

The Effect of Problem-Based Learning Model Assisted by Audiovisual Media and Reading Interest on the Anecdotal Text Writing Skills of Grade X of Vocational High School Students

Rika Anggraini¹, Afnita^{*2}

¹ Universitas Negeri Padang, Padang, Indonesia; rikaanggraini25883@gmail.com

² Universitas Negeri Padang, Padang, Indonesia; afnita@fbs.unp.ac.id

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ABSTRACT

This study examined the effect of audiovisual-assisted Problem-Based Learning (PBL) and reading interest on Grade X students' anecdotal text writing skills at SMK Negeri 6 Padang. A quantitative quasi-experimental design was used by combining a pretest-posttest nonequivalent control group design with a 2×2 factorial design. Two intact classes consisting of 71 students were selected purposively, with one class assigned to audiovisual-assisted PBL and the other to conventional instruction. For factorial analysis, 40 students were selected through an extreme-group procedure based on reading-interest scores, consisting of high- and low-reading-interest groups from each class. Data were collected using an anecdotal text writing test and a reading-interest questionnaire. The data were analyzed using two-way ANOVA and planned independent-samples t tests. The results showed that the learning model had a significant effect on students' writing skills, $F(1, 36) = 31.90$, $p < .001$, partial $\eta^2 = .470$. Students taught through audiovisual-assisted PBL achieved higher writing scores than those taught through conventional instruction in both high-reading-interest and low-reading-interest groups. However, reading interest had no significant main effect, $F(1, 36) = 0.01$, $p = .921$, and no significant interaction was found between the learning model and reading interest, $F(1, 36) = 0.05$, $p = .817$. These findings indicate that audiovisual-assisted PBL supports anecdotal text writing across different reading-interest levels.

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Corresponding Author:

Afnita

Universitas Negeri Padang, Indonesia; afnita@fbs.unp.ac.id

1. INTRODUCTION

Writing is an essential competence in Indonesian language learning because it enables students to communicate ideas, knowledge, experiences, and responses to social issues in an organized written form (Khair & Misnawati, 2022; Marlina, 2024; Munir, 2025). Writing does not merely involve transferring ideas into sentences but also requires planning, logical reasoning, text organization, language accuracy, and revision (Altun, 2023; Michel et al., 2025; Song et al., 2025). These abilities are important for vocational high school students because written communication supports both academic learning and future professional activities. Nevertheless, writing remains a challenging skill because students must simultaneously develop content, organize ideas, select appropriate vocabulary,

construct effective sentences, and apply language conventions (Naini & Ulya, 2025; Taye & Mengesha, 2024; Tseng & Lin, 2024).

One type of text taught in Grade X Indonesian language classes is the anecdotal text (Maharani et al., 2025; Rizana, 2023; Siregar & Gultom, 2025). An anecdotal text is a short narrative that presents an unusual or humorous event while conveying criticism, evaluation, or reflection on a social situation. Writing this type of text requires students to identify a relevant issue, understand the context of the event, determine the intended criticism, and organize the ideas into a coherent structure. Students must also integrate humorous elements with a meaningful social message. These characteristics make anecdotal text writing more complex than simply retelling an event.

Preliminary observations at SMK Negeri 6 Padang indicated that several Grade X students experienced difficulties in developing ideas, organizing anecdotal text structures, and using language appropriately. Some students produced texts with incomplete structures, limited content development, and unclear critical messages. These difficulties were associated with instructional practices that relied heavily on teacher explanations and individual assignments. Teacher-centered instruction may limit students' opportunities to explore contextual problems, exchange ideas, and actively construct written meaning (Ramadhan et al., 2023; Zhang et al., 2024). Instruction that emphasizes explanation and routine exercises may also provide insufficient stimulation for students to identify the humorous and critical dimensions of anecdotal texts.

