

Developing Genre-based English Worksheet for Vocational Students by Using 4-D Development Model to Improve Writing Skill

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Abstract

The research aims to develop genre-based English worksheets for the *Basic English course* and assess the validity of student worksheets of vocational students. This study explores worksheet development using a 4-D development model with stages of definition, design, development, and dissemination. This study employed research and development design. The instrument used was an observation by analyzing student needs involving vocational students at Akademi Komunitas Negeri Putra Sang Fajar Blitar, Universitas Sumatera Utara, Politeknik Negeri Medan, and Universitas Bengkulu. In define stage, this writing worksheets are emphasized with a reflective thinking approach so that students understand the material presented without obstacles. The independent learning curriculum is the basis for enriching the quality of learning to create education with more character. In design stage, reflective thinking strategies are designed to train students' reflective thinking skills in writing texts in the form of long, genre-based functional texts. In development stage, material feasibility tests, language use, and appearance are tested by validators through a validation process. The development of this worksheet began to develop through criticism and ideas on the validator sheet that had been provided. Further revisions and analysis are carried out to then produce the final writing worksheet. In disseminate stage, Module distribution was also carried out for vocational higher education in English to disseminate student writing worksheets to other vocational universities in the form of e-books and printed books.

Keywords: worksheet, material development, vocational school

1. Introduction

Vocational education is currently experiencing good development, both in quality and quantity. In terms of amount, many vocational colleges are growing and producing graduates ready to work according to their expertise. The development of vocational education is supported by Presidential Regulation (2022) concerning the Revitalization of Vocational Education and training by improving Vocational Education and Vocational Training in a comprehensive, sustainable, integrated, and coordinated manner. This policy positively impacts vocational students, who are supported to be more active in improving their expertise.

Several vocational campuses in Indonesia have welcomed the government's concern for developing vocational campuses. In this case, several vocational colleges, such as *Akademi. Komunitas. Negeri. Putra. Sang. Fajar. Blitar (AKB)*, *Universitas. Sumatera Utara (USU)*, *Universitas Bengkulu (UNIB)*, and *Politeknik Negeri Medan (POLMED)* also actively develop vocational education in Indonesia. One of the concrete forms of supporting vocational education is conducting joint research to provide a correct understanding of the meaning of education, especially in English courses. One of the approaches suitable for teaching English in vocational college or campus is genre-based approach. Genre is a specialized term used to describe a particular style of writing or speaking (Aswani et al., 2023; Namaziandost et al., 2020; Yusuf et al., 2021; Zein et al., 2019; Zein et al., 2021). It encompasses a wide range of spoken or written forms of communication that reflect artistic intentions. Understanding genre can be beneficial for students as it enhances their abilities in linguistic communication and prepares them for achieving social objectives (Manzouri, 2015).

At the vocational education level, English is included in general basic subjects that must be taken. Not only as a compliment, but English also plays an essential role in producing qualified graduates. Graduates not only have expertise according to the major they take, but they can also use English well in the field of work. This is considering that higher education is a "producer" of labor where English is an essential prerequisite for someone facing job competition and will determine one's career development. Thus, mastery of English for prospective workers is needed, which is a challenge for English lecturers. The vocational education level had a big responsibility to equip graduates with adequate English skills to compete in the world of work.

For this reason, many students perceive English as a complicated subject, requiring many particular ways to master it. English lecturers at vocational institutions must use the right teaching strategies to teach and facilitate learning effectively. In learning English, there are four

general skills that students must master, namely reading, writing, listening, and speaking. Writing is one of the most challenging skills among the four skills for students to achieve or master in Indonesia.

In addition, the time for English courses at vocational college is minimal, with a large number of classes with only one semester. More than the learning in Basic English class itself is required. As an English lecturer, this is a responsibility that must be carried out because writing is a fundamental skill. Students must write ideas into good texts if they want to convey ideas. Moreover, writing skill is needed to write journals, final assignments, and so on as a requirement for graduation. Writing is also required in the world of work. To overcome the problems that students face, we need the most effective approach. For this reason, researchers investigated the reflective thinking of vocational students by developing worksheets that could improve writing skills for vocational students on the 4-D (define, design, develop, and disseminate) development model (Thiagarajan & Semmel, 1974).

The worksheet development design in this research is a 4-D development model. The model includes definition, design, development, and dissemination and was chosen to develop English worksheets for vocational students to improve writing skills at AKB, USU, UNIB, and POLMED.

