2013). This means that literacy skills cannot be separated from real problems in the process. Presenting real context in the literacy learning process is one of the important things So teaching materials are an important component that cannot be separated in the learning process to achieve learning goals in class and can be linked to real contexts. The inclusion of context within teaching materials is of paramount importance. Particularly in the context of bolstering literacy skills, the integration of context is indispensable to bridge students' comprehension of real-world issues (Susanta, Sumardi, et al., 2022). Hence, the incorporation of context within teaching materials becomes a requisite. That context serves as a catalyst in honing students' critical and creative thinking skills, empowering them to tackle intricate problems (Kadir & Masi, 2014). This development in cognitive prowess not only nurtures their problem-solving abilities but also underpins their mathematical literacy in the classroom setting.

One possible context for bridging the achievement of mathematical literacy skills is a context that is close to students. The use of contexts that have been experienced in the surrounding environment as a means for students to understand mathematics (Herdianti & Zulkardi, 2019). In this research, the problem focused on is a contextual problem based on the coast of Bengkulu Beach. We chose this context because it is familiar to students, especially in Bengkulu. Many coastal contexts can be linked to mathematics learning, for example: the use of beach sand as a medium for fractional number and volume problems. The article about Bengkulu Beach, which has become an iconic tourist attraction, can be related to geometric material, buildings on the coast of Bengkulu Beach can be used as problems related to geometric material, and many other contexts that can be used in learning. This shows that the contextual problems of the Bengkulu Coast can be used as teaching material to support student literacy.

### Gap Study & Objective

Prior studies have demonstrated the positive impact of incorporating local context into teaching materials on students' literacy skills (Susanta, Sumardi, et al., 2023). For example, the field of ethnomathematics, which explores the relationship between mathematics and cultural practices, has been shown to enhance students' literacy skills (Sarwoedi et al., 2018). Consequently, employing teaching materials that embody local wisdom, especially from coastal areas, emerges as an effective strategy in achieving learning objectives, including the enhancement of literacy skills.

However, previous research has focused on local contexts in general. We try to focus on real problems in the coastal context to support the literacy of elementary school students. Much of the research that has been conducted also examines how context supports literacy learning. Miller & Veatch (2010) have studied how literacy teaching strategies use context, and how students' mathematical literacy levels use cultural context (Andari, & Ekawati, 2021). The use of contextual learning strategies is very important for teachers and students in improving mathematical literacy skills (Afni & Hartono, 2019). This shows that it can improve literacy with contextual problems. Thus increasing student motivation to complete assignments (Clarke & Roche, 2018).

The research studies that we have presented have not specifically used local contexts in teaching materials to support literacy learning. The focus of the research we conducted was how teaching materials in the form of course books as a reference in supporting literacy learning in elementary schools could be developed. The problem we raise in supporting student literacy is the coastal context of Bengkulu Beach. The development of this course book is a solution to the problems that have been described where limited learning resources, especially in elementary schools, are a factor causing low student literacy achievements. Therefore, this research aims to develop teaching materials in the form of a course book based on the coastal context of Bengkulu Beach which meets the criteria of being valid, practical, and effective in supporting student literacy.

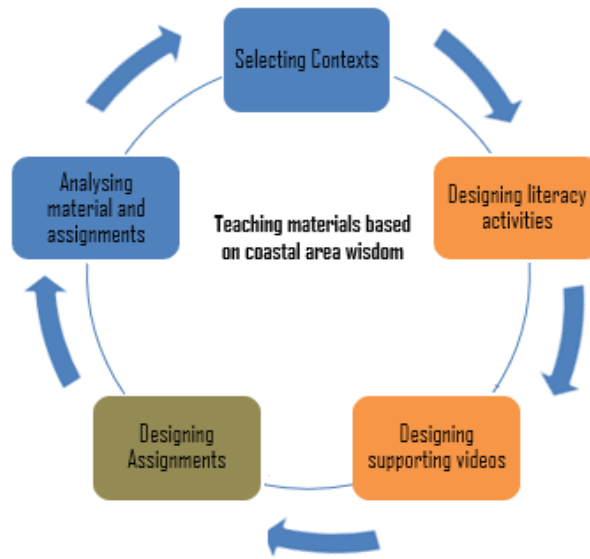
## METHOD

### Type and Design

The research conducted falls within the domain of research and development. Its primary objective is the creation of educational materials, specifically course books grounded in the coastal context of Bengkulu, aimed at elevating the literacy skills of elementary school students. This endeavor aligns with the objectives of design research for development, which encompasses the design and creation of learning processes, learning environments, teaching and learning materials, products, and systems (Plomp, 2015). The research adheres to the stages delineated by the ADDIE model for development, encompassing analysis, design, development, implementation, and evaluation. This

model was selected due to the sequential nature of the development stages, rendering it well-suited for the creation of teaching materials.

