

CHAPTER III METHODOLOGY

This chapter discusses the methodology used to conduct the research in accordance with Chapter One and Chapter Two. The methodology chapter should be explicitly linked to the research objectives presented in earlier chapters and justified in relation to them. This chapter explains the research design, data collection, and techniques used for data analysis to carry out the research. First, why this method was chosen as a reference for conducting the research. Then, a brief description of the case study and how the research design overview will be presented. The last one details the data collection, followed by data analysis using graphs, and finally, a clear understanding of the task distribution for this research.

3.1 Research Design

This research employs a Research and Development (R&D) approach to develop GIRI (Gresik Inspirational Rakyat Illustrated Stories), a trilingual storybook designed to support students' English reading and writing skills in “Sekolah Rakyat” in Gresik. The R&D method is chosen because the study aims not only to examine educational phenomena but also to produce an instructional product and evaluate its feasibility and effectiveness in actual classroom practice. According to Gall et al. (2003, as cited in Rahayu, 2025) educational research and development is a process for developing and validating educational products through systematic stages of design, testing, evaluation, and revision until the product is suitable for educational use. Recent findings further highlight that R&D is a systematic approach to producing practical solutions through a structured, validated process (Rahayu, 2025).

Through R&D, learning innovation models can be designed, tested, and systematically improved based on empirical research results describing students' conditions and characteristics. The development of learning models that focus on increasing active student involvement in the teaching and learning process can be more measurable and directed (Depita, 2024). The procedures in this research are

adapted from the R&D model proposed by Borg and Gall, which originally consists of ten steps, such as research and information collecting, planning, developing the preliminary form of the product, preliminary field testing, main product revision, main field testing, operational product revision, operational field testing, final product revision, and dissemination. The R&D method stage can be seen in Figure 3.1.

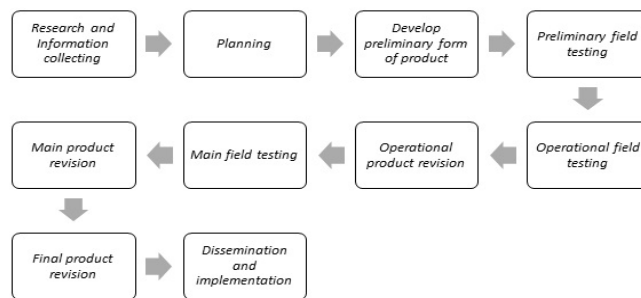


Figure 3.1 10 Stages of R&D Method (Borg & Gall, 1989)

Nevertheless, in practice, some educational researchers simplified the ten steps to suit the needs and context of the research (Rahayu, 2025). In this study, the Borg and Gall R&D model was adapted by omitting the operational field testing, operational product revision, main field testing, and main product revision stages to suit the limited time, scope, and resources of undergraduate research. This research was constrained by time and place in perfecting the ten research steps according to the reference base used, and it therefore stopped at the sixth step, with recommendations to be perfected at future opportunities (Nurliani et al., 2023). These steps are explained as follows. This practice is common in educational R&D, where the Borg and Gall cycle is frequently simplified or truncated. As seen in Figure 3.2, a common modification involves six essential stages: (1) research and information collection, (2) planning, (3) development and preliminary product, (4) preliminary field testing, (5) main revision, and (6) small-scale field testing.

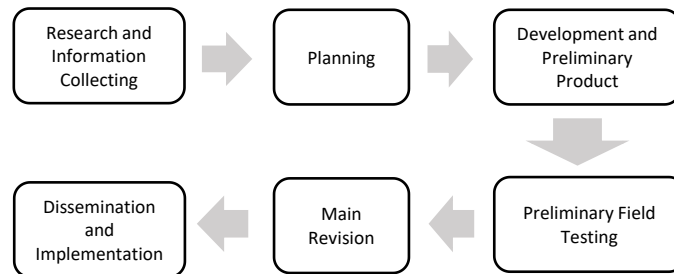


Figure 3.2 6 Stages Adaption of R&D Method (Borg & Gall, 1989)

Several studies have successfully implemented this 6-stage adaptation. As an example, Imron et al. (2022) applied these stages in developing an English learning module related to the Electrical Engineering study program, which featured content from the book tailored to students' needs. Other studies also indicate that reducing the number of stages in the methodology does not diminish the effectiveness of the development process, but instead, it allows researchers to tailor the procedure to specific educational objectives and practical limitations (Afriani et al., 2025). Therefore, the use of the 6-stages adapted from Borg and Gall in this study remains methodologically appropriate for application.