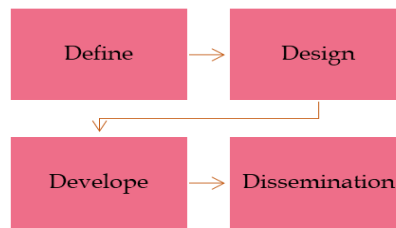


Figure 1. 4-D Development Model's Stage by Thiagarajan & Semmel

The defined stage is also called the needs analysis stage. In worksheet development, the researchers, who are also English lecturers, analyze and gather information as far as development needs to be done. This stage is an analysis of previous research and related literature. At the design stage, the researchers must create criterion-referenced tests or test standards based on the findings of learning objectives analysis and student analysis by assembling learning achievement tests, selecting media based on the findings of concept analysis, student characteristics, and task analysis as worksheet users; and finally, evaluating the effectiveness of the tests at each stage, as well as the distribution of worksheets with various media; selection of formats for designing learning media, approaches, selection of strategies, learning resources, and methods; and the initial design includes planned learning activities and the practice of learning abilities that are always different through microteaching. At the development stage, there are two activities, namely expert appraisal accompanied by revisions to get improvement suggestions and developmental testing to obtain suggestions and criticisms in the form of responses from the validators on the worksheets that have been developed. Then, the dissemination stage was done to promote the product resulting from the development to be accepted by users (individual or group) (Thiagarajan & Semmel, 1974).

In this research, researchers focused on applying writing skills by developing student worksheets through a 4-D model in vocational education. Vocational education consists of several majors prioritizing skills, where English courses will later become a supporting tool to strengthen student skills. This model was developed to improve vocational students' writing skills in defining, designing, developing, and disseminating materials. Students can also be trained to think critically. One is through worksheets lecturers use to evaluate students' abilities, including writing skills in English courses.

Several previous studies examine the progress of instructional materials and student worksheets. Lestari (2021) developed an Andragogy-Based English Learning Module in the Biology Education Study Program at Universitas Muhammadiyah Palembang. This research produces andragogy-based English modules that influence student learning outcomes with the Rowntree Model through the planning, development, and evaluation stages. Plus, there are several stages involving expert review, self-evaluation, small group evaluation, one-on-one evaluation, and field tests. Hakim et al. (2019) developed English teaching modules based on Contextual Teaching Learning for the Sharia economics study program. Appointed based on the difficulty of determining teaching materials, the results of this study are teaching materials for English courses in the form of the English for Specific Purposes (ESP) module with the Contextual Teaching and Learning approach, which was developed using the ASSURE model through the stages of learning analysis; setting standards and objectives; selection of strategies, technology, media, and teaching materials; include student participation and evaluation. Novia developed English-language teaching materials for STMIK STIKOM Indonesia students studying Information Technology based on an investigation of workplace demands. The results of this research are teaching materials oriented toward analyzing graduates' needs using the ADDIE model.

This research is related to previous research but has differences. This research focuses on developing worksheets of Basic English courses for vocational students from various study programs. The method employed is a 4-D model that defines, design, develop, and disseminate. Creativity is essential for English lecturers to provide comfortable learning for students during this one semester. As an English lecturer, it is essential to prepare the appropriate worksheet so that learning can be well-directed as planned. Therefore, this research was conducted to prepare highly competitive human resources, which aims to develop an English worksheet according to the analysis of the needs of vocational students at AKB, USU, UB, and POLMED.

2. Method

This research was designed by developing an English worksheet for students at vocational colleges (AKB, USU, UNIB, POLMED). Generally, Latief (2012) stated that educational development research was designed to develop educational products such as textbooks, curricula, learning media, syllabi, teaching modules, assessment instruments, and other educational products. A 4-D model was employed as a reference for this study, with four stages: define, design, develop, and disseminate (Thiagarajan & Semmel, 1974). The reason for using the 4-D model is because this model is recommended in developing learning tools. The product developed is then tested for feasibility using product validity and trials. A needs analysis also occurred because this research was included in development research to hone students' level of writing progress through writing worksheets based on a reflective approach whose material would be developed using a 4-D model. The content of the material is obtained through learning indicators. Furthermore, the teaching material concepts are presented by the lecturer based on the competency standards for the English language course developed and the formulation of learning objectives, based on the analysis produced with the learning objectives developed into student worksheets. Then, the material was developed with a reflective thinking approach, which presented material close to students or experiences that students had gone through. It focused on improving writing skills.