During the analysis stage, the content incorporated into the teaching materials is scrutinized, in alignment with the fundamental competencies outlined in the curriculum. This phase also entails an exploration of the contextual relevance of the Bengkulu beach, which is harmonized with the material. The design stage entails the creation of content, employing contextual elements, promoting literacy activities, and reinforcing the learning experience. An overview of the stages in the design of teaching materials is depicted in Figure 1.



**Figure 1.** Stages of coastal context course book design

In the developmental phase, the creation of instructional materials, manifested as a preliminary draft of a course book, takes precedence. The layout of the course book is meticulously crafted based on the findings derived from material analysis. The design is intricately focused on the presentation of content, contextual relevance, activities, and reinforcement exercises. The initial draft undergoes scrutiny through a logical validity test, evaluating aspects such as material integrity, structural coherence, linguistic appropriateness, and contextual applicability. Feedback from expert assessments guides revisions, leading to the subsequent limited-scale testing stage, where the practicality of the teaching materials is assessed. Transitioning to the implementation stage, a large-scale test is conducted to gauge the effectiveness of the research product. Teachers employ these teaching materials in classroom instruction. Following the learning sessions, a final test, comprising literacy-based questions, is administered to analyze the efficacy of the developed teaching materials. The evaluation stage marks the assessment of the final product. Additionally, discussions and reflections are undertaken concerning teachers who implement the materials in their classrooms, providing valuable insights for the refinement of the teaching materials.

#### Data and Data Sources

In delineating the objective of this developmental research, the focus lies on portraying the research product. Qualitative data form the basis for this description. The data collection process involved the dissemination of product assessment sheets, encompassing validity assessments, evaluations of product readability, and surveys gauging student responses. Concurrently, the efficacy of the product is appraised through tests aimed at measuring students' literacy abilities. The research

methodology entails sourcing data from teachers and students within the elementary schools situated in the city of Bengkulu. Detailed information on the test subjects is presented in Table 1.

**Table 1.** Research trial subjects

Stages	Objective	Trial Subjects
Expert Judgment	Test the validity of the course book	3 lecturers [UNIB and UIN Bengkulu]
Instrument Test	Measuring the quality of product effectiveness test instruments	18 class VI students at Bengkulu City Public Elementary School
Limited Trial	Testing the product's ease of use (practicality test)	6 students (from two Bengkulu City Public Elementary Schools)
Wide Scale Test	Testing the effectiveness of the course book	40 students [21 students from Bengkulu Public School 3 and 19 students from Bengkulu Public School 38]

### Data collection technique

This research employs a dual approach to data collection, utilizing both non-test and test techniques. The non-test method involves the administration of product validity and readability instruments. The validity instrument assesses the course book's validity in the coastal context of Bengkulu, evaluating aspects such as material, construction, language, and contextual usage. The validation sheet employs a five-point assessment scale, encompassing categories of very good (5), good (4), sufficient (3), poor (2), and very poor (1). Simultaneously, the Readability Instrument gauges the practicality of the product, employing a Likert scale with five criteria: strongly agree (5), agree (4), doubtful (3), disagree (2), and strongly disagree (1).

In the realm of test-based data collection, the focus is on assessing students' spatial abilities in resolving literacy questions. This instrument, comprising multiple-choice questions and short answers, encompasses 9 items, with 6 multiple-choice and 3 short-answer questions. The development of these questions aligns with elementary school material based on mathematical literacy indicators (Wijaya et al., 2021). The instrument's design is grounded in three indicators: knowing, applying, and reasoning, with equitable distribution. Rigorous assessment of the instrument by two experts, considering material relevance and question construction, affirms its logical validity through Aiken's analysis, with all items surpassing the 0.5 Aiken index value (Aiken, 1980) Furthermore, the instrument undergoes testing on 18 Class VI students in state elementary schools in Bengkulu City, exhibiting a Cronbach alpha value of 0.78 in reliability analysis, surpassing the 0.7 threshold. This underscores its reliability in accordance with established criteria.

