Research Article

Project-Based Learning for Teaching Argumentative Writing at the Elementary School Level

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Abstract: This study investigated project-based learning approaches for teaching argumentative writing in Indonesian elementary schools. It, therefore, focused on three dimensions of competency: the student's knowledge, ability, and attitude during the learning process. A case study research design with a qualitative approach was adopted to answer the research questions and provide an in-depth explanation of the events occurring within the learning process. Some 32 participants were observed and interviewed in East Java, Province, Indonesia, comprising four teachers and 24 elementary school children, to learn about their experiences when teaching or learning. Three findings were discerned: (i) the project-based learning model is implemented over six stages and focuses on group assignments for writing argumentatively on specific topics; (ii) the students expressed that this learning model was delightful for them, with them being rather enthusiastic about responding to questions, working together, and listening in lessons; and (iii) the students' writing skills improved in terms of the teacher's assessments of assignments. This learning approach for teaching argumentative writing is highly effective at developing aspects of student competency at the primary school level, mainly writing ability. Based on the findings of this study, school principals are recommended to adopt learning activities based on this paradigm, while teachers can use it to enhance control over classroom settings and ensure that students are not distracted from learning. Future research could look into other successful learning models for improving pupils' writing skills.

İlkokul Düzeyinde Tartışmacı Yazma Öğretimi için Proje Tabanlı Öğrenme
Özet: Bu çalışma, Endonezya ilkokullarında tartışmacı yazma öğretimi için proje tabanlı öğrenme yaklaşımlarını incelemiştir. Dolayısıyla, öğrenme sürecinde öğrencilerin bilgi, beceri ve tutum olmak üzere üç boyutlu yeterliliklerine odaklanılmıştır. Araştırma sorularını yanıtlamak ve öğrenme sürecinde gerçekleşen olaylara derinlemesine bir açıklama sunmak amacıyla, nitel bir yaklaşımla vaka çalışması araştırma deseni benimsenmiştir. Endonezya'nın Doğu Cava Eyaleti'nde dört öğretmen ve 24 ilkokul öğrencisinden oluşan 32 katılımcı, öğretim ve öğrenme deneyimlerini öğrenmek amacıyla gözlemlenmiş ve görüşülmüştür. Üç temel bulgu elde edilmiştir: (i) Proje tabanlı öğrenme modeli altı aşamada uygulanmakta olup, belirli konular üzerinde tartışmacı yazma konusunda grup ödevlerine odaklanmaktadır; (ii) Öğrenciler, bu öğrenme modelinin kendileri için oldukça keyifli olduğunu ifade etmişler, sorulara yanıt verme, birlikte çalışma ve derslerde dinleme konusunda oldukça istekli davranmışlardır ve (iii) Öğrencilerin yazma becerileri, öğretmenlerin ödev değerlendirmeleri açısından gelişme göstermiştir. Tartışmacı yazma öğretimi için bu öğrenme yaklaşımı, özellikle yazma becerisi olmak üzere ilkokul düzeyinde öğrenci yeterliliğinin geliştirilmesinde son derece etkili bulunmuştur. Bu çalışmanın bulgularına dayanarak, okul yöneticilerine bu paradigma temelinde öğrenme etkinliklerini benimsemeleri önerilirken, öğretmenler ise sınıf ortamlarını daha iyi kontrol etmek ve öğrencilerin öğrenmeden kopmamalarını sağlamak amacıyla bu modeli kullanabilirler. Gelecekteki araştırmalar, öğrencilerin yazma becerilerini geliştirmek için diğer başarılı öğrenme modellerini de inceleyebilir.

1. Introduction

In the modern era, learning in educational institutions is essential in improving individual knowledge and acquiring the skills needed to engage with society and succeed in the job market (González-Pérez & Ramírez-Montoya, 2022). The literature points out that the abilities that students will need to face challenges and opportunities in the future include (i) taking personal and social responsibility (McGunagle & Zizka, 2020); (ii) planning and thinking critically and creatively; (iii) having strong communication skills; (iv) understanding cross-cultural differences; and (v) knowing when and how to use technology to solve problems (Maatuk et al., 2022). All schools have many goals they want to achieve within the learning process, but fostering a conducive learning environment for students with effective learning methods is very important for improving their knowledge and skills. Thus, they need a learning experience that is holistic yet relevant to prepare them to face the future.