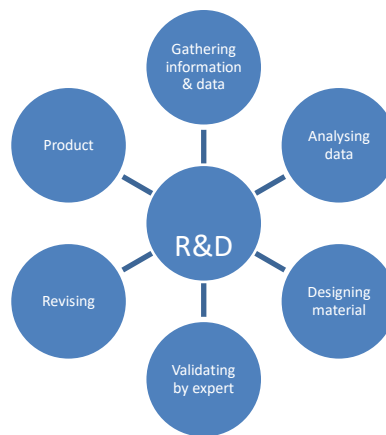


Diagram 1. Research and Development Phase

Then, it was developed through R&D (research and development) to be a writing worksheet, namely data and information collection, needs analysis, media design, data validation with experts, product revision, and final product design developed for vocational students. The worksheet was validated by two validators who are experts in the field of vocational education and English lecturers who are experienced in English. The validator's assessment of the worksheet's validity. To measure the feasibility of the worksheet by the criteria established by Laurens & Ratumanan (2011). The following is a table of assessments.

Table 1. The Level of Validation Assessment

Achievement level	Qualification
3,6 – 4	Very valid
3 – 3,5	Valid
2,1 – 2,9	Less Valid
1 – 2	Invalid

Table 1 assessed the validation process starting from a score of 3 - 4, which contained material, appearance, and use. The assessment must meet the criteria to declare this worksheet valid. However, if the assessment were invalid, revisions would be done until it reached valid criteria.

1) *Instrument and Procedure*

This research involved vocational students at *Akademi Komunitas Negeri Putra Sang Fajar Blitar (AKB)*, *Universitas Sumatera Utara (USU)*, *Universitas Bengkulu (UNIB)*, and *Politeknik Negeri Medan (POLMED)*. The methods employed to collect the developing research data required for this study were defined, designed, developed, and disseminated (4-D model). Data was collected by observing the needs of vocational students.

2) *Data Analysis Procedure*

Data is analyzed by reducing, namely summarizing, selecting, and focusing on the essential things from the data. By reducing, researchers can get data based on the research problem. Researchers reduced data from all observations (from the needs of vocational students). Then, the researchers summarized, sequenced, and organized the data. In this step, the researchers described the answers to the research problem. This research described all data from observation. Through observations, researchers knew the worksheet that matched the needs of vocational students. The conclusion of the research consisted of the research findings derived from the problem-based analysis.

3. Results

The 4-D model was a method used in the worksheet development process, which was divided into "define," "design," "develop," and "disseminate." Initially, the researcher defined the students' and material needs. Then, worksheets were developed based on students' English skills, interests, and needs from interviews and questionnaires. Then, the researcher determined the selection of media and formats at the design stage. The material on the worksheet is presented in the form of an image. The purpose was to make students easily understand the material. Here is the list of worksheets that were developed based on students' English skills, interests, and needs through a genre-based approach:

Table 2. Topics and the genre-based Text used in the chapter

Weeks	Topics	Genre-based used
1.	Greetings	Descriptive Text
2.	Making Introduction	Descriptive Text
3.	Time and Days	Narrative Text
4.	Daily Routines	Report Text
5.	Short Functional Text	Report Text
6.	Phoning Skill	Explanation Text
7.	Congratulating, Thanking, and Sorry	News Item
8.	Traveling	Recount Text
9.	Abilities	Explanation Text
10.	Requesting and Offering	News Item
11.	Making Plan	Procedure Text
12.	Giving Direction and Process	Procedure Text
13.	Preference	Discussion Text
14.	Opinions	Discussion Text
15.	Agreement and Disagreement	Exposition Text (Analytical)
16.	Making Suggestion	Exposition Text (Hortatory)

The first meeting/chapter begins with the topic "Greeting." This topic discusses how one greets the other person in English. Then, he continues with how someone introduces himself. This topic applies descriptive text. The text used as reference material, and practice is how someone introduces himself and others. The grammar highlighted in this chapter uses pronouns such as; "Hello, **my** name is Andy. **I** am 18 years old."

Continuing into the second week, the topic discussed was "Making Introduction." This topic is no longer focused on self-introduction but more broadly, namely, Introducing general things. The highlighted text genre is still the same, namely descriptive text. This descriptive text emphasizes the use of appropriate adjectives. For example, when describing someone we know, we can use adjectives that characterize that person: "Prof. Lawson is a **strict** person. If we want to know what kind of person he is, he is a **slender** middle-aged man with mostly white hair."

Meanwhile, chapter three discusses the "Time and Day" topic. This topic is wrapped in the performance of narrative text, which focuses on using adverbs of time. The text that appears can be a story of experience or a simple past event, for example, "**This morning**, around **7.30 A.M.**, my teacher called me. She asked about my project."

Then, the fourth topic discusses the Daily Routines. On this topic, text with the genre Report Text is applied to discuss the Simple Present Tense. The text presented is a kind of daily activity report that takes the example of the log book of Student Community Service activities. This example is taken to familiarize students with texts close to them.

