



## Integración de las habilidades motrices en el aprendizaje basado en la naturaleza para identificar las necesidades de los estudiantes en la escritura de cuentos cortos

Integrating motor skills in nature-based learning to identify students' needs in short story writing

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### Abstract

**Introduction:** Integrating motor skills in nature-based learning could potentially address students' needs in short story writing by providing engaging, culturally relevant experiences. Short story writing is critical to strengthening students' writing and reading literacy.

**Objective:** The study aims to describe students' needs related to short story writing material based on nature-based learning. **Methodology:** The study method is quantitative, with data collection techniques in the form of a questionnaire. The research sample consisted of 57 students who were selected using a purposive sampling technique. The data were analyzed using SPSS 25 software. **Results:** The results showed that item 5, item 11, and item 13 were the most dominant criteria in statistical symptoms, with a percentage of >50% strongly agree. Other items with agree criteria are item 14 with a percentage of 74% (N=42) of the total sample (N=57) and item 23 with > 80%. The most extensive data on the disagree criteria are item 1 and item 9, with 51% and 54% percentages, respectively. At the same time, item 9 also appears as the dominant data on the strongly disagree criteria. **Discussion:** Regarding gender-based analysis, item 23 shows that women have the highest percentage of > 60%. In comparison, men get a percentage of < 20% with the criteria of agree regarding the importance of environmental aspects in writing short stories. **Conclusions:** Nature-based learning models have been shown to effectively improve motor skills by engaging their senses and providing concrete when developing learning offerings on short story writing materials.

### Keywords

motor skills; nature-based learning; short story; students' needs

### Resumen

**Introducción:** La integración de las habilidades motrices en el aprendizaje basado en la naturaleza podría abordar potencialmente las necesidades de los estudiantes en la escritura de cuentos cortos, proporcionando experiencias atractivas y culturalmente relevantes. La escritura de relatos breves es fundamental para reforzar la capacidad de escritura y lectura de los alumnos. **Objetivo:** El estudio pretende describir las necesidades de los estudiantes relacionadas con el material de escritura de cuentos cortos basado en el aprendizaje basado en la naturaleza. **Metodología:** El método de estudio es cuantitativo, con técnicas de recogida de datos en forma de cuestionario. La muestra de la investigación consistió en 57 estudiantes seleccionados mediante una técnica de muestreo intencional. Los datos se analizaron con el programa SPSS 25. **Resultados:** Los resultados mostraron que el ítem 5, el ítem 11 y el ítem 13 fueron los criterios más dominantes en los síntomas estadísticos, con un porcentaje > 50% totalmente de acuerdo. Otros ítems con criterios de acuerdo (s) son el ítem 14 con un porcentaje del 74% (N=42) del total de la muestra (N=57) y el ítem 23 con >80%. Los datos más amplios sobre el criterio en desacuerdo son el ítem 1 y el ítem 9, con porcentajes del 51% y 54%, respectivamente. Al mismo tiempo, el ítem 9 también aparece como el dato dominante en el criterio. **Discusión:** En cuanto al análisis en función del género, el ítem 23 muestra que las mujeres tienen el porcentaje más alto, >60%. En comparación, los hombres obtienen un porcentaje < 20% con el criterio de respecto a la importancia de los aspectos medioambientales en la escritura de cuentos. **Conclusiones:** Se ha demostrado que los modelos de aprendizaje basados en la naturaleza mejoran eficazmente las habilidades motrices al involucrar sus sentidos y proporcionar concreción a la hora de desarrollar ofertas de aprendizaje sobre materiales para la escritura de cuentos cortos.

### Palabras clave

habilidades motrices; aprendizaje basado en la naturaleza; cuento; necesidades de los alumnos

## Introduction

Writing short stories is an essential basic skill in developing students' literacy at the higher education level. Writing activities allow students to explore their creativity, organize ideas, and hone their critical thinking skills (Faragher & Huijser, 2014; Tonglo et al., 2020). In many universities, including in Indonesia, short story writing courses are often included in the curriculum to strengthen students' competence in language and literature. However, the results of learning to write short stories often vary due to several factors, such as differences in writing experience, background knowledge, and teaching materials that are not always to the needs of students (Negonga, 2019; Tsiriotakis et al., 2020).