A contextual learning model is therefore needed to support students in generating and organizing ideas before writing. Problem-Based Learning, hereafter referred to as PBL, is a student-centered learning model in which learning activities are organized around meaningful and open-ended problems. Students identify a problem, collect relevant information, discuss possible explanations, and formulate solutions or responses (Lai et al., 2019; Smith et al., 2022). In writing instruction, these stages may help students understand a situation before transforming it into a structured text. Contextual problems can serve as sources of ideas, while discussion activities allow students to examine different perspectives and refine their written responses.

Research conducted by Putri (2025) showed that PBL was associated with improved anecdotal text writing performance. The finding suggests that problem-oriented instruction can provide a systematic pathway from problem identification to idea development and text production. However, the effectiveness of PBL depends on how clearly the problem is presented and how well the instructional activities guide students through observation, discussion, drafting, and revision. PBL should therefore be supported by learning resources that make the context of the problem accessible to students.

Audiovisual media can support the implementation of PBL by presenting contextual situations through integrated visual and auditory information. Audiovisual media refers to instructional material that combines images, movement, sound, dialogue, or narration. Such media can present events, facial expressions, conversations, and social situations more concretely than verbal explanation alone. These elements may help students observe the sequence of events, recognize a social problem, and identify material that can be developed into an anecdotal text. Nevertheless, audiovisual media should not be used merely to attract attention. Its instructional value depends on how it is integrated into problem identification, discussion, drafting, and revision activities (Damaševičius & Sidekerskienė, 2024; Kiryakova & Angelova, 2023; Law, 2024; Nunes et al., 2022).

Previous studies have indicated that audiovisual media can support comprehension and provide concrete representations of learning content (Sholeh et al., 2024). However, the effectiveness of audiovisual media is not always automatic. Media that are not connected to clear instructional tasks may increase students' attention without necessarily improving their writing performance. This difference suggests that audiovisual media should be examined as part of a structured learning model rather than as an independent presentation device. Integrating audiovisual media into PBL may provide students with a common contextual stimulus while also guiding them through a systematic process of analyzing and developing ideas.

Apart from the instructional model, learner characteristics may also be related to writing performance. One learner characteristic considered in this study is reading interest. Reading interest refers to an individual's tendency, willingness, and enjoyment in engaging with reading activities. Students with high reading interest are generally exposed more frequently to vocabulary, sentence patterns, text structures, and various forms of written expression. Such exposure may support the development of ideas and text organization. Conversely, students with low reading interest may have fewer textual references when constructing cohesive and coherent writing (Agustina et al., 2024).

The relationship between reading interest and writing performance, however, may not be entirely direct. High reading interest may provide students with broader linguistic and conceptual resources, but appropriate instructional support may also enable students with low reading interest to perform well in a particular writing task. Contextual problems, audiovisual stimuli, and collaborative discussion may provide a common source of ideas that reduces students' dependence on prior reading exposure. Therefore, reading interest needs to be examined both as a factor related to writing performance and as a possible condition that influences the effectiveness of a learning model.

Existing studies have examined PBL, audiovisual media, reading interest, and writing skills, but these variables have generally been investigated separately. Research specifically examining the combined effects of audiovisual-assisted PBL and reading interest on anecdotal text writing skills remains limited, particularly in vocational high school settings. Maharani et al. (2025) examined PBL and reading interest in relation to anecdotal writing, but further investigation is needed to determine whether the integration of audiovisual media into PBL produces different effects among students with high and low reading interest. This gap is important because the same instructional model may not necessarily produce similar outcomes for students with different learner characteristics.

This study addresses the gap by integrating audiovisual media into the PBL model and examining reading interest through a 2×2 factorial design. The factorial design enables the simultaneous analysis of the main effect of the learning model, the main effect of reading interest, and the interaction between both variables. The study focuses on Grade X students at SMK Negeri 6 Padang and specifically examines anecdotal text writing, which requires contextual understanding, structured expression, humor, and social criticism.

Accordingly, this study aimed to determine: (1) the effect of audiovisual-assisted PBL on students' anecdotal text writing skills; (2) the effect of reading interest on students' anecdotal text writing skills; and (3) the interaction between the learning model and reading interest in influencing students' anecdotal text writing skills. The study is significant because it provides empirical evidence regarding the integration of a contextual learning model, audiovisual media, and learner characteristics in Indonesian language instruction.