Learning to write argumentative essays involves students becoming skilled at expressing their ideas, thoughts, and opinions and supporting them with accompanying facts as evidence for them (Ferretti & Graham, 2019). Using a quantitative approach, an experimental study revealed that the potential for critical thinking skills improves in line with improved argumentative writing, with the experimental group significantly outperforming the control group, who wrote argumentatively without referring to critical thinking skills (Nejmaoui, 2019). Effective learning methods also give students an extraordinary and enjoyable experience. More specifically, argumentative writing can be taught as early as elementary school because writing skills last a lifetime and support other personal abilities in various aspects of life. In addition, children need support from the most basic level of education to develop their writing skills because, unlike speech, writing skills do not develop naturally. Indeed, being skilled at writing needs regular study and practice, so a suitable learning model is vital to developing the desired writing skills (Chimbunde & Moreeng, 2024).

Many models are used for learning writing to improve students' academic achievement and satisfaction, such as models based on using digital learning platforms for collaborative learning (Abuhassna et al., 2020; Üstünbaş, 2023). Recent studies have also used pre-tests and post-tests to reveal differences in the quality of argumentative writing (Latifi et al., 2023). Teaching writing can involve the reconstruction method, whereby students reconstruct the text of an argumentative essay whose writing structure and content characteristics are not entirely correct because this makes it easier for students to enhance the structure and content of the essay (Manning, 2021; Xu et al., 2022). Another study considered the think–pair–share learning method, which emphasizes broader learning opportunities through a conducive atmosphere for students based on the dialogue method (Montessori et al., 2021). Studies of the project-based learning (PBL) model have identified applications in schools, with the PBL model having the positive effects of making learning more interactive and increasing critical thinking skills (Biazus & Mahtari, 2022; Cirit-Işikligil & Günay, 2022; Kemaloglu-Er & Sahin, 2022; Zhang & Ma, 2023). Students manage their activities to complete their assignments independently so they understand how to write more deeply. Nevertheless, few studies have used a qualitative approach to elucidate how this learning model influences students' behavior and improves the level of their writing skills.

The PBL model has long been studied in developed countries, but studies of it have focused more on quantitative studies at the high school, vocational high school, and college levels. It has also been investigated for citizenship education subjects, with the qualitative findings indicating that PBL supports effective pedagogical skills. The literature posits that the PBL

model can deepen students' knowledge while developing scientific writing skills through problem-solving and investigation activities (Palupi et al., 2020). Such findings imply that using such a model for learning to write in Indonesian will not solely focus on the result—it will also emphasize the process through which students solve problems and ultimately gain valuable experience by actively participating in their projects (Halim et al., 2023; Hidayati, 2021). The literature points out that PBL has shifted the teaching role from just conveying content and sharing information concisely to a more proactive one requiring work products beyond memorizing theories and information. On the other hand, students have cited several obstacles, such as a limited technological transformation preventing them from producing good ideas during learning (Handrianto, 2018).

Based on some initial observations from the existing literature, there is not enough evidence to conclude that the PBL model effectively teaches writing skills to elementary school students. More in-depth studies are therefore needed to provide a clearer picture of how applying the PBL model will affect students' behaviours and writing skills. The novelty of this research lies in investigating, using a qualitative approach, the application of the PBL learning model for teaching argumentative writing in the Indonesian language at the elementary school level. Three main themes related to the impact on behaviour and writing skills were also considered in detail to support previous findings about influential learning theories. We expect that this research will support learning curriculum practices and classroom management at elementary schools in achieving learning objectives in three aspects of competency: students' knowledge, skills, and attitudes.

1.1. Research Questions

Based on the abovementioned background for the PBL learning model and empirical evidence of its application within various educational levels and subjects, three research questions were posed as follows:

1. What form does the project-based learning model take when teaching argumentative writing in the sixth grade of elementary school?
2. How do students behave when participating in project-based learning in elementary school?
3. How are the students' argumentative writing skills affected when using the project-based learning model at the elementary school level?

2. Literature Review
2.1. Project-Based Learning (PBL)

PBL is a learning method that employs activities as a learning medium to develop knowledge and skills through a structured and meaningful long-term inquiry process. Students explore, assess, interpret, and synthesize information to achieve various learning outcomes. The process is greatly influenced by student activity in the classroom, with students being involved in designing, developing, and implementing solutions to a given problem (Maida, 2011). Indeed, students conduct investigations of open questions by working together in a group and then applying the acquired knowledge to produce a particular product. Compared to conventional learning, PBL tends to be unique and innovative because students directly experience an environment that presents challenges and opportunities for solving a problem.