The next topic is Short Functional Text (SFT). SFT refers to brief written materials that serve specific functions or purposes in everyday communication. They are typically concise, straightforward, and provide essential information. SFT can take various forms, such as announcements, instructions, invitations, reminders, etc. These texts are designed to convey their intended messages practically and efficiently. When the structure and features of a Report Text are applied to a Short Functional Text, the SFT is written in a format that presents factual information, typically in a clear and organized manner. A Report Text aims to provide objective details about a particular subject, event, or situation.

Furthermore, Phoning Skill lessons appeared in the sixth meeting. It is aimed to teach effective communication techniques and strategies when making phone calls. These lessons typically cover various aspects, such as greetings, introductions, making inquiries, providing information, handling difficult situations, and ending a phone call politely. The goal is to equip learners with the necessary skills to engage in clear and successful telephone conversations. When the structure and features of an Explanation Text are applied to a Phoning Skill lesson material, the material is presented in a format that provides a detailed explanation of the topic, including the reasons, processes, and underlying principles involved in effective phone communication.

The following lesson material is on Congratulating, Thanking, and Apologizing. This topic provides guidance and examples of expressing congratulations, gratitude, and apologies in various situations. It teaches learners appropriate phrases, strategies, and etiquette when communicating these sentiments. When the structure and features of a News Item Text are applied to this lesson material, the material is presented in a format that resembles a news article. A News Item Text follows the inverted pyramid structure, where the most crucial information is presented first, followed by supporting details. It provides concise and factual information about an event or situation. By

applying the structure and features of a News Item Text, the Congratulating, Thanking, and Apologizing lesson material presents the information clearly and concisely effectively, allowing learners to grasp the concepts and practices associated with these interpersonal skills.

Then, the Travelling lesson material, as the eighth meeting, focuses on Recount Text and discussing Past Tense to provide learners with guidance and examples on how to write about their travel experiences in the past tense. It helps learners develop their recounting skills and enables them to describe and share their past travel adventures effectively. Recount Text is a narrative form of writing that retells events or experiences chronologically. It typically includes an orientation (introduction), a series of events, and a reorientation (conclusion). Recount Text allows learners to structure their travel accounts coherently and engagingly when applied to the Traveling lesson material. By focusing on the use of Past Tense throughout the recount, learners practice conveying their travel experiences as past events. This helps them develop their writing skills, reinforce their understanding of verb tenses, and effectively share their past adventures with others.

Meanwhile, the Abilities lesson material (ninth meeting) focusing on Modals aims to provide learners with an understanding of how to express abilities and possibilities using modal verbs. Modal verbs, such as can, could, may, might, and should, convey various degrees of ability, permission, or likelihood. When the structure and features of an Explanation Text are applied to this lesson material, the material is presented in a format that provides a detailed explanation of the topic, including the rules, usage, and examples of modal verbs to express abilities. Example of Explanation Text on certain things, there is a sentence such as, "Ferrari **can run** up to ... M/H". By applying the structure and features of an Explanation Text, the Abilities lesson material provides learners with a comprehensive understanding of how to use modal verbs to express abilities. It allows learners to grasp the rules and usage of these modal verbs, enabling them to express their abilities and possibilities accurately in English.

Furthermore, the lesson material on Requesting and Offering focusing on News Item Text aims to provide learners with guidance and examples on making requests and offers in various situations. It teaches learners appropriate phrases, strategies, and etiquette when communicating these requests and offers. When the structure and features of a News Item Text are applied to this lesson material, the material is presented in a format that resembles a news article. A News Item Text typically follows the inverted pyramid structure, where the essential information is presented first, followed by supporting details. It provides concise and factual information about an event or situation. By applying the structure and features of a News Item Text, the Requesting and Offering lesson material effectively presents the information clearly and concisely, allowing learners to grasp the concepts and practices associated with making requests and offers. It highlights the importance of community support and inspires learners to actively participate in similar initiatives within their communities.

In the eleventh meeting, the topic explores the process of making plans. The structure and features of a Procedure Text are used to guide through the steps involved. Additionally, the topic focuses on using Future Tense to discuss upcoming activities and arrangements for the trip. Students can effectively plan an exciting weekend getaway by following this procedure and using Future Tense to discuss upcoming activities (Itinerary Text). By combining the structure of a Procedure Text with Future Tense, learners can practice discussing and planning upcoming activities, enhancing their skills in making arrangements and expressing plans.