This process integrates quantitative (e.g., questionnaires) and qualitative (e.g., interviews) data collection techniques to assess needs, design interventions, and evaluate product development outcomes, making the product useful, usable, and desirable (Khanal, 2014). Each stage combines various data sources (documents, interviews, observations), referred to as triangulation, to achieve a better understanding. Educational Research and Development refers to a systematic process for designing, developing, and validating educational products such as teaching materials, textbooks, instructional media, and learning models. Through these stages, the researcher systematically develops, evaluates, and refines the GIRI book to ensure that it is appropriate, usable, and effective as an English learning medium for community school students.

3.1.1 Research and Information Collecting

To collect thorough data, the researchers conduct several activities. First, interviews with the English teacher and principal are held to explore their views on students' language difficulties, the limitations of current materials, and their expectations for learning media. Second, questionnaires are distributed to students to gather information about their interests and responses toward the use of illustrated storybooks as a learning tool. The researchers also review the content and prior studies on children's storybooks, trilingual instructional materials, and the role of storybooks in developing English literacy skills. Several existing storybooks are examined to identify effective design elements, language features, and activity types suited to students' levels. The findings from this stage serve as the basis for determining the content, language level, design, and learning activities included in the GIRI book. Overall, this stage aims to identify students' needs, learning difficulties, and the availability of instructional media, particularly regarding English reading and writing skills in "Sekolah Rakyat".

a. Principal Interview and English Teacher Interview

An interview was conducted with the school principal and English teacher to gather contextual information about the student body. Topics included the students' socioeconomic and cultural background, the school's admission process, and details of the current curriculum. Involving the principal in needs analysis is recommended in R&D literature (Hamzahet al., 2025) because administrators can explain institutional factors affecting marginalized students. For example, insights on student demographics and school resources helped us tailor the storybook content and distribution strategy to SRG's unique context. This interview was held to gather some information and document the existing curriculum and learning challenges. The teacher described which English chapters are currently taught, which skills students struggle with (e.g., reading comprehension, writing basic sentences), and what supplementary materials are lacking. The teacher's feedback directly informed the storybook's language level, topics, and exercises.

The data collected during the information collecting stage were obtained through semi-structured interviews conducted with the principal and the English teacher of SRG. The interviews were designed to explore the school's background, student demographics, institutional readiness, instructional practices, and the topic preferences relevant to storybook development. The data were subsequently analysed using an interactive model that is inherently inductive and interpretive. Following the procedures described by Braun and Clarke (2006), this study employed Thematic Analysis (TA) to systematically process the qualitative findings. This approach aligns with the perspective of Ahmed et al. (2025), who emphasize that TA provides a systematic yet adaptable structure essential for analysing qualitative data. The analysis proceeded through six stages (familiarisation with the data, generating initial codes, generating themes, reviewing the themes, naming themes, and producing the final report).

b. Questionnaire

Before designing the storybooks, a structured questionnaire was administered to SRG students to obtain a clear picture of their English reading and writing proficiency, the challenges they encounter, and their perceptions of storybooks as learning tools. The survey also explored whether storybook-based narratives would stimulate their interest and motivation, drawing on evidence that story-driven materials can meaningfully enhance learner engagement and motivation in language learning contexts (Temel and Yilmaz, 2025). Incorporating student questionnaires at the analysis stage is a well-recognized procedure in Research and Development studies, as it ensures that instructional products are grounded in actual learner needs.

The pre-development phase began with the administration of this diagnostic questionnaire to generate detailed insight into students' attitudes toward English and their learning difficulties. To transform these raw responses into actionable design criteria for the GIRI trilingual book, the data underwent a systematic descriptive statistical analysis. To complement the

mean analysis, percentage calculations were applied to visualize the proportional distribution of student responses. This statistical distillation was crucial in ensuring that the development of the GIRI storybook was anchored in the aggregated pedagogical needs of the students rather than anecdotal assumptions. The percentage for each category was computed using the following Formula 3.1.

$$P = \frac{f}{N} \times 100\% \quad (3.1)$$

Where P represent the percentage of the specific response category, f denotes the frequency of responses in a specific category, and N refers to the total number of respondents (25), respectively.