The principal findings indicate that audiovisual-assisted PBL produced higher anecdotal text writing performance than conventional instruction. Reading interest did not produce a significant main effect, and no significant interaction was found between the learning model and reading interest. Thus, the advantage of audiovisual-assisted PBL was relatively consistent across the high- and low-reading-interest groups examined in this study.

2. METHODS

This study employed a quantitative approach using a quasi-experimental pretest-posttest nonequivalent control group design integrated with a 2×2 factorial design. The population consisted of all Grade X students at SMK Negeri 6 Padang in the 2024/2025 academic year, distributed across 14 classes. Two intact classes were selected purposively based on the similarity of their initial academic characteristics and the feasibility of implementing the treatment. Class X Busana 2, consisting of 35 students, was assigned as the experimental class, while Class X Kuliner 1, consisting of 36 students, served as the control class. Both classes completed a pretest and a posttest; the experimental class received audiovisual-assisted Problem-Based Learning (PBL), whereas the control class received conventional instruction.

Reading interest was treated as the second independent variable in the factorial design. All 71 students completed a reading-interest questionnaire and were ranked according to their scores. An extreme-group classification procedure was then applied by selecting the 10 students with the highest and the 10 students with the lowest reading-interest scores from each class. Thus, 40 students were included in the factorial analysis and distributed equally into four groups: audiovisual-assisted PBL with high reading interest, audiovisual-assisted PBL with low reading interest, conventional instruction with high reading interest, and conventional instruction with low reading interest. The remaining 31 students continued to participate in the classroom instruction but were not included in the factorial hypothesis testing. The instruments consisted of an anecdotal text writing test and a reading-interest questionnaire. Students' writing was assessed using a rubric covering text structure, content development, and language use, while the instruments were reviewed for content and language validity and tested for reliability.

Data collection was conducted by administering the reading-interest questionnaire and pretest before the treatment, implementing the respective instructional models, and administering the posttest after the treatment. The pretest scores were used to examine the comparability of the students' initial writing skills, while the posttest scores were used as the dependent variable in the factorial analysis. Descriptive statistics, normality tests, and homogeneity-of-variance tests were conducted before hypothesis testing. A two-way analysis of variance was used to examine the main effect of the learning model, the main effect of reading interest, and the interaction between both variables. Planned independent-samples *t* tests were subsequently used to compare the experimental and control groups within the high- and low-reading-interest categories.

3. FINDINGS AND DISCUSSION

3.1 Findings

The analysis reported in this section was based on the posttest scores of 40 students included in the 2×2 factorial design. The participants were distributed equally across four groups, with 10 students in each group. The first factor was the learning model, consisting of audiovisual-assisted Problem-Based Learning (PBL) and conventional instruction. The second factor was reading interest, classified into high and low categories. Students' anecdotal text writing scores were analyzed descriptively before the main effects and interaction were examined using two-way analysis of variance.

3.1.1 Descriptive Statistics of Anecdotal Text Writing Skills

Table 1 presents the posttest scores of students according to the learning model and reading-interest category.

Table 1. Descriptive Statistics of Students' Posttest Scores

Learning model	Reading interest	N	Mean	Variance	Standard deviation
Audiovisual-assisted PBL	High	10	77.28	198.50	14.09
Audiovisual-assisted PBL	Low	10	75.74	150.57	12.27
Conventional instruction	High	10	50.74	251.48	15.86
Conventional instruction	Low	10	51.47	206.22	14.36

The descriptive results show a consistent difference between the two learning models. Students with high reading interest who were taught through audiovisual-assisted PBL obtained a mean score of 77.28, whereas those taught through conventional instruction obtained a mean score of 50.74. The difference between the two groups was 26.54 points. A similar pattern was found among students with low reading interest. The mean score of students taught through audiovisual-assisted PBL was 75.74, while the mean score of students taught through conventional instruction was 51.47, producing a difference of 24.27 points.