### Data analysis

The data analysis in this research encompasses three key components: product validity analysis, product practicality analysis, and research product effectiveness analysis. The methodology for data analysis is elucidated as follows.

#### Validity Analysis

The estimation of product validity in this research adopts a content validity approach, centering on material, construction, language, and contextual aspects. The analysis employs the item validity index formulated by Aiken, as expressed by the following formula:

$$V = \frac{\sum s}{n(c-1)}, \text{ with } s = r - I_0 \quad (\text{Retnawati, 2014})$$

$r$  = the score of the rater's chosen category

$I_0$  = the lowest score in the scoring category

$c$  = categories that raters can choose

$n$  = total raters

The criteria for establishing the validity of product decisions in each aspect are deemed met when the Aiken index value exceeds 0.05 (Aiken, 1980)

*Practicality Analysis*

The data from the limited trial constitute assessment scores on a scale of 1 to 5, encompassing five statement items. The average score for each item is categorized into five assessment levels: highly practical, practical, adequate, insufficient, and impractical. The score intervals are systematically analyzed within the 1-5 range, as detailed in Table 2.

**Table 2.** Practicality reference based on readability test

Score Intervals	Category
4.21-5.00	Very Practical
3.41-4.20	Practical
2.61-3.40	Moderate
1.81-2.60	Less Practical
1.00-1.80	Impractical

The benchmark for the user-friendliness (practicality) of this research product is determined by criteria ranging from sufficient to highly practical. If all facets align within the range from moderate to highly practical, the product is deemed easily accessible.

*Effectiveness Analysis*

The analysis of effectiveness is grounded in the results of student assessments in addressing literacy questions. Each correct response to multiple-choice questions is scored as 1, while an incorrect answer receives a score of 0. Description questions are evaluated on a scale of 0-3, reflecting the stage of the student's work. The cumulative score is then converted to a scale of 0-100. To ascertain students' proficiency in addressing literacy questions, the criteria outlined in Table 3.

**Table 3.** Level of student literacy skills

Student's final grade	Level
67-100	High
34-66	Medium
0-33	Low

The benchmark for gauging the effectiveness of product development in this research hinges on the average student criteria falling within the high category. Additionally, the research considers it effective if over 50.00% of students achieve moderate to high proficiency levels.

**RESULTS**

**Results of development needs analysis**

During the analysis stage, a thorough examination of development needs is conducted, encompassing material, students, and the coastal context. The material analysis informs the creation of a course book for fifth-grade elementary school students, aligning with the independent curriculum. The course book comprises three key subjects: fractions, measurements, and spatial figures. The needs analysis extends to the student perspective, involving the distribution of questionnaires to 30 students. The questions center on the utilization of teaching materials in the classroom, specifically addressing the incorporation of Bengkulu problems or contexts in the learning process. The analysis reveals that only 17.23% of teachers have integrated familiar problems or Bengkulu contexts in both questions and

learning materials. This highlights an existing deficiency in the incorporation of context within classroom learning.

Simultaneously, an analysis is conducted in the coastal context of Bengkulu Beach, seeking relevance to the problems presented in the course book. The findings identify contexts that aptly represent the material in the course book. Examples include merchandise umbrellas, the color of buoys on the beach, and sand, which can be applied to fraction problems. Furthermore, building tiles on the edge of Panjang Beach, wave barriers, and structures can be correlated with geometric materials. The ensuing excerpt illustrates an instance of the coastal context of Bengkulu Beach that can bolster the delivery of material in Figure 2.



**Figure 2.** Example of a coastal context

Figure 2 depicts various instances of coastal contexts serving as foundations for delivering material in the ongoing development of the course book. These contexts, deliberately chosen for their familiarity to students, are anticipated to enhance the learning experience within the classroom setting.



### Product design results

The outcome of the product development in this research manifests as a course book, strategically grounded in the coastal context of Bengkulu Beach, aimed at enhancing the literacy skills of elementary school students. In essence, the characteristics defining the course book as a research product are delineated as follows.