Exploring students' needs in writing short stories is an endeavour that involves pedagogical strategies, technology, and psychological insights. Understanding these needs is essential for designing effective learning methods to improve students' creative writing skills (Moran, 2009; Tonglo et al., 2020). In higher education, identifying students' needs in writing short stories is a crucial step to improving learning effectiveness (Negonga, 2019; Tsiriotakis et al., 2020). Each student has varying skills and expectations that affect their learning process. A one-size-fits-all approach to teaching writing is often unsuccessful, so developing teaching materials that suit students' specific needs is essential. In addition, teaching short story writing that does not consider students' needs can lead to a lack of motivation and suboptimal learning outcomes.

Along with the development of technology, using statistical data in education allows educators to understand the pattern of students' needs better and more objectively. Through data analysis, we can see trends, learning patterns, and obstacles faced by students in the short story writing process. The results of this analysis are essential for designing a more targeted curriculum and learning methods per the identified needs (Poor & Tajadini, 2017; Suwartini et al., 2022). Therefore, the statistical approach in identifying students' needs not only guides the development of learning materials but also increases students' involvement in the learning process (Mazhar Hameed, 2021; Zainal, 2017).

One important aspect of short story writing is the role of collaborative learning environments (Sahida, 2023; Seo & Kim, 2020). Research shows that collaborative writing can encourage positive attitudes and behaviours among students, increasing their engagement and participation in the writing process (Irgin & Bilki, 2024; Taye & Mengesha, 2024). For example, collaborative writing encourages active participation and productive contributions, which are essential for developing writing skills in a supportive atmosphere. This is in line with the findings that contextual conditions in collaborative writing, showing that students have a strong orientation towards effective writing practices when given the proper support (Mortensen, 2018). Therefore, facilitating student collaboration can be essential in meeting their writing needs.

In addition, teachers' pedagogical approach plays a vital role in shaping students' writing experiences (Goshu & Gebremariam, 2024; Tao & Yu, 2024). Creative and adaptive teaching methods can significantly improve students' ability to write short stories (Kinberg, 2020; Soviana Devi & Irma Sarjani, 2019). Teachers can deepen students' understanding of narrative structure and character development by providing appropriate feedback and creating a supportive environment for experimentation. This is reinforced by Andayani (2023), who emphasized the importance of using engaging materials, such as video adaptations of literary works, to motivate students and facilitate their creative expression. Therefore, selecting teaching strategies is crucial in meeting students' specific needs in short story writing.

Nature-based learning has been shown to enhance academic performance, personal development, and environmental stewardship (Kuo et al., 2019). It improves attention, reduces stress, and increases interest in learning (Kuo et al., 2019). Writing workshops in natural settings can increase student engagement and develop writing skills (Jordan & Chawla, 2019; Kinberg, 2020). Place-based education, which includes nature-based learning, has been associated with improved test scores, attendance, and language arts assessments (Sobel, 2004). Research suggests that nature-based learning can benefit children across various demographics, including those from disadvantaged backgrounds (Jordan & Chawla, 2019). However, more research is needed to understand the causal mechanisms behind these benefits and how to optimally implement nature-based learning in educational settings (Jordan & Chawla, 2019). Overall, the evidence supports the integration of nature-based experiences into educational curricula to promote learning and development across multiple domains.



In addition, the impact of local wisdom and cultural narratives on students' writing must be addressed. Integrating local wisdom in writing lessons can significantly improve students' creative writing skills by providing a more relevant context for their narratives (Setiawan et al., 2017; Sujinah et al., 2019). This approach encourages creativity and invites students to explore their cultural identity through storytelling. Using a critical literacy approach can empower students to engage critically with narratives, improve their analytical skills, and deepen their understanding of the socio-cultural dimensions of storytelling (Jalambo et al., 2023; Lee, 2016). Therefore, incorporating cultural elements into the writing curriculum can enrich students' learning experiences and meet their diverse needs.

This study uses a statistical approach to identify students' specific needs in learning short story writing. It will analyze quantitative data collected through questionnaires distributed to students to understand their challenges, preferences, and basic skills related to short story writing. Thus, the results of this study are expected to provide more appropriate recommendations for teachers in developing appropriate learning materials and strategies.