The five main general principles of PBL are centralism, driving or guiding questions, constructive investigation, autonomy, and realism. The centralistic principle emphasizes

project work as the essence of a curriculum for teaching students a new knowledge concept in classroom learning activities. The second principle implies that project work begins with several questions or problems that encourage students to master a certain concept. Next, constructive investigation means achieving goals through inquisitive activities like concept-building, problem-solving, and decision-making. Autonomy, meanwhile, means students are free to make their own choices, work with minimal supervision, and be independently responsible during the learning process. Finally, realism means a project should be rooted in reality and focus on an authentic problem.

In the literature, studies have revealed the characteristics of PBL in educational institutions when preparing students for future life: (i) students learn to make decisions within the framework; (ii) students are presented with a challenge or problem; (iii) students develop a process to find a solution to the problem/challenge; (iv) evaluation is carried out continuously; (v) students periodically reflect on their activities; (vi) students are collectively responsible for accessing and managing information to solve the problem; (vii) students create final products through their project work; and (viii) students develop a tolerant attitude toward mistakes and shifting learning situations (Fernandes, 2014). The PBL model is very useful for learning in various educational disciplines. For example, it encourages students to complete their study assignments on time, improves their skills, helps them to prepare themselves to enter the world of work, and cultivates creativity, independence, and self-confidence (Alacapınar, 2008; Dias et al., 2017; Pan et al., 2019).

2.2. Argumentative Writing

Argumentative writing is a skill where various discourse is employed to convince the reader of a view conveyed by the author (Crowhurst, 1990). Thus, writing sentences argumentatively must be logical and systematic, with it being supported by evidence to strengthen the objective truth being conveyed by the writer. The results can be evaluated, for example, through assessment results, defense, and standard scales (Varghese & Abraham, 1998). Previous studies have posited that argumentative writing is developed based on four scientific principles: (i) considering various views or opinions that conflict with the author's opinion; (ii) stating the main problem very clearly; (iii) investigating the requirements for certain objectives, which are discussed and conveyed according to the problem formulation; and (iv) determining the aims and objectives that are relevant to the problem being investigated (Ferretti & Graham, 2019).

Argumentative writing skills benefit the students who learn them in many ways. For example, it helps one express oneself better, develop personal satisfaction, increase one's awareness and understanding of the surrounding environment, and develop an understanding of how to employ language (Astuti et al., 2021; Kaldi et al., 2011; Tamim & Grant, 2013). An argumentative essay is a unique way of exchanging information that is not influenced by subjective views. When presenting facts as supporting evidence, the arguments should be accepted as the truth (Makena, 2023; Ngereja et al., 2020).

Argumentative writing is a type of deductive paragraph writing, and very rarely has the empirical evidence revealed an inductive format for learning argumentative writing. Indeed, students are taught to conclude resources or facts relevant to the problem topic set by the teacher. In contrast, inductive paragraphs are not tested for validity and make uncertain, generalized conclusions. Recent studies have identified argumentative writing as one of the most challenging forms of composition for students (Ahmad et al., 2023; Hazaea, 2023; Saricaoglu & Atak, 2022; Zorba, 2023). Also, the literature offers guidance on how to improve argumentative writing skills, and one option that teachers often follow is to apply learning

models for effective learning, with the project-based learning model being prevalent. This model helps teachers connect the teaching material with situations in the real world, thus encouraging students to associate the knowledge they gain with real-life applications in the school, the family, and the community (Wahbeh et al., 2021).

3. Research Methods

3.1. Design

This research adopted a case study research design with a qualitative-descriptive approach. More specifically, the case study research design developed by Baškarada (2014) was deemed very suitable for this study, which explores information about using the project-based learning (PBL) model for teaching argumentative writing in the Indonesian language at elementary school. There are three areas of focus for this study: (i) the PBL model for learning argumentative writing, (ii) its impact on student behaviour, and (iii) its effectiveness in improving writing skills. It is also essential to consider that further in-depth scientific knowledge can be obtained from these cases. The research was carried out among elementary schools in Blitar, East Java Province, Indonesia, during one semester between January and June of 2023.