1. The course book is meticulously structured, encompassing essential elements such as basic competencies and indicators, product description, instructions for usage, literacy concepts, material presentation, example questions and solutions, literacy activities for students, and reinforcing exercises.
2. The design of the course book revolves around the utilization of the coastal context of Bengkulu Beach as a pedagogical tool, thereby bolstering learning activities.
3. The material is presented in a sequential manner, complemented by supplementary video learning materials.
4. The course book incorporates student literacy activities, fostering an interactive and engaging learning experience.

An illustrative example of introductory material, related to the coastal context and complemented by supporting videos, is provided within the course book currently under development in Figure 3.



<p><b>A. Introduction to the Material</b></p> <p>Pantai Panjang Beach is one of the main tourist attractions in Bengkulu City. Many traders set up sales places on the beach. Traders usually use a cover in the form of an umbrella made of tarpaulin as shown in the following picture. Some of the umbrellas were closed and others were opened. In mathematical concepts, students can be asked to count how many parts the umbrella has opened or which parts have not been opened. This concept can be emphasized to explain fractions.</p>  <p>Figure 1.1 Places selling on the beach (Source: personal doc.)</p>	<p><b>C.Fraction</b></p> <p>Before studying this material, please watch the following video</p> <p><b>Video</b></p>  <p>Based on the video, write down the information that can be concluded regarding the fractional material.</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div>
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**Figure 3.** Example of an introductory display of material using a coastal context

**Coursebook validity test results**

The outcomes of the design stage, embodied in the preliminary draft of the course book, underwent evaluation by a panel of experts comprising lecturers and elementary school teachers. The selection criteria for lecturers were rooted in their proficiency in elementary school learning, leading to the inclusion of two lecturers from Bengkulu University's basic education study program. Teachers participating in the assessment held master's degrees in elementary education and were chosen from a specific elementary school in Bengkulu City. The results of the validity assessment, analyzed using the Aiken index, are detailed in Table 4.

Table 4. Coursebook validity test results

Aspect	Aiken Index	validity
Material	0,57	Valid
Construction	0,80	Valid
Use of Language	0,90	Valid
Use of Coastal Context	0,76	Valid

The findings from the validity analysis, as presented in Table 4, indicate that each assessed aspect possesses an Aiken index exceeding 0.5. This suggests that, theoretically, the material, construction of the course book, language utilization, and alignment with the coastal context of Bengkulu Beach are deemed appropriate. Furthermore, the data underscores a consensus among assessors regarding the evaluation of each indicator within the course book. This observation aligns with the perspective of Retnawati (2014), who posits that the Aiken value reflects the assessors' concordance regarding the item's suitability to the given indicator. These quantitative results affirm the product's adherence to valid criteria. However, in tandem with quantitative analysis, qualitative validity scrutiny was undertaken, particularly regarding suggestions for enhancing the course book provided by the experts. The implementation of validity involved a Focus Group Discussion (FGD)

among researchers, lecturers, and teachers acting as assessors. The suggestions emanating from the FGD, along with the harmonization of perceptions among the participants, consolidated in Table 5.

**Table 5.** Results of the expert reviewer and one-to-one assessments


Expert	Suggestion
Validator 2  (lecturer)	<ul style="list-style-type: none"> <li>▪ Incorporate authentic photographs alongside the presentation of all contexts within the course book</li> <li>▪ Address typographical errors and rectify the utilization of mathematical equations for symbolizing fractions in the written content</li> <li>▪ Integrate a video link beneath the barcode, providing an alternative means to access the associated video material</li> <li>▪ Following video presentations, include activities for students to engage with and respond to the conveyed material.</li> <li>▪ Provide additional information alongside the usage of color words to prevent potential misperceptions</li> </ul>
Validator 2	<ul style="list-style-type: none"> <li>▪ Enhance certain sections of the written content that require improvement</li> <li>▪ Augment the number of example questions and solutions within the course book to facilitate student practice</li> </ul>

The recommendations provided by the validator serve as a guiding framework for enhancing the course book. Emphasis is placed on refining the presentation of material and instructional approaches, encompassing both video presentations and direct modifications to the product. The transformation of the research product, exemplified in Figure 4 and Figure 5, illustrates the outcomes before and after the implementation of revisions.