Following the calculation, the resulting percentages were interpreted to identify dominant trends in students' responses. This step allowed the researcher to clearly see which aspects of English learning were perceived as most challenging and which instructional approaches were considered engaging or effective by the students. By converting the data into percentages, patterns that might not be immediately visible in raw numerical form became easier to understand and compare across different questionnaire items.

Furthermore, these findings served as a foundation for determining the key design features of the GIRI trilingual storybook. For instance, if a high percentage of students indicated difficulty in writing or limited creating to English stories, these areas were prioritized in the content development. In this way, the statistical results were not merely descriptive but also functioned as a decision-making tool that directly informed the structure, language level, and storytelling approach of the product. In conclusion, the integration of mean scores and percentage analysis ensured that the development process was data-driven, systematic, and responsive to actual learner needs, thereby increasing the relevance and effectiveness of the GIRI storybook as a learning tool.

3.1.2 Planning

In the planning phase, the researcher focused on developing the GIRI (Gresik Inspirational Rakyat Illustrated Stories) book as a trilingual storybook resource to support “Sekolah Rakyat” students in Gresik build their English reading and writing skills. This phase functioned as a vital bridge between the diagnostic needs analysis and the instructional design process, involving the synthesis of linguistic requirements, cultural preservation, and the unique socio-educational landscape of the target school. The primary objective was to ensure the storybook was pedagogically sound, culturally resonant, and accessible to learners by integrating culturally relevant narratives that support language learning and cultural identity (Azima and Algifari, 2025).

Based on the results of the needs analysis the planning stage addressed learning strategies, supporting media, and evaluation methods following the guidelines of Borg & Gall (1989). Several key design decisions were made during this phase, covering story theme selection, typographic and colour system design, character and illustration style, and layout arrangement.

a. Story Theme Selection

The story themes were determined by the researchers based on a careful review of Gresik’s local cultural landscape. The selected themes draw from three primary categories (notable place names, traditional festivals, and significant cultural celebrations indigenous to Gresik, East Java). This thematic focus was chosen to ensure that the narratives remain grounded in the students’ immediate cultural environment, making the content both geographically and historically meaningful. By centring the stories around landmarks, festivities, and communal traditions specific to Gresik, the GIRI storybook serves not only as a language learning resource but also as a medium for preserving and transmitting local cultural knowledge to younger generations.

b. Typography

Font Poppins is selected as the primary typeface for the GIRI storybook. This choice based on its clean, rounded letterforms, which are highly legible for young and developing readers, and its modern aesthetic that complements the illustrated format of the book.

c. Colours-Coded Language System

To support readers in distinguishing the three languages presented in the storybook, a colour-coding system applied to the text. English text was rendered in brick red, Indonesian in dark navy blue, and Javanese in black. This visual differentiation functions as a consistent linguistic cue, enabling students to navigate the trilingual content with greater ease and clarity.

d. Character Design and Illustration Style

The characters in the storybook were designed using vibrant, full-colour illustrations executed through manual drawing techniques. This approach was chosen to produce a warm, hand-crafted visual quality that feels more personal and culturally authentic compared to illustration methods, while also making the book visually engaging for the target readers.

e. Layout Arrangement

The layout of each page is structured so that the written text is positioned at the top of the page, with the illustration placed beneath it. This arrangement ensures that the narrative text remains the primary visual focus, while the illustration serves as a complementary semantic anchor that supports comprehension without obscuring the written content. The visual design developing using Figma as the primary design to create the illustrations and refine with Canva across layouts and pages.

3.1.3 Developing Preliminary Form of Product

The development phase is the core stage of the R&D process, as it transforms the results of the needs analysis into a tangible instructional product. The main objective of this phase is to produce an initial prototype of the GIRI trilingual storybook that is ready for expert validation before further revision. In instructional design research, this stage focuses on converting conceptual plans into structured

learning materials that align with learner needs and pedagogical goals (Cahyadi, 2019).

1. Students' Activities: Creating Stories

Students' activities in creating stories during the development of the preliminary form of a product, as outlined in Borg and Gall's R&D model, involve drafting and shaping the initial version of educational materials or media. This stage focuses on producing a prototype that reflects the core ideas and learning objectives, often incorporating students' creative input to ensure relevance and practicality. For example, in making short story materials, students participate by generating story content, which helps refine the product's design and usability before the field (Taqwim and Luthfiyanti, 2022).