This study's results are expected to significantly contribute to improving the quality of short story writing teaching in higher education. By understanding students' needs more comprehensively, lecturers and curriculum developers can create a more inclusive and effective learning environment, improving students' learning outcomes in writing short stories. In addition, this study can also serve as a foundation for further research that focuses on developing writing teaching methods that are more innovative and adaptive to students' needs.

## Method

### *Participants*

The research sample consisted of 57 students who were selected using a purposive sampling technique based on specific criteria, such as experience and knowledge of language as a basis for writing. In addition, students will also take creative writing courses so that they are by the research flow, which will be continued by making learning media according to the findings and applying them to determine its effectiveness.

### *Procedure*

The study method is quantitative, with data collection techniques in the form of a questionnaire. The research procedure includes distributing questionnaires, data recapitulation, data analysis, interpretation, explanation, revision, finalization, and reporting research results. After the questionnaires were distributed to respondents, the collected data were recapitulated to ensure completeness and consistency. Next, the data were analyzed using appropriate statistical methods, and the results were interpreted to understand emerging trends or patterns. The data explanation stage aims to present the results in more detail. The finalization process is carried out after revisions to correct errors or shortcomings before the final report is compiled and presented.

### *Data analysis*

The data were analyzed using SPSS 25 software, paying attention to several important points, such as the adequacy of the sample size, frequency distribution, and the percentage of the results produced as SPSS output. The questionnaire consists of 20 Likert scale items: 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree). The interpretation results are presented in graphs and statistical tables that facilitate explanations related to student needs in learning to write short stories (Retnawati, 2014; Sarstedt et al., 2021). The statistical patterns obtained are used to identify student needs more clearly.

## Results and Discussion

The graph below shows the needs analysis results by distributing a 25-item questionnaire. The needs analysis implementation is to determine students' tendencies related to the material "writing short stories," including problems and understanding related to these issues. In the context of the analysis, there are four graphs, each of which illustrates the criteria of the distributed instruments, namely 1 =



strongly disagree (st, 2 = disagree (ts), 3=agree (s), and 4=strongly agree (ss). The data interpretation process uses dominant graphical data by looking at the percentage of  $\geq 50\%$  or selecting the 2-3 most prominent items in the recapitulation. The table presented is scientific evidence in the graphical interpretation process to obtain valid and concrete conclusions. Reading this data becomes the basis of knowledge and recommendations for teachers in developing learning strategies related to short story writing and other relevant materials.

Figure 1. Recapitulation of Analysis Results of Criteria Strongly Agree (SS)

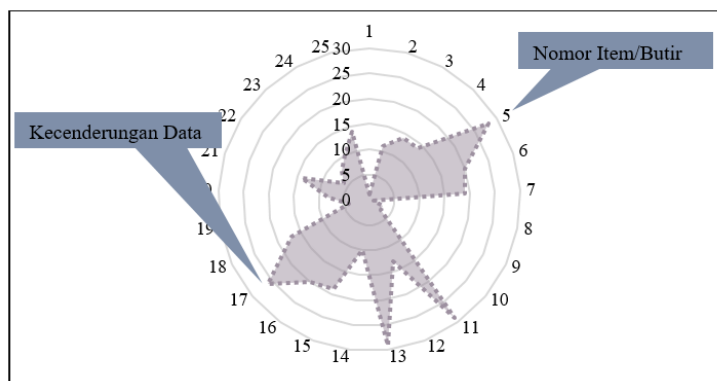


Figure 1. describes the “strongly agree” (ss) criteria data with a sample of Indonesian Language Education students. The research findings discuss three items: item 5, item 11, and item 13. The prominent data tends to “point” the data outward, and the closer the item number is, the more students respond to the item (see figure). Regarding item 5, the data shows that item 5 is the most selected, and the criteria strongly agree (49%). The item statement is “my knowledge about the theory of writing short stories needs strengthening,” meaning that students' literacy related to time still needs intervention or could be one of the obstacles for students in writing short stories. The following largest items are item 11 and item 13, with the same percentage of  $> 50\%$ . The statement of item 11 is, “I expect the learning media for writing short stories to have many short story examples.” In contrast, item 13 is “material that contains techniques, tips, and tricks in writing is critical to me.” The data shows that the aspects of understanding, the role of learning media, and the techniques of writing short stories are the main focus in learning development, even though some students may have had writing experience at school.