**Context Problems**

The seating mats on the four selling huts (sales stalls) on Panjang Beach, Bengkulu have different colors. In the first hut, the base is blue, as are the second and fourth huts, while the base in the third hut is yellow. There are a total of 4 huts in the picture. If we relate it to fractional material, the ratio of the yellow hut to the whole is  $\frac{1}{4}$  and the blue hut to the whole is  $\frac{3}{4}$

**Figure 4.** Example of course book before revision (translated from Indonesian)

Context	Problems
	<p>The seating mats in the four stalls (sales stalls) at Panjang Beach, Bengkulu have different colors. In the first hut the base is blue, as are the second and fourth huts, while the base in the third hut is yellow. There are a total of 4 huts in the picture. If we compare with the material the fraction of the yellow base hut with the whole is <math>\frac{1}{4}</math> and the blue hut with the whole is <math>\frac{3}{4}</math>.</p>

**Figure 5.** Course book after revision (translated from Indonesian)

**Coursebook practicality test results**

Following the incorporation of suggested improvements from the validator assessment, a limited trial is conducted to evaluate the ease of use, specifically focusing on readability. Twelve students, carefully selected from two state elementary schools in Bengkulu City, participated in this assessment. During the implementation phase, students were tasked with providing feedback on the course book, considering aspects such as the readability of symbols, images, layout, language usage,

systematic presentation, and the contextual representation. The results of this assessment are outlined in Table 6.

**Table 6.** Product practicality (readability) test results

Question	Score	Practicality
The use of symbols, images, and notations in the course book is easy to understand	4.33	Practical
The writing layout and use of letters are easy to understand	3.45	Practical
The use of language is easy to understand	4.35	Practical
The systematic presentation of the contents of the course book is easy to understand	4.23	Practical
The context used is known	3.94	Practical
Average	4.30	Practical

Table 6 demonstrates that each item satisfies practical criteria, as indicated by the average rating scores from users, specifically students. The highest average score is observed in the areas of language use and writing layout, signifying a higher level of user convenience in these aspects compared to others. In a broader context, the outcomes of the limited trial analysis indicate the practicality of utilizing the course book. Learning tools are considered practical when users perceive them as easy to use in real-world applications (Nieveen & Folmer, 2013).

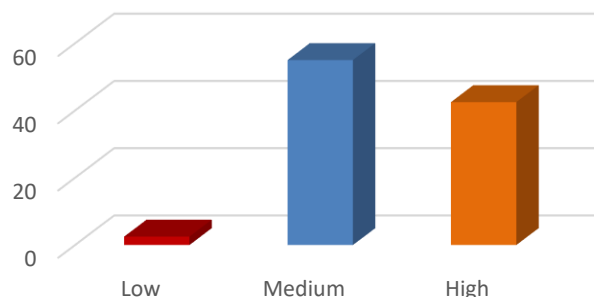
**Assessing the Effectiveness of Coursebooks**

Coursebooks, subjected to validation and practicality testing, undergo extensive evaluation in classroom settings. The trial encompassed 40 students from elementary schools in Bengkulu City, implemented through classroom learning. The teacher integrated the course book into one session of classroom learning, lasting 2x45 minutes. Subsequently, students underwent a mathematical literacy test, and the results are detailed in Table 7.

**Table 7.** Description of literacy test results

Statistik	Score
Mean	67.65
Maks	87
Min	32
Std	10.78

The outcomes of the analysis depicting students' literacy levels across three criteria (low, medium, and high) are presented in Figure 6 below.



**Figure 6.** Distribution graph of student ability levels

The data illustrated in Figure 6 delineates the overall achievement levels of students' abilities falling within the medium to high category. Notably, the attainment of students' literacy abilities at a high level has reached 42.50%. This implies that the utilization of course books in learning significantly influences students' mathematical literacy abilities. Furthermore, these findings underscore the effectiveness of the course book grounded in the coastal context of Bengkulu Beach in fostering literacy skills among elementary school students in their mathematics learning.