In this specific implementation, before beginning their writing task, the students are given material on how to compose a story to develop their writing skills. They are also required to read the explained materials in English to enhance their reading proficiency. Following this preparation, a total of 25 students are divided into 7 groups. Each group is assigned to create a story based on predefined themes, with each group working on different topic. These activities not only contribute to the product's initial form but also foster students' creative thinking and collaborative skills, aligning with educational goals.

2. Determining Stories

The first step involves revising and organizing the selected student-written stories. These stories are rewritten by the researchers to follow a clear narrative structure consisting of orientation, complication, and resolution, ensuring that they reflect the conventions of a storybook while remaining easy for students to understand. A consistent narrative structure helps to follow the storyline, identify characters and conflicts, and understand cause-effect relationships within the text (Boyd et al., 2020).

In addition to structural organization, the language of the stories is adjusted to match students' reading levels. Text difficulty is a crucial factor in

language-material development because materials that are too complex may reduce motivation, while appropriately measured texts can enhance comprehension and engagement. Therefore, editing focuses not only on story content but also on simplifying sentence patterns, selecting accessible vocabulary, and ensuring clarity of meaning.

3. Editorial the Stories

After the stories and activities were finalized, the researchers carried out an editorial review to polish the stories that the students made. An editorial review phase is widely recognized as essential for improving educational materials by refining language, organization, and clarity to ensure they are pedagogically effective and culturally authentic. This step enhances the overall quality and readability of resources before final validation or use, aligning with established practices in educational content development. Thus, the editorial review is a key phase that ensures educational resources are both clear and culturally appropriate before their production (Azim et al., 2018). During this editing, several sections of the story texts were reworked to boost grammatical precision, sentence flow, and overall narrative smoothness, without altering the students' original intent. The focus was on simplifying the language to better suit instructional purposes.

4. Javanese Language Translation

After the step to edit the whole text, and since GIRI was designed as a trilingual storybook, the researchers also handled the translation into Javanese. For this, the researchers used AI tools like 'Lingvanex' to translate the stories from Indonesian to Javanese, which sped up the process and made multilingual content more accessible while keeping the language consistent. After the AI translations, researchers had them proofread by Javanese language experts to ensure the wording, grammar, and overall structure were accurate and natural. Once translations were finalized, researchers arranged the story texts side by side in Indonesian, English, and Javanese to create the book's trilingual layout. This setup lets students compare the same story across languages, helping them build comprehension and cultural connection.

5. Designing the GIRI book

During the development of the preliminary product, the researchers realized the conceptual design of the GIRI book by integrating three core components. First, regarding illustration selection, the researchers curated character visualizations and story backgrounds that accurately represent Gresik's local identity while remaining engaging for students. These illustrations employ a semi-realistic art style to breathe life into the storybooks, ensuring that the moral values within the narratives are effectively conveyed through visual cues. Next, specific design elements, such as local iconography, traditional ornaments, and a warm, high-contrast colour palette, were applied to reinforce the book's cultural atmosphere.

To support the trilingual framework (Indonesian, English, Javanese), the text is distinguished by consistent typography and specific color-coding, allowing students to differentiate between the languages with ease. Last is about layout, and the layout is meticulously structured based on the principle of a balanced image-to-text ratio. The researchers implemented a layout where the background illustrations are immersive yet unobtrusive, ensuring a comfortable reading experience. Narrative text is strategically placed within the 'negative space' to preserve the integrity of the illustration details, utilizing high-legibility fonts specifically chosen for language learners.

3.1.4 Preliminary Field Testing

Before the study, the GIRI book was piloted with students, and the language validation stage was prioritized. Given that the book is designed in three languages (Indonesian, English, and Javanese), it is essential to ensure that every section, from narrative to instructions, features accurate grammar and cultural appropriateness, as this validation process is designed to support English learning materials. For instance, validation from experts is commonly validated by both media experts and language or material experts, both obtaining "very valid" ratings for content clarity, interactivity, and technical quality (Yulia et al., 2023). Media expert validation phase, wherein a specialist in instructional design and visual communication

evaluated the material’s coherence, layout functionality, and the pedagogical efficacy of the trilingual typography. This evaluative stage was critical in ensuring that the illustration typography. This evaluative stage was critical in ensuring that the illustrations did not merely serve as decorative elements but functioned as essential semiotic scaffolds for the “Sekolah Rakyat” students. In contrast, the validation of Javanese language materials typically assesses diction, sentence clarity, punctuation, and correct spelling, as well as layout and design, to ensure linguistic accuracy and cultural suitability (Pratiwi and Insani, 2025). Meanwhile, media validation for both languages involves the learning tools, including media design, appropriateness, and reliability, yielding high scores and indicating good quality and usability (Ngurah and Laksana, 2024).