The "Giving Direction and Process" topic in the twelfth meeting can be applied effectively using Procedure Text and Imperative Sentences. This approach allows learners to understand and practice giving clear directions and explaining processes using concise and direct language. Procedure Text is a text type that provides step-by-step instructions or directions on performing a particular task or process. It typically follows a specific structure, including an introduction, a series of steps, and a conclusion. By applying the structure of a Procedure Text, learners can effectively convey directions and processes in an organized and easy-to-follow manner. Imperative Sentences play a crucial role in Procedure Texts as they are used to give commands or instructions. They are essential for providing clear and direct guidance to the reader. By utilizing Imperative Sentences, learners can practice using concise and authoritative language when giving directions or explaining a process.

The "Preference" topic in the thirteenth meeting can be effectively applied through the use of Discussion Text. Discussion Text is a text type that presents different perspectives or arguments on a specific topic. It allows learners to express and discuss their preferences while providing reasons and supporting evidence to justify their opinions. When applying the "Preference" topic with Discussion Text, learners can engage in thoughtful discussions, express their preferences, and provide reasons for their choices. They can present their viewpoints, analyze, debate, or talk with their peers. The example text Title can be; "**Preferred Mode of Transportation: Cars vs. Public Transportation.**" By applying the Discussion Text structure and engaging in discussions on preferences, learners can develop their critical thinking skills, express their opinions, and consider different perspectives. It allows them to practice expressing preferences, providing logical arguments, and engaging in meaningful conversations about various topics related to preferences in English.

Like the previous topic, the "Giving Opinion" can also be effectively applied through the Discussion Text. Discussion Text is a text type that presents different viewpoints or arguments on a specific topic. It allows learners to express their opinions, support their arguments with evidence, and engage in thoughtful discussions with others. When applying the "Giving Opinion" topic with Discussion Text, learners can practice expressing their thoughts and viewpoints on various subjects. They can present their opinions, provide reasoning, and engage in debates or conversations with their peers to develop their language skills and critical thinking abilities.

Next is the "Agreement and Disagreement" topic. This topic can be effectively applied through the use of Analytical Exposition Text.

Analytical Exposition Text is a text type that presents arguments or opinions about a particular issue and aims to persuade the reader to agree or disagree with the writer's viewpoint. It allows learners to express their agreement or disagreement with a specific argument and support their stance with logical reasoning and evidence. When applying the "Agreement and Disagreement" topic with the Analytical Exposition Text, learners can practice expressing their opinions, analyzing different perspectives, and providing logical arguments to support their agreement or disagreement.

The last topic is "Making Suggestions." This topic can be effectively applied through the use of Hortatory Exposition Text. Hortatory Exposition Text is a text type that aims to persuade the reader to take a specific course of action or adopt a particular viewpoint. It allows learners to make suggestions, offer recommendations, and support their suggestions with persuasive arguments and evidence. When applying the "Making Suggestion" topic with Hortatory Exposition Text, learners can practice expressing their suggestions, providing reasons and evidence to support their suggestions, and persuading others to consider their viewpoint.

Furthermore, the researcher provided an assessment sheet to the expert to evaluate the worksheet. Five aspects were assessed: objectives, methods, material aspects, character building, material instructions, and student aspects. Then, the validators assessed these aspects with an evaluation rubric, as shown below:

Table 3. The result of expert judges on the worksheet

	Expert I		Expert II	
<i>The objectives of materials</i>	4,2	Highest	4,5	Highest
<i>Materials</i>	4	High	4	High
<i>Methods</i>	4	High	4	High
<i>Learner</i>	4,15	Highest	4,2	Highest
<i>Character Building</i>	4	High	4,5	Highest
<i>Instructions</i>	4	High	4	High
Total Score	4,05	Highest	4,2	Highest

The table above shows the result of the validators' assessment of the worksheet quality developed by the researcher. The average scores of the two expert judges were 4.05 and 4.2, meaning the assessment was the highest. The maximum score that could be given for each of the six learning aspects was 5.

Table 4. The interval score of the category of worksheet quality

Criteria	Interval Score	Category
$\bar{X} \geq Mi + 1,5Sdi$	$\bar{X} \geq 4.05$	Excellent
$\bar{X} \geq Mi + 0,5Sdi \leq \bar{X} < Mi + 1,5 Sdi$	$3.35 \leq \bar{X} < 4.05$	Good
$\bar{X} \geq Mi - 0,5Sdi \leq \bar{X} < Mi + 0,5 Sdi$	$2.65 \leq \bar{X} < 3.35$	Average
$\bar{X} \geq Mi - 0,5Sdi \leq \bar{X} < Mi - 0,5 Sdi$	$1.95 \leq \bar{X} < 2.65$	Below Average
$\bar{X} < Mi - 1,5 Sdi$	$\bar{X} < 1.95$	Poor