The marginal mean for students taught through audiovisual-assisted PBL was 76.51, compared with 51.11 for students taught through conventional instruction. The overall difference between the two learning models was therefore 25.40 points. By contrast, the marginal mean of students with high reading interest was 64.01, whereas the marginal mean of students with low reading interest was 63.61.

The difference of only 0.40 points suggests that the learning model produced a more pronounced descriptive difference than the reading-interest category.

3.1.2 Effects of the Learning Model and Reading Interest

A two-way analysis of variance was conducted to examine the main effect of the learning model, the main effect of reading interest, and the interaction between the two variables. The results are presented in Table 2.

Table 2. Results of the Two-Way Analysis of Variance

Source of variance	Sum of squares	df	Mean square	F	p	Partial η^2
Learning model	6452	1	6,452.00	31.90	< .001	.470
Reading interest	2	1	2.00	0.01	.921	< .001
Learning model $\times$ reading interest	11	1	11.00	0.05	.817	.002
Error	7281	36	202.25	—	—	—
Total	13,746	39	—	—	—	—

The learning model had a statistically significant main effect on students' anecdotal text writing skills, $F(1, 36) = 31.90$, $p < .001$, partial $\eta^2 = .470$. The null hypothesis concerning the main effect of the learning model was therefore rejected. Students taught through audiovisual-assisted PBL achieved significantly higher posttest scores than students taught through conventional instruction. The partial eta-squared value indicates that the learning model accounted for a substantial proportion of the variation in students' writing scores after the contribution of the error variance was considered.

Reading interest did not produce a statistically significant main effect, $F(1, 36) = 0.01$, $p = .921$, partial $\eta^2 < .001$. The null hypothesis concerning the main effect of reading interest was therefore not rejected. Students categorized as having high reading interest did not differ significantly in their posttest writing scores from those categorized as having low reading interest.

The interaction between the learning model and reading interest was also not statistically significant, $F(1, 36) = 0.05$, $p = .817$, partial $\eta^2 = .002$. This result indicates that the effect of the learning model did not vary significantly according to students' reading-interest categories. The difference between audiovisual-assisted PBL and conventional instruction was relatively similar among students with high and low reading interest.

3.1.3 Comparison of the Learning Models within Each Reading-Interest Category

Planned independent-samples t tests were conducted to examine the difference between the two learning models separately within the high- and low-reading-interest groups. The results are presented in Table 3.

Table 3. Planned Comparisons within the Reading-Interest Categories

Reading interest	PBL mean	Conventional mean	Mean difference	t	df	p	95% CI	Cohen's d
High	77.28	50.74	26.54	3.96	18	< .001	[12.45, 40.63]	1.77
Low	75.74	51.47	24.27	4.06	18	< .001	[11.72, 36.82]	1.82

Among students with high reading interest, those taught through audiovisual-assisted PBL obtained significantly higher anecdotal text writing scores than those taught through conventional instruction, $t(18) = 3.96$, $p < .001$. The mean difference was 26.54 points, with a 95% confidence interval ranging from 12.45 to 40.63. The Cohen's d value of 1.77 indicates a substantial difference between the two instructional conditions.

A significant difference was also found among students with low reading interest. Students taught through audiovisual-assisted PBL obtained a mean score of 75.74, compared with 51.47 for students taught through conventional instruction. The difference of 24.27 points was statistically significant, $t(18) = 4.06$, $p < .001$, with a 95% confidence interval ranging from 11.72 to 36.82. The effect size was also substantial, as indicated by Cohen's $d = 1.82$.

The planned comparisons demonstrate that audiovisual-assisted PBL was associated with higher writing scores in both reading-interest categories. Nevertheless, the difference between the two

learning models was not statistically bigger in one reading-interest category than in the other. The advantage of PBL was 26.54 points among students with high reading interest and 24.27 points among students with low reading interest. The difference of 2.27 points between these effects was small and consistent with the nonsignificant interaction reported in the two-way ANOVA.