3.2. Participants

The participants for this research comprised four teachers and 28 students in state elementary schools (SDNs) in Blitar, East Java Province, Indonesia. The criteria for determining participants based on desired characteristics were drawn from the purposive sampling technique. The teacher participants taught the Indonesian language subject, and they used the 2013 curriculum and applied the PBL method for argumentative writing assignments. The remaining participants were sixth-grade students who had written argumentative writing assignment reports in the odd semester of the 2022/2023 academic year. Table 1 gives information about the research participants.

Table 1.

Participant Description

No	Gender		f	Percentage
	Teachers			
1	Female		4	100
	Male		–	
		Total	4	100
	Students			
2	Female		19	68
	Male		9	32
		Total	28	100

From this table, it can be seen that there were 32 total participants, including four teachers, all of whom were female. Of the 28 student participants, 19 (68%) were female and 9 (32%) were male.

3.3. Instrument

The researcher served as an instrument and data collector. The interview and observation guide instruments used were limited to supporting the researcher as the vital instrument. Observation was used to monitor the research object directly so the researcher could collect the data necessary to inform the research. The observation guide contained statements that guided the

researcher in observing student behaviour when learning argumentative writing. Interview guidelines were designed to ensure that the information gathered from the students aligned with the specified objectives. Thus, the interview guide created by the researcher included questions covering all the objectives of this research. (See Table 2).

Table 2.

Research Instrument Grid for Argumentative Writing

No	Theme	Aspect	Dimensions	Source	Technique
1	Application of the PBL model	Preparing the learning process includes aspects such as how the teacher opens the lesson, the presentation of material, the methods, the use of language, time allocation, the process of instilling values, mastery over the class, media, and evaluation/assessment.	Learn the preparations made for the teaching and learning process	Students, teachers, and related resources	Observations and interviews
2	Student behavioral response	Student behaviour during the learning process	Learn the students' behavioural responses	Students, teachers, and learning processes and presentations in class	
3	Student skill response	Students' perceptions about the content of the argumentative paragraphs they wrote in groups	Learn students' feelings about the content of their argumentative paragraphs.	Students and their assignment results	

3.4. Data Collection

Data were collected through observation, interviews, and documentation. Before collecting field data, the author first carried out the approval stage by submitting a letter to the school principal requesting permission to conduct the research, including a research proposal and a research application letter as a condition for carrying out the research at that location. Data collection was carried out after receiving a reply with a schedule for observation and interviews. The first observations were carried out to observe the research subjects and the conditions in the field. Thus, the first observation was carried out in January 2023 at an elementary school, and the researcher observed learning activities for argumentative writing in class and class discussions between students and teachers. The second observation occurred from February to April, albeit only in the fourth week of each month, to observe class groups' assignment presentations. During the observation process, the author took notes in a notebook and recorded learning activities with a cellphone for approximately 30–40 minutes. The third observation took place at the end of the semester to see the teachers' assessments of the assignments. The researcher observed students' behaviour and argumentative writing to determine if applying the PBL learning model led to suitable learning outcomes.

The semi-structured interview stages were arranged and adapted to the participants' conditions. The interviews emphasized the implementation of the PBL model and its impact on behaviour and writing skills. The interviews were 60 minutes for teachers and 30 minutes for students. During the interview, the author documented the interview data through notes, recordings, and photos of activities assisted by one teacher and one staff member. The results of the

interviews were recorded in a transcript according to what the participants said. These data were combined with the field notes to form a printed transcript. The accuracy of this transcript was checked by listening to the interview results and repeatedly comparing it with the transcript. The data were then organized and stored on a computer, and the data was also backed up on a flash disk to avoid data loss.

3.5. Data Analysis

As Creswell and Creswell (2018) suggested, qualitative data analysis was carried out in stages. It assessed the relationships between each meaning and the learning experienced by participants to reveal the relationships between themes so these could be used to answer the research questions. The first stage was data reduction, selecting the relevant data focused on the three research themes, which were then grouped and entered into Microsoft Excel. The author also removed any unnecessary data during this stage, so only data that was important and matched the research themes was passed onto the next stage. The second stage then presented the data as a brief description.