Based on the data above, the average value of the developed worksheet was 4.05 and 4.2, in which the two validators gave a high score for each of the six learning aspects. If converted into product quality criteria and categories, then the main score was in the first criterion where the score. ≥ 4.05 . Because the main score from the validators' assessment was 4.05 and 4.2, the worksheet was categorized as excellent material. In other words, the worksheets created by the researchers were high quality and were suitable for use by vocational students in English courses. The final stage is "dissemination." The developed worksheets were also provided in PDF format. Thus, worksheets can be opened on students' laptops and smartphones. Students can also access the PDF worksheets outside of school hours. This strategy allowed students to focus on the learning process wherever they were, not just on school days.

This worksheet was developed using reflective thinking and 4-D models. Reflective thinking is applied by students in solving problems in worksheets, while the 4-D models play a role in developing worksheets. This reflective approach is used to involve something, or look back at an event, past idea, experience by identifying it critically and in detail. This approach makes it easier for students to learn from experiences they have gone through or experienced in the past. Then, students can also change surface learning into deep learning through aspects of success and failure from which moral values can be derived from these experiences. The quality of improving writing skills by utilizing reflective thinking strategies to train students' reflective thinking skills in writing texts guided the development of this worksheet. The teaching material developed is in the form of genre-based, long functional text teaching materials. With this approach, students will use reflective thinking to understand information and choose problem-solving strategies when working on questions on worksheets. Each learning activity in this worksheet consists of an evaluation or final assignment that takes students through the stages of reflective thinking, which include formulation, regularity evaluation, and testing solutions based on experience (Agustan & Siswono, 2017). Below is the process of developing a worksheet with a 4-D Model.

1) *Define stage*

a) *Vocational Curriculum*

Researchers analyzed the independent learning curriculum implemented on campus at this time. The independent learning curriculum is defined as part of learning with a new paradigm that aims to enrich the quality of learning to create a more character education. The focus of the researcher was the learning device used during the lesson. Then, worksheets were developed using a reflective thinking approach so

students could understand the material presented without problems.

b) Compile Vocational Student Worksheets as Needed

In this activity, the number of learning activities with this worksheet was determined according to the indicators that students must achieve in writing skills. The following was the outcome of a need analysis for vocational students, in which there were three sections of the students' worksheet as follows:

Table 5. Compile Student Worksheets as Needed with Reflective Thinking

<i>Basic competence</i>	<i>Indicators of achievement</i>	<i>Sequence</i>
Explain define images as text.	Define images by genre and show the generic structure of the Text	SW1
	Explain their experience using technology in the picture or what they know about the picture by genre.	SW2
Solve problems related to the text genre.	Analyzing problems related to text genre and solving problems related to that	SW3

The table above shows that three student worksheets were developed according to achievement indicators of students' competence.

c) Preparing Materials

The preparation of the material referred to the type of genre and generic structure, which would later complement the various learning resources in the Basic English course because learning this course also applies other learning resources such as textbooks. The title components, core and essential competencies, objectives and indicators, material descriptions, and the final project organize this worksheet.

2) Design stage

The researchers created a prototype using a reflective thinking conceptual model with an introduction, core, and closing portions. By tackling small-scale problems, learning activities were also developed to replicate the utilization of reflective thinking processes.

- The introductory section consisted of the identity of the worksheet, a brief description of the material, and instructions for its use. The preliminary display on the student worksheet is shown in Figure 2 below.