Table 1. Statistical Output of Item 5: My knowledge of short story writing theory needs reinforcement

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.8	1.8	1.8
	Agree	28	49.1	49.1	50.9
	Strongly agree	28	49.1	49.1	100.0
	Total	57	100.0	100.0	

From Figure 3. the table item supports the interpretation that the comprehension aspect needs to be the teacher's attention. Table item 5 shows that the criteria for agreeing (s) obtained a percentage of almost 50%, and the same phenomenon occurred in the criteria for strongly agreeing (ss). With the same frequency of 28 (f), it can be concluded that students need reinforcement in writing short stories. Reinforcement can impact student understanding so that scientific cognitive patterns are formed.

Table 2. Statistical Output of Item 11: I expect the learning media for writing short stories to have many short story examples

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.8	1.8	1.8
	Agree	27	47.4	47.4	49.1
	Strongly agree	29	50.9	50.9	100.0
	Total	57	100.0	100.0	

In addition to item 11, other data that support Figure 3 are item 11 and item 13. Around 50% of the criterion of strongly agree (ss) is the most significant data in item11, and the percentage of item11 ss is the same as the criterion of ss in item13 (f=29). This data shows that students tend to agree/strongly

agree that the role of learning media and writing techniques needs to be considered by teachers as the main element in improving short story writing skills. This means that strengthening the understanding, media, and technicalities of writing short stories are essential components that must be present in the learning design to make students competent and proficient in writing.

Table 3. Statistical Output Item 13: Materials that contain techniques, tips, and tricks in writing are very important to me

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	5.3	5.3	5.3
	Agree	25	43.9	43.9	49.1
	Strongly agree	29	50.9	50.9	100.0
	Total	57	100.0	100.0	

Based on Table, item 14 and item 23 are supporting data from the graphical interpretation results (figure 2). Item 14 has a percentage of > 70%, while 80.7% is owned by item 23, with a frequency of 42 and 46, respectively. The data shows that almost all samples (N=57) chose “agree” on the statements presented in the questionnaire. The trend of the data from the table is relevant to the data pattern on the graph, namely the dominant data of item 14 and item 23. The conclusion is that the learning media “module” and the short story theme “environment” are essential components that must be present in learning to write short stories. The integration of these components can be a supporting force in increasing students' reasoning power and thinking ability in writing.

Table 4. Statistical Output of Item 14: The teaching module will help me in learning to write short stories

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	8.8	8.8	8.8
	Agree	42	73.7	73.7	82.5
	Strongly agree	10	17.5	17.5	100.0
	Total	57	100.0	100.0	

Table 5. Statistical Output of Item 23: I consider that an understanding of the environment can support the learning of short story writing

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	5.3	5.3	5.3
	Agree	46	80.7	80.7	86.0
	Strongly agree	8	14.0	14.0	100.0
	Total	57	100.0	100.0	

Figure 2. is the data symptom for Indonesian Language Education students' agree criteria (s). The data shows that items 14 and 23 are the items that most students respond to, especially in the Likert 3/agree context. The statement of item 14 is “the teaching module will help me in learning to write short stories,” with a percentage of 74% (N=42) of the total sample (N=57). Statement item 23 is “I consider that an understanding of the environment can support learning to write short stories,” with 46 students answering or > 80%. The data trend shows that students tend to agree with writing short stories using media/technology and the need for environmental integration as a basis for writing themes in the context of short stories.