3.2 Discussion

The findings demonstrate that the learning model had a significant effect on students' anecdotal text writing skills. Students taught through audiovisual-assisted Problem-Based Learning (PBL) obtained a marginal mean score of 76.51, whereas students taught through conventional instruction obtained a marginal mean score of 51.11. The difference of 25.40 points was supported by the result of the two-way analysis of variance, $F(1, 36) = 31.90$, $p < .001$, partial $\eta^2 = .470$. This result indicates that the instructional model was strongly associated with students' posttest writing performance.

The advantage of audiovisual-assisted PBL can be understood from the sequence of learning activities provided by the model. Students did not begin the writing process only by receiving an explanation of the definition and structure of an anecdotal text. Instead, they first examined a contextual problem, identified the relevant events, discussed possible interpretations, and organized their responses before composing the text. These stages provided a clearer transition from understanding a situation to developing it into a written narrative. Lai et al. (2019) states that the quality of problem design determines how effectively students investigate information and construct knowledge. Lynch et al. (2019) similarly explain that PBL encourages students to apply knowledge through purposeful inquiry rather than merely reproduce information provided by the teacher.

The audiovisual material used in the experimental class also provided a concrete context for writing. Anecdotal texts require students to recognize an unusual event, identify a humorous or ironic element, and formulate criticism of a social situation. Visual and auditory information enabled students to observe characters, actions, dialogue, and the sequence of events before developing their texts. The media therefore served as a source of information within the problem-solving process rather than merely as classroom entertainment. (Abdullahi et al., 2024) emphasize that audiovisual material supports learning when it is integrated with focused instructional activities and directs students' attention to relevant information.

The present findings are consistent with Subagja (2023), who reported that PBL contributed positively to students' anecdotal text writing skills. Both studies indicate that a problem-oriented learning process can support students in identifying ideas and organizing them into a structured text. The current study extends this evidence by integrating audiovisual media into the PBL process and examining the model across different reading-interest categories. The results suggest that the use of contextual problems and audiovisual stimuli was associated with better writing performance in both categories.

Among students with high reading interest, the mean score of those taught through audiovisual-assisted PBL was 77.28, while the corresponding conventional group obtained a mean score of 50.74. The difference of 26.54 points was statistically significant, $t(18) = 3.96$, $p < .001$, with Cohen's $d = 1.77$. Students with high reading interest may possess broader exposure to vocabulary, sentence patterns, and text organization. However, the findings indicate that these resources were more effectively reflected in writing when students were provided with a contextual problem and a systematic procedure for developing ideas.

A similar pattern occurred among students with low reading interest. Students in the audiovisual-assisted PBL group obtained a mean score of 75.74, whereas students in the conventional group obtained a mean score of 51.47. The difference of 24.27 points was significant, $t(18) = 4.06$, $p < .001$, with Cohen's $d = 1.82$. This result suggests that students with low reading interest were also able to benefit from the contextual and media-supported learning process. The audiovisual presentation provided a shared source of ideas, while the problem-identification and discussion stages helped students organize information before writing.

The result should not be interpreted as evidence that PBL increased students' motivation, creativity, critical thinking, collaboration, or metacognitive ability because those constructs were not

measured directly. Nevertheless, the structure of the learning activities may explain why students in the PBL groups produced higher writing scores. Group discussion allowed students to examine different interpretations of the presented problem, while the audiovisual material reduced the need to generate all writing content from an abstract prompt. These interpretations concern the instructional process and should not be treated as additional empirical outcomes.

Reading interest did not have a significant main effect on anecdotal text writing skills, $F(1, 36) = 0.01$, $p = .921$, partial $\eta^2 < .001$. The marginal mean of students with high reading interest was 64.01, while the marginal mean of students with low reading interest was 63.61. The difference of only 0.40 points indicates that the two reading-interest categories had almost identical overall writing performance after the scores from both learning models were combined.