## DISCUSSIONS

This research has yielded pedagogical materials in the form of a course book, centered on the coastal context of Bengkulu Beach, with the aim of enhancing the literacy skills of elementary school students. The course book underwent development through the ADDIE stages, though the implementation phase in schools remains pending due to constraints on research time. Evaluation of the course book's development has ascertained its validity across various dimensions, including material, structure, language, and contextual application, as assessed by three evaluators comprising lecturers and teachers. Quantitatively, the Aiken index analysis based on expert evaluation indicates that the course book meets valid criteria, obtaining an Aiken index score exceeding 0.5. These findings affirm the theoretical soundness of the course book in every aspect, aligning with the notion that validity is achieved when the product adheres to theoretical principles (Nieveen, 1999).

The expert assessment highlights the course book's validity within the coastal context, with recommendations to accentuate this context by incorporating contextual photos. It is emphasized that the chosen context should be familiar and relatable to students, aligning with previous research suggesting that utilizing a context close to students enhances interest and facilitates problem-solving understanding (Zulkardi, 2013). The significance of contextual emphasis has been further supported by prior research indicating that problem-based learning within the Bengkulu context contributes to enhanced mathematical literacy skills among students (Susanta, Sumardi, et al., 2023).

The research underscores the effective support provided by the course book, rooted in the coastal context of Bengkulu Beach, for students' literacy skills. The results reveal that, on average, students exhibit high-level abilities, with a mean score of 67.65. These findings align with several preceding studies affirming that contextualized learning aids in the development of students' literacy skills (Kolar & Hodnik, 2020). The observed increase in literacy skills attributed to the course book is further reinforced by supplementary materials, including videos and online-integrated example questions and solutions available on YouTube. Prior research has demonstrated that the incorporation of online-based teaching materials contributes positively to literacy skills (Susanto & Susanta, 2022); (Fonda & Sumargiyani, 2018).

The research results that we have presented show that students' mathematical literacy achievement in the high category reached 42.50%. This shows that learning with the developed teaching materials has an impact on other abilities. This is because mastering literacy will improve your intellect and be able to solve complex problems (Jailani, et. al, 2020), increasing sensitivity in solving everyday problems (Segers et al., 2015; Geiger et al., 2015). In this way, students who master literacy can solve mathematical problems found in everyday life well.

Increasing literacy as a result of using the coastal context teaching materials that we designed is also supported by technology users. The integration of teaching materials with learning videos is an important component in developing teaching materials in the current digital era. We observed that in

learning students actively observed videos supporting the material. Literacy conditions in elementary schools continue to transform using various learning technology platforms following the dynamics of the learning conditions faced (Hamma & Ummah, 2022). So in designing teaching materials, it is necessary to add the use of technology as a support.

As has been explained, the use of teaching materials in a context that is familiar to students in this research in the coastal context has a high contribution to supporting student literacy. We found that in solving mathematical literacy problems students tend to be better at doing mathematical modeling of real problems. We found the role of context in learning as a bridge for students to understand concepts. As found by Mahmudah & Putra (2021), the context of traditional games can encourage learning in the classroom. The use of the Asian games context to support students' abilities (Zulkardi & Putri, 2020) and the use of the local context carried out by Jannah & Putri (2019). The findings of several studies that have been carried out support the findings of this research, namely that learning that uses context (coastal) can have an impact on student literacy. It is important to emphasize context teaching materials because elementary school students are at the stage of personality development and critical thinking (Agnihotri et al., 2021) so teaching materials are needed that support this.

## CONCLUSION

The research findings establish that the course book, grounded in the coastal context, meets the criteria of being valid, practical, and effective for enhancing the literacy abilities of elementary school students. The research departs from previous studies by highlighting that the coastal context, particularly in Bengkulu, designed with integrated videos, supports students' mathematical literacy abilities. The research's outcomes prove effective in addressing the challenge of enhancing students' abilities through instructional materials. However, it is acknowledged that the research has limitations as it primarily focuses on literacy skills. Future research endeavors could expand the scope by incorporating variables such as reasoning abilities, critical thinking, and creative thinking. Recommendations from this research emphasize the significance of considering specific characteristics in the development of textbooks. These include leveraging the coastal context of Bengkulu Beach, integrating literacy activities, and incorporating video materials with example questions on platforms such as YouTube. The research underscores the importance of evaluating material appropriateness, especially when incorporating contextual elements.

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