In summary, the data was carefully checked to ensure correctness. It was then compiled by classifying the data and correcting unclear interview answers. The coding process was structured based on the meanings of participants' statements, behaviours, other phenomena, and actions. The coding was ordered according to the participant number, starting with the teachers, where participant 1 had code P1A, participant 2 had code P2A, and so on. The students, meanwhile, were assigned codes P1B, P2B, and so on until P28B. The data presentation narratively emphasized aspects of student competence and the suitability of the learning model for achieving the learning objectives of the teaching material. The final stage concluded with new findings from the research conducted so the issue at hand could be elucidated and future actions could be suggested. Data validity was ensured through triangulation by reporting the research findings to the interviewed participants. This convinced the author that the analysis results accorded with the experiences and perceptions of the participants, thus ensuring the credibility of the research results.

4. Findings and Implications
4.1. The PBL Model for Teaching Argumentative Writing in Elementary Schools

The first theme relates to the PBL model used to teach argumentative writing in elementary schools. The findings revealed that this model, practiced in the sixth grade of elementary school, was carried out through various activities inside and outside the classroom. These included group collaboration, aspects of student independence, and elements of psychomotor mastery. For the implementation, the teacher first prepared a learning implementation plan (RPP) for the syllabus based on the 2013 curriculum, specifically for the sub-theme of learning to write argumentative paragraphs. Students were then directed to create certain products from their learning of the Indonesian language by engaging in stimulating argumentative topics in front of other members of the class. The teacher designed group-learning activities based on the PBL model, whereby students were directed to help each other during the teaching and learning process so emotional bonds would be established between them. The observations revealed that the school principal played an essential role in supporting the success of the PBL model by motivating and supporting teachers as they taught their children.

In class activities, students were conditioned to listen, memorize, and ask questions critically. Teaching activities consisted mainly of material about the structure, characteristics, types of argumentative paragraphs, and how to compose them. The teacher also provided examples of

argumentative paragraphs for specific topics that were easy to understand, such as the prohibition of littering and arguments about the cleanliness of the school environment. In this way, students could understand how to write excellent and correct argumentative content and make observations about the assigned topics. One participant explained the structure of argumentative writing, as described in Fragment 1.

> Students will be taught argumentative writing in class. The students also learn the steps in composing a paragraph, starting with creating a topic, determining the purpose of the essay, conducting field observations, creating an essay outline, developing the essay outline, and making a written conclusion that will later be presented in front of the class. The material taught also describes the structure of an essay, which consists of an introduction, body of the argument, conclusion, and summary. The introduction should grab the reader's attention by introducing the facts necessary to understand the student's argument. The body of the argument must convince the reader by presenting paragraphs that provide a correct way of thinking and are not excessive. Conclusions and summaries must be written logically and according to the objectives and topics discussed. (Fragment 1)

From fragment (1), it can be surmised that students are taught the correct structure of argumentative writing. They are also taught to recognize the characteristics of argumentative writing, which must contain opinions about a particular topic and be accompanied by logical reasons and factual data that will support the students' opinions. This ends with a conclusion.

The teachers taught several types of argumentative writing. The first type contains opinions and reasons accompanied by several details. The second also contains opinions and reasons, accompanied by evidential examples that the reader cannot deny. The third type discusses cause and effect and ends with a statement. In the fourth type, the effect of a cause is developed by conveying the effect first, followed by the cause. The teacher determined which type of argumentative writing was to be assigned to students, who were divided into four groups with four or five students per group. The colours red, yellow, green, and blue were used to differentiate the groups of students. Students could freely choose the type of argumentative paragraph they wanted to write.

After students learned the material in class, the next stage was conducting the project outside of class. The aim here was for students to learn to write argumentative paragraphs based on their experiences inside and outside the classroom. The interviews revealed that teachers believe that children at the elementary school level are socially active learners who learn by exploring their environment, as expressed in Fragment 2.

> These children must learn from an early age to develop their critical thinking abilities so that they can hone their writing skills better at the secondary school level and be ready to apply them in new situations. They will also learn how to solve problems in the family or the wider community. Before carrying out a writing assignment, they are also taught to pay attention to their argumentative writing, which complies with writing rules for using punctuation and enhanced spelling (EYD). In this case, knowledge will be more useful when applied to solve certain problems. (Fragment 2)

From fragment (2), it is evident that the teachers are relatively optimistic about their learning methods. Likewise, they have confidence in the abilities of their students. This is because the teachers monitor the students during the project process to make the learning process more effective. The assessment model for argumentative writing assignments is based on weighting each element using an interval scale, as shown in Table 3.

Table 3.