Numerical data from the pilot study were evaluated using quantitative descriptive analysis, specifically focusing on validity and feasibility using a Likert 4-point scale. To determine the product’s technical and content integrity, validity was assessed based on expert feedback from English, Javanese, and a media validator. These values were calculated using a formula as detailed in Figure 3.3.

1 = Strongly Disagree	(SD)
2 = Disagree	(D)
3 = Agree	(A)
4 = Strongly Agree	(SA)

Average = $\frac{\text{Total Scores} \times 25}{\text{Questions}}$

Figure 3.3 Formula of Quantitative Calculations

After the quantitative calculations were performed, the results were categorized based on the validity criteria modified from Akbar (2013), presented in Table 3.1.

Table 3.1 Categorization of Validity

No	Value Achievement (Score)	Validation
1	0% - 40%	Invalid
2	41% - 60%	Less Valid
3	61% - 80%	Valid
4	81% - 100%	Very Valid

Expert validation involving English educators, Javanese linguistics, and a media expert constitutes a crucial step in the development of educational media to ensure content accuracy, linguistic appropriateness, and overall quality. This process serves to determine whether the developed product meets pedagogical standards and is viable for implementation. In alignment with previous studies, this validation involves various specialists, such as material experts to evaluate content substance, language experts to assess linguistic precision, and media experts to examine the design's suitability for publication and its functional usability.

In the development of the GIRI product. The aforementioned formula is utilized to calculate the experts' evaluation results to ensure that their quality aligns with the validation criteria presented in the table above. This assessment is conducted through a questionnaire instrument that measures several aspects, including content accuracy, cultural relevance, and user engagement. Expert responses are categorized using a 4-point Likert scale, where each category reflects the expert's level of agreement with the provided evaluation statements.

3.1.5 Revising Main Product

The product revision stage was conducted after preliminary field testing to refine the initial design version of GIRI (Gresik Inspirational Rakyat Illustrated Stories). In accordance with the Borg and Gall Research and Development model, this stage aims to improve the product quality based on empirical data from users before proceeding to wider implementation. Revision does not merely involve technical editing but represents a systematic refinement process intended to enhance instructional validity, practical usability, and the contextual relevance of the product. Revision data were obtained from student questionnaires and teacher interviews conducted at "Sekolah Rakyat" in Gresik.

The revision process was grounded in empirical data collected during the field testing. Quantitative data were obtained through student questionnaires, which provided insights into students' engagement, comprehension levels, and overall responses to the GIRI book. This was complemented by qualitative data gathered from teacher and principal interviews, offering deeper perspectives on instructional

effectiveness, classroom applicability, and areas requiring improvement. Both data sources were collected from students and educators at “Sekolah Rakyat” in Gresik, ensuring that the revisions were closely aligned with the real conditions of the target product.

Based on this combined analysis, specific improvements were made into the product. These included refining the clarity of instructions, adjusting language difficulty to better match students’ proficiency levels, improving the visual layout and illustrations to increase engagement, and ensuring that the stories more effectively integrate local cultural elements from Gresik. Through this iterative revision process, the GIRI book evolved from an initial prototype into a more polished and pedagogically sound learning resource. This study is also ready for further validation and broader implementation.

3.1.6 Dissemination and Implementation

The final phase focused on introducing and integrating GIRI into everyday learning activities at “Sekolah Rakyat” Gresik. This was not limited to simply distributing the book. Instead, the process included teacher workshops, the circulation of printed copies, and the provision of digital PDF versions to ensure continued and flexible access. During the workshops, teachers were guided on how to incorporate GIRI into their reading and writing lessons. They explored practical techniques such as comparing vocabulary and sentence structures across languages and using narrative scaffolding to support students’ comprehension and writing development.

The implementation stage was designed with sustainability in mind. Rather than treating GIRI as a short-term research product, it was embedded into the school’s English curriculum so that it could function as a regular instructional resource. In other words, the goal was long-term use, not temporary experimentation. As highlighted in recent discussions on educational innovation, dissemination is meaningful only when it is institutionally supported, embraced by teachers, and adapted to the local context (Supardi et al., 2025).