Figure 2. Recapitulation of Analysis Results of Agree Criteria (S)

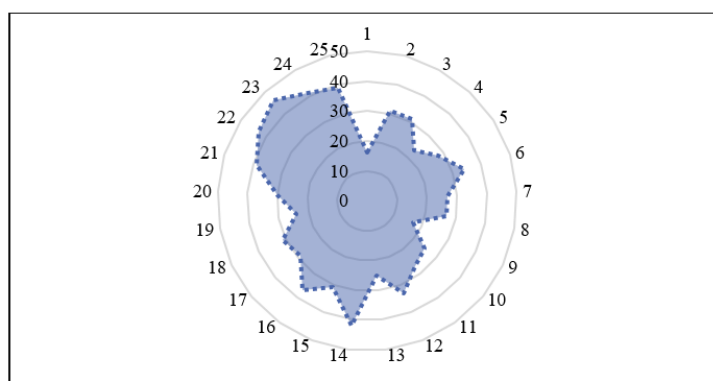


Figure 3 is a symptom of data for the criteria of “disagree” (ts) on Indonesian Language Education students. The items most responded to with “ts” criteria are item 1 and item 9, with a percentage of 51% and 54%, respectively. The statement “I often write short stories” is item 1, while item 9 is “I can develop short story plots logically, interestingly, and contain adequate elements of suspense.” Item 1 and item 9 show that students cannot write short stories intensely, including plot development.

Figure 3. Recapitulation of Analysis Results of Disagree Criteria (TS)

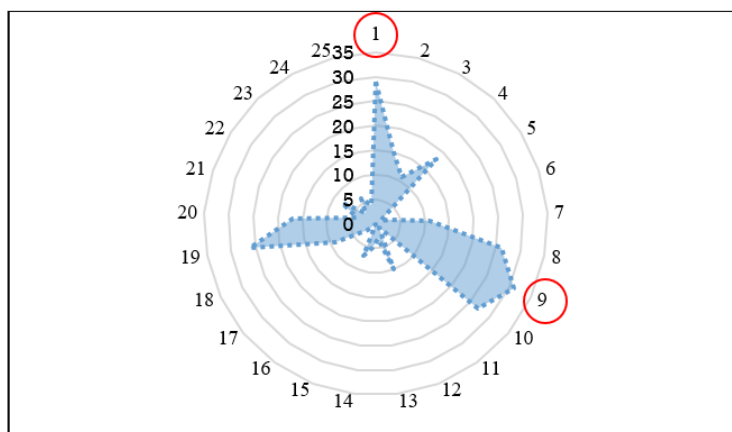


Table item 6. is statistical data with the results of analyzing all criteria. Item 9 relates to the data symptoms shown in Figure 3 regarding the “disagree” criteria data. In the Table, disagree has the highest frequency of 31 and with a percentage of 54.4%. Although the other criteria have their respective frequency values, the tendency of the data on disagree shows that some students have not been able to develop short story plots logically and interestingly and contain adequate elements of suspense according to the item statement.

Table 6. Statistical Output of Item 9: I am able to develop a short story plot that is logical, interesting, and contains sufficient suspense elements

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly do not agree	6	10.5	10.5	10.5
	Do not agree	31	54.4	54.4	64.9
	Agree	17	29.8	29.8	94.7
	Strongly agree	3	5.3	5.3	100.0
	Total	57	100.0	100.0	

In the same context, Figure 3 shows that item 1 is included in the salient data. Regarding the item table, the ts (disagree) criterion has the most significant percentage of 50.9%, with a frequency of 29 or more of the total sample. With the statement “I often write short stories,” the data shows that students do not have a high intensity in writing short stories. Although some students agree (28.1%) and strongly agree (1.8%), the data shows that students need more intervention in learning so that they can be intense in the context of writing short stories.

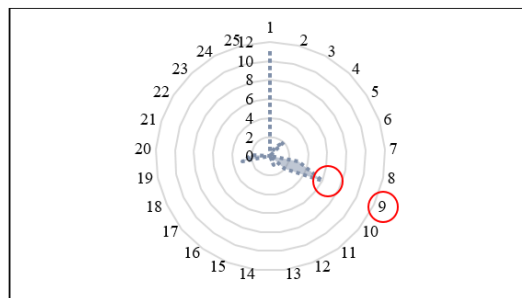
Table 7. Output Statistics Item 1: I often write short stories

	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly do not agree	11	19.3	19.3	19.3
	Do not agree	29	50.9	50.9	70.2
	Agree	16	28.1	28.1	98.2
	Strongly agree	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

The data situation is relevant to Figure 4 with the criterion “strongly disagree” (sts). Figure 4 only has one item with the most prominent tendency, item 9. Related to the criteria of sts, there are > 10% of students strongly disagree with the statement of the item, meaning that some students do not

understand how to write short stories, including specific indicators such as short story plots with logical, engaging, and contain adequate elements of suspense. The findings in item 1 and item 9 can be the basis for designing and developing lessons that support improving students' short story writing skills.