Guidelines for Assessing Argumentation Essay Writing Assignments

Rated aspect		Score	Criteria
Contents	Topic development creativity	11-15	The content is appropriate to the topic, and the ideas are well-developed.
		6-10	The content is appropriate to the topic, but the development of ideas is not good.
		1-5	The content is not appropriate to the topic, and ideas are not developed.
	Presentation of facts and supporting evidence	11-15	There are relevant supporting facts and evidence.
		6-10	The facts and supporting evidence are incomplete.
		1-5	There are no supporting facts or evidence.
Organization	1. Introduction 2. Body in an argumentative essay 3. Conclusion	15-20	The argumentation structure is well-organized, clear, and coherent.
		9-14	The structure of the argument is a little disorganized and incoherent but clear.
		3-8	The argumentation structure is messy, unclear, and incoherent.
Vocabulary		11-15	Overall, the choice of words is correct; there are no word-formation errors, and denotative words are used.
		6-10	There are a few inappropriate word choices and a few errors in word formation, but denotative words are used.
		1-5	There are many inappropriate word choices, many word-formation errors, and the use of connotative words.
Language use		15-20	The sentence structure is clear, and the use of sentences is correct.
		9-14	The sentence structure is unclear, and the use of sentences is less precise, but the meaning is not unclear.
		3-8	The sentence structure is unclear, and the use of sentences is less precise, so the meaning becomes unclear.
Mechanic		11-15	The use of punctuation and spelling is correct.
		6-10	There are several errors in the use of punctuation and spelling, but they do not confuse the meaning.
		1-5	Punctuation and spelling errors often occur, resulting in confused meaning.

Table 3 shows the guidelines for assessing argumentative writing taught with the PBL-based method. The teacher carefully considers each step in the chosen learning method and specialises in teaching the subject of the Indonesian language. This is done because the aim of learning with PBL is for students to gain new knowledge and skills and become more active. Of course, completing an assignment on a complex topic results in a genuine product, namely the argumentative written work.

The teacher gives assignments on certain topics based on problems in the environment around the students. There are six stages of PBL: (i) determine the basic questions, (ii) design project plans, (iii) develop schedules, (iv) monitor students and their project progress, (v) test for results, (vi) and evaluate the experience. The framework is grouped into six learning steps. The first step involves determining the fundamental question for a particular topic, starting with identifying a pertinent problem. Such questions emphasize aspects that will be investigated in depth by students. For example, the teacher could tell the students that an office building is being built next to the school and express the opinion that the sound of the building work disrupts the learning process. Based on this problem, a fundamental question can be created to determine if there is a solution to the problem: "What can we do to reduce noise in our

classroom?" The teacher then assigns students to compile an argumentative paragraph to convey their opinions. The students then write several argumentative paragraphs on this topic using data and facts to provide reasons and evidence to strengthen or reject their opinions.

The second step is to design a project plan collaboratively between the Indonesian language teacher and the sixth-grade students. The aim here is for students to feel a sense of "ownership" over the assigned project. This planning involves rules for selecting activities to support answering the essential question with the help of accessible tools and materials. The third step is to prepare a schedule for completing the project, and this is carried out in several stages: (i) create a timeline for completing the project, (ii) set a final deadline for completing the project, (iii) encourage students to plan new methods, (iv) guide students when they choose methods that are unrelated to the project, and (v) ask students to explain why they chose a method. In the fourth step, the teacher monitors the students and their project progress because the teacher is responsible for the student's activities while completing the project. This monitoring takes the form of facilitating students in the process. In other words, the teacher plays the role of a mentor for the students. In order to simplify the monitoring process, a rubric was created to record all the critical activities. The fifth step involves performing assessments so the teacher can measure the achievement standards, evaluate each student's progress, give feedback about the level of understanding that students have achieved, and assist other teachers in developing subsequent learning strategies. The sixth step involves evaluating the experience so that teachers and students can reflect on the activities and results of their projects.

The importance of developing practical learning steps for the RPP lies in directing teaching and learning activities to achieve essential student competencies. Thus, teachers must systematically prepare complete lesson plans for implementation in the teaching and learning process. The PBL model is designed to facilitate analysis of student learning success based on existing assessment items so teachers can see whether the students have achieved the assessment items in the RPP. In terms of delivering argumentative writing learning material, various aspects of writing are taught. If there is a discrepancy in the number of face-to-face meetings for conveying the material in the RPP with those in class, then the teacher determines at which point the delivery of the material will be less effective. The hope is that such practices can save time and energy and make organizing the learning patterns delivered to students easier so that satisfactory results can be achieved.

4.2. The Effect of the PBL Model on Student Behavior

The second theme related to the impact of the PBL model on student behaviour. The findings revealed that students who had completed argumentative writing assignments using PBL had much better writing skills than they previously had. Indeed, students were motivated to complete their argumentative writing projects, with their increased curiosity and interest, a sense of satisfaction, and extrinsic and intrinsic reinforcement for completing the assignment on time. The PBL model allows every student to imitate what scientists do in their work. This makes it exciting and fun for them, leading to the students doing good work with the teacher's support. By giving students the freedom to explore themselves through argumentative writing, they are motivated to explore the environment around them critically.

The teachers expressed that the students achieved satisfactory assignment scores, especially for an increased ability to develop topics creatively, convey facts, and use advanced vocabulary and spelling.

In the interviews with the student participants, most expressed the view that learning to write argumentatively in group assignments was very interesting. A minority of students (four) said it was interesting when done in groups. In contrast, they said they found it challenging to complete individual assignments based on traditional learning methods. This is because they prefer working on projects in groups and discussing with other group members, compared to working alone on the same topic. The teachers admitted that some students behaved negatively in lessons, preferring to joke around, be lazy, and generally not be serious about completing their tasks. A quote from the interviews is presented in Fragment 3.

> The students were very creative in completing argumentative writing projects. The creativity is reflected in the pictures they attach and the props they use to support their argument. For example, when the red group proposed to write an argument about waste, they looked for images on the internet about the impact of littering behavior and then put it in the proposal. They also used teaching aids related to environmental cleanliness. When the students presented the assignment in front of the class, they looked very enthusiastic and happy. During this presentation, other groups were allowed to respond to questions from students who may not have understood the material presented. (Fragment 3)

From fragment (3), we can see how students are pretty creative in the argumentative writing process, and teachers also provide opportunities for other students to understand more about the topics being discussed. Students learn to make decisions and create a framework for achieving results in such a learning context. They also become more responsible for completing tasks as a group. The observations revealed that the students could communicate and collaborate well, as reflected in Fragment 4.

> Using the PBL model makes students tend to be more involved in learning. They pay more attention and concentrate on listening to what the teachers say. The PBL model is considered quite effective in improving students' independence, group work practice skills, and psychomotor mastery. (Fragment 4)

Based on the results for the second theme, we can deduce that the PBL model influenced the students' affective domain (i.e., the attitudes and behaviours) and the psychomotor domain, which relates to writing skills. PBL practices increase students' interest in completing argumentative writing assignments on time, and they can adapt socially with their classmates. The students go through a long process of investigating and responding to questions on complex problem topics. They are also highly willing to observe phenomena related to the assigned topic and accept the opinions and ideas of fellow group members when composing argumentative paragraphs. The students were also quite enthusiastic about responding to presentations from other groups. The observation revealed that the students showed persistence and thoroughness, as demonstrated by their commitment to completing assignments on time. Another positive effect was that students understood and imitated good, correct writing examples. Altogether, this implies that the PBL model is helpful for students and teachers in fostering student behaviour that is more responsible and motivated to complete tasks in a fun and creative way.

4.3. The Effectiveness of Implementing the PBL Model

The third theme concerns the effectiveness of implementing the PBL model for teaching argumentative writing. The results reveal that the PBL model is entirely appropriate for teaching argumentative writing and is an exciting way to deliver material to students because there was an improvement in students' level of writing knowledge. Indeed, the intellectual activity of students is improved through this model because students must remember the

lesson material and then explain it themselves. Students also test their writing skills in group assignments related to that material. The ability of students to put the knowledge they gained into practice was seen in the results of their assigned tasks, which involved creating solutions to problems that occur in everyday life. Students could connect and combine various components and aspects of argumentative writing at the synthesis level to create new knowledge. Ultimately, students gained the skills to make predictions or decisions based on their writing knowledge.

Based on the observations that were made, it appears that students' writing skills still need to be improved because just one lesson is not enough to practice good argumentative writing skills—it requires regular practice. It could be seen that students' writing comprehension abilities continued to increase until the end of this semester, such that students understood the nature of argumentative essays