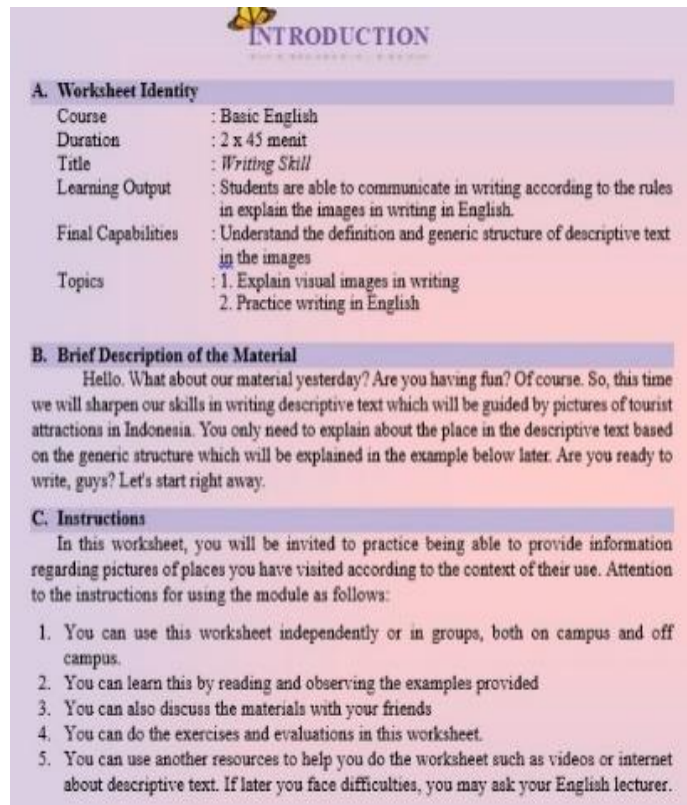


Figure 2. Introductory Section

- The core part described the material that guided students in solving the problems. The material was described using a reflective thinking approach that begins by giving questions in images. Students were asked to explain the images according to the text genre, as shown in the following table and figure.

Table 6. Learning activities based on reflective thinking approach

<i>Learning activities</i>	<i>Activities to train students' writing skills</i>
Understanding problem	Students work on the assignments and connect information that is conveyed explicitly. For example, students write information about pictures and solve questions about problems.
Applying the right strategy	Students evaluate their work by considering their experiences with related information. For example, students recheck their work to see whether it is correct and try correcting deficiencies.
Rechecking students' answers	Students test the answer so that it is believed to be accurate. For example, after solving the problem, students review the answers obtained again to make conclusions and believe in these answers.

The appearance of the worksheet on the core section is shown in Figure 3 below.



Figure 3. Core section



Figure 4. Reflective thinking approach activities

Next, students were asked to compare two technological objects and write their reasons using the reflective thinking approach in Figure 5 below.

- This worksheet was concluded with a final test to measure students' level of comprehension. As indicated in Figure 4, the final assignment met all indications and learning objectives for the previously created basic abilities.

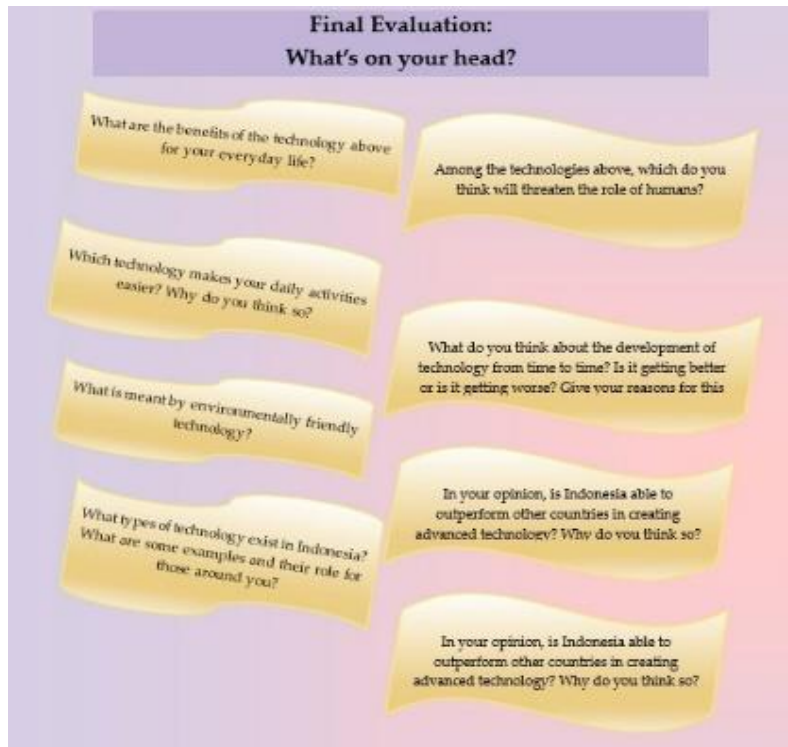


Figure 5. The final test to determine the level of understanding

3) Development stage

At this stage, the researcher produced the feasible worksheet after going through the validation by testing the feasibility of the material, the use of language, and the display to the validator. In the validation process, two experts were brought in to assess and test the feasibility of the worksheet by filling out a questionnaire provided by the researcher. After reviewing the worksheets, the validators marked a checklist. They provided criticism and ideas in the columns that had been updated the Ministry of Education and Culture's requirements for evaluating teaching materials (Kemendikbud, 2016). Revisions from the validator later produce a draft worksheet. Then, the draft worksheet will be tested for readability by students, which will then be revised and analyzed to produce a master worksheet for English vocational students. The results can be seen as follows.

Table 7. Material feasibility assessment by the validator

Eligibility material	Item	Expert I	Expert II
Scope of material	Depth of material	3	4
	Breadth of material	3	3
Material accuracy	Concept accuracy	4	4
	The relationship between the concept and the presentation of the material	3	3
	Material displayed contextually	3	3
Compatibility of basic competencies	The material is presented following the learning objective	4	3
	The basic competencies systematically present the sequence of material	3	3
	The material is displayed following the essential competencies	4	4
References	Relevant and updated references	3	4
Challenges for students	The material is exciting and provides a challenge for students	3	4
Average		3.3	3.5
		3.4	

Table 8. Language feasibility assessment

<i>Language Eligibility</i>	<i>Item</i>	<i>Expert I</i>	<i>Expert II</i>
The use of terms	Familiar	4	4
	According to the student's cognitive level	3	4
	Consistency	3	3
	Conformity with symbols	3	3
	Absorption of foreign terms	4	4
	Compatibility with the concept	3	4
Sentence order	Structural precision	3	4
	Communicative	4	4
	Spelling accuracy	4	3
	Understand easily and simple	3	3
	No double meaning	3	4
	Interactive	4	4
	Accuracy of sentences with illustrations	3	4
Use of rules	Letters' accuracy	3	3
	Standard	4	4
	Writing accuracy	4	4
Average		3.4	3.7
		3.5	

Table 9. Display feasibility assessment

<i>Feasibility of display</i>	<i>Item</i>	<i>Expert I</i>	<i>Expert II</i>
Worksheet Display	Title	4	4
	Clue	3	4
	Learning Competencies	3	3
	Availability of writing space	4	3
	Timing	4	4
	Appropriate font type, size, image, and color	4	4
	Problem-solving	3	3
	Reflective Thinking Skill	3	4
	Directed learning flow	3	3
	Student-centered based	3	3
	Suitability with students' characteristic	3	4
Completeness of the presentation	Introduction	4	3
	Student Activity	4	4
	Bibliography	4	4
Average		3.5	3.6
		3.5	

The feasibility of the English worksheets for vocational students in tables 6, 7, and 8 met the criteria based on Table 1 (the level of validation assessment). Thus, the development results are declared feasible for use. In general, through the validation process, the validators stated that this worksheet significantly improved students' writing skills through a reflective thinking approach. As a learning product, after the worksheet is declared valid and suitable for use, the next step is that the worksheet is suitable to be given and delivered to vocational students. Through two trials at several vocational campuses, such as AKN Blitar, POLMED, USU, and UNIB, this worksheet is suitable for use in learning Basic English. The trial was initially carried out in small groups, consisting of 1 class containing around 25 to 30 students. Then, the worksheets began to be used in several classes which later took them to several campuses above.

4) *Disseminate stage*

After going through the validation stage, the worksheet with a reflective thinking approach enters the dissemination stage. This stage is the final stage of the 4-D model. The dissemination stage is deploying modules developed for vocational higher education where English is a compulsory General Basic Course. This stage aims to disseminate worksheets developed to other vocational tertiary institutions. This deployment will also be made easy by making it in PDF format. By downloading it on their phone or laptop, students can quickly get this worksheet, which can be used practically anywhere and anytime in doing the tasks. Student worksheets with a reflective thinking approach developed using a 4-D model can also be used in vocational education in Basic English or English subjects, especially in improving writing skills such as constructing a text.

4. Conclusion

The worksheet with a reflective thinking approach was developed using a 4-D model to improve vocational students' writing skills in the Basic English course. The reflective thinking approach paid attention to material that students were familiar with, which was selected based on the experiences presented in the worksheets. During its development, the worksheet fulfilled the legitimate elements of material, language, and appearance, where contextual material and questions were consistent with students' everyday experiences. The worksheet design included the following sections: (1) an introduction with a title; a list of competency objectives (core competencies, essential

competencies, indicators, and learning objectives); (2) the core section with material with reflective thinking-based learning steps by giving problems; and (3) the closing section with the final evaluation or assignment to determine the level of students' understanding of genre-based functional text material. The questions on the worksheet were presented so that students could understand the concept of the problem and plan strategies to solve problems or questions presented based on student experience. In addition, students' work is rechecked to ensure the results are correct. Thus, students' writing skill was continuously improved by using a reflective thinking approach.

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Authors contributions

Muhammad Yusuf, Rika Wahyuni Tambunan, and Aprilza Aswani were responsible for collecting the data and revising the manuscript. Fikry P Syahputra and Azhar Aziz Lubis were responsible for drafting the manuscript. All the authors approved the final manuscript.

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