Figure 4. Recapitulation of Analysis Results of Strongly Disagree Criteria

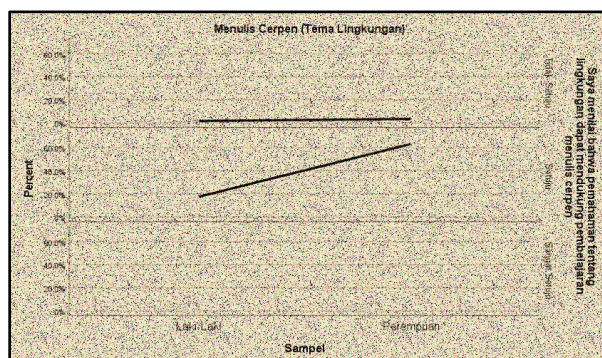


The data of “strongly agree” and “agree,” when combined, the findings show several points—first, the importance of improving aspects of students' understanding of writing short stories. Second, integrating learning media, including short story writing techniques, is essential to supporting proficient writing skills. Third, students' understanding of how to write short stories is not entirely optimal, including specific indicators such as short story plots that are logical, interesting, and contain adequate elements of suspense. Although the combination of strongly agree/agree shows that some students are proficient in understanding the aspects of writing, others (54% (disagree) and >10% (strongly disagree)) still need improvement because they have only obtained about 50%. The use of media, technology, and technical writing provision are related, meaning that teachers can technically equip students to write short stories by providing references or technology-based media. The quality of short story writing material content can also be a factor in strengthening student understanding so that all students have a scientific understanding of writing. Using various interventions in learning has great potential to help students write short stories.

#### *Description of Needs Analysis Results Based on Gender*

Gender is a part that becomes the focus of the analysis process. Gender is also an essential part of the learning context. Gender is included in diversity. Diversity, including gender, must also concern teachers, including writing short stories. For example, item 23 in the figure below is an example of the analysis results by taking gender data based on the results of the instrument data. Item 23 for the criteria of agree in the female gender has the highest percentage of > 60% while men get a percentage of < 20%. The statement of item 23, “I consider that an understanding of the environment can support the learning of writing short stories,” means in the context of the graph below that women agree more on the importance of environmental aspects in writing short stories than men. Although the sample pattern of men is not more than women's, the graph can be a reference material in developing gender-based learning design, media, and evaluation.

Figure 5. Statistical Description of Gender-based Items 23



Intervention is defined by Mezirow (1991, 1997) as support for a person in order to perform cognitive transformation. In his study, Mezirow (1991) considers that each needs to experience changes in perception of what has been learned to find broader knowledge. Students' behaviour is a reflection of their cognition, so interventive learning design dramatically affects students' thinking processes (Abraham et al., 2014; Chen et al., 2024; Shubina & Kulakli, 2019). Reading and writing literacy are must-have skills for today's generation and have a crucial role (Sahida, 2023; Yilmaz, 2018). Practically, it can be concluded that needs analysis is essential so that teachers can design and develop learning that suits students' needs because it has a significant impact on student's academic performance (Arshad et al., 2015; Chávez et al., 2018; Ghazivakili et al., 2014; Rashtchi, 2019). Needs can refer to a variety of perceptions such as cognitive level, background, culture, gender, and character (Fowler, 1980; Pratiwi & Wuryandani, 2020; Zeyer, 2018).

## Conclusions

Based on the analysis result, quantitative methods can help teachers analyze student needs in short story writing material, especially the patterns of statistical data presented. Needs analysis provides an excellent opportunity for teachers to design and develop learning that is suitable and relevant to students' character, including gender. In the context of the analysis, some components must be considered by teachers related to writing, such as students still needing reinforcement in writing, integration of learning media or modules, writing techniques, and the importance of environmental themes in writing short stories. Nature-based learning models have been shown to effectively improve motor skills by engaging their senses and providing concrete. The analysis results can be a reference for students, teachers, researchers, and lecturers, especially when developing learning offerings on short story writing materials.

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