This finding does not necessarily mean that reading interest has no relationship with writing ability. Reading activities can expose students to vocabulary, sentence structures, textual organization, and different forms of written expression (Mahmur et al., 2021). However, the contribution of reading interest may vary according to the writing task, the instructional support provided, and the way reading interest is measured. In the present study, the audiovisual stimulus and the structured stages of PBL may have provided students with a common basis for developing ideas, thereby reducing the performance difference between students with high and low reading interest.

The classification procedure may also have affected the result. Reading interest was measured through a questionnaire and students were selected from the highest and lowest score groups. The study did not directly measure students' reading frequency, the quality and variety of materials they read, vocabulary knowledge, or their ability to transfer information from reading to writing. Therefore, the nonsignificant main effect should be interpreted specifically within the operational definition and participant selection used in this study.

The interaction between the learning model and reading interest was not statistically significant, $F(1, 36) = 0.05$, $p = .817$, partial $\eta^2 = .002$. This result indicates that the effect of audiovisual-assisted PBL did not differ significantly between students with high and low reading interest. The difference between the PBL and conventional groups was 26.54 points among students with high reading interest and 24.27 points among students with low reading interest. The difference of 2.27 points between these two effects was relatively small, which explains the absence of a significant interaction.

The nonsignificant interaction also clarifies the interpretation of the planned comparisons. Although audiovisual-assisted PBL produced significantly higher scores within both reading-interest categories, the model cannot be claimed to be more effective for students with high reading interest than for students with low reading interest. Instead, the results indicate that the advantage of the model was relatively consistent across the two groups. Thus, the influence of the learning model operated independently of the students' reading-interest classification in this sample.

From a pedagogical perspective, the findings suggest that audiovisual-assisted PBL can be used to support anecdotal text writing among students with different levels of reading interest. Teachers may begin instruction by presenting a contextual audiovisual situation containing an unusual event or social issue, followed by activities in which students identify the problem, discuss its possible meanings, determine the intended criticism, and develop the situation into an anecdotal text. The audiovisual material should remain closely connected to the learning objectives and should not replace the processes of planning, drafting, and revising the text.

Several limitations need to be considered. First, the participants came from intact classes and were not assigned randomly, so differences between the experimental and control classes may not have been fully controlled. Second, the factorial analysis involved only 10 students in each cell, which limited the ability of the analysis to detect a small interaction effect. Third, the extreme-group procedure excluded students with middle-range reading-interest scores; therefore, the findings cannot automatically be generalized to all 71 students in the two classes.

The researcher's involvement in implementing the experimental treatment may also have introduced instructional bias. Although the same learning objectives and anecdotal text material were used, differences in instructional delivery could not be eliminated completely. Future studies should

involve larger samples, include students across the full range of reading-interest scores, employ independent instructors or classroom observers, and examine the quality of students' writing in greater detail. Further research may also investigate motivation, creativity, critical thinking, and collaboration as separate variables rather than inferring them from writing scores.

Overall, the findings indicate that audiovisual-assisted PBL was associated with higher anecdotal text writing performance than conventional instruction. The model advantage was found among students with both high and low reading interest, while reading interest itself did not produce a significant main effect. The absence of an interaction shows that the effectiveness of the learning model was relatively stable across the two reading-interest categories examined in this study.

4. CONCLUSION

The findings indicate that audiovisual-assisted Problem-Based Learning had a significant effect on students' anecdotal text writing skills. Students taught through this model achieved higher posttest scores than those taught through conventional instruction. The same pattern was found among students with both high and low reading interest. However, reading interest did not have a significant main effect on writing performance, and no significant interaction was found between the learning model and reading interest. These results show that the advantage of audiovisual-assisted PBL was relatively consistent across the two reading-interest categories examined in this study.

The findings suggest that audiovisual-assisted PBL can be used as an alternative instructional approach for teaching anecdotal text writing in vocational high schools. The model provides students with contextual material that supports problem identification, idea development, and text organization. Nevertheless, the conclusions are limited to the participants and research design used in this study. Future research should involve larger samples, include students across the full range of reading-interest scores, and employ independent instructors or observers to strengthen the validity and generalizability of the findings.

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