3.2 Task Distribution

In this study, the distribution of work focuses on the systematic allocation of responsibilities among the researchers to optimize product development efficiency. Task distribution is conducted by considering the researcher's specialization, such as in trilingual material development and statistical data analysis, while attending to the priority scales of the R&D stages to ensure each development phase is completed on time. The use of data-driven approaches and the analysis of expert validation results assist the researchers in strategically allocating the focus of product revisions, thereby enhancing the final quality of the developed media. Within this collaborative management, the researchers implement an adaptive workload distribution that accounts for academic competencies and resource availability, ensuring that research productivity remains fair and accountable. Overall, task distribution is an important element of this R&D and integrating time management with the researchers' substantive expertise to produce efficient.

The distribution of tasks presented in Table 3.9 illustrates a clear and systematic division of responsibilities between the two researchers across the six stages of the Research and Development (R&D) model. The table highlights how each stage was collaboratively executed, with specific roles assigned to ensure efficiency, consistency, and alignment with the research objectives. This structured allocation not only clarifies each researcher's contribution but also demonstrates how their complementary roles supported the overall development process. The following explanation further elaborates on how these responsibilities were carried out in each stage, can be seen in Table 3.2.

Table 3.2 Research Task Allocation

No	The Stage (R&D)	Ashila's Responsibilities	Claudia's Responsibilities
1	Research and Information Collecting	Collected data through questionnaires and Interviews with students, teacher, and principal to identify students' needs, challenges, and preferences.	Organized and structured the collected data for analysis.
2	Planning	Provided field-based insights to support accurate and relevant planning.	Designed instructional framework, formulated objectives, determined scope and sequence, and selected pedagogical approaches.
3	Development and Preliminary Product	Edited stories and translations; ensured accuracy and cultural appropriateness of trilingual content (English, Indonesian, Javanese). Coordinated with the Javanese language validator to distribute instruments and managed the validation process.	Developed the initial GIRI book, including story structure, learning activities, and media layout.
4	Preliminary Field Testing	Revised linguistic aspects such as clarity, translation accuracy, and narrative coherence.	Coordinated English and media expert validation to prepare instruments and compiled results.
5	Main Product Revision	Conducted field testing, implemented the product in the classroom, and collected feedback from students and teacher.	Refined layout, design, and instructional structure based on validators' feedback.
6	Small Scale Field Testing		Prepared the final product, assisted during implementation, and ensured effective use of the media.

The project benefited from a strategic division of labor between the two researchers. Ashila's contributions were primarily focused on field-oriented and linguistic tasks, including data collection, content editing, coordination with the Javanese language validator, and conducting field testing with feedback collection. Conversely, Claudia directed the technical and instructional aspects of development, such as planning the learning framework, developing the GIRI book,

coordinating English and media validation, and refining the product design. This collaborative synergy ensured a high-quality balance between thematic content and instructional methodology. As a result, each stage of the development process was carried out systematically and effectively, leading to a final product that is pedagogically sound, linguistically accurate, and highly viable for classroom implementation.

3.3 Budget and Costing

The development of the GIRI trilingual storybook involved a series of expenditures across multiple stages, from data collection to final production. The total cost incurred throughout the entire development process amounted to Rp1.592.000. The largest expenditure categories were book design and printing, which together accounted for approximately 65% of the total budget. Additional costs covered field survey logistics, expert proofreading, participant rewards, and intellectual property registration (HKI). A detailed breakdown of expenses is presented in the Table 3.3.

Table 3.3 Expenses

Description	Amount (IDR)
Photocopy for Survey Needs	33.000
Rewards for Students Respondent	50.000
Snacks for Students Respondent	80.000
Javanese Language Proofreading Fee	150.000
Down Payment - Book Design	100.000
Down Payment - Book Design (2)	300.000
Final Payment - GIRI Book Design	300.000
Printing of GIRI Book	350.000
Gift for SRG Teacher	177.000
2 HKI Materials (Revised)	26.000
2 HKI Materials (Revised)	26.000
TOTAL COST	1.592.000

This cost documentation is intended to serve as a practical reference for future researchers or educators interested in developing similar trilingual storybooks. The total investment of under Rp2.000.000 demonstrates that producing a culturally grounded, expertly validated instructional storybook is financially accessible, particularly when student-generated content is utilized, and design work is outsourced locally. Future researchers or projects may adjust costs according to the number of copies printed, the complexity of illustrations, and the scope of expert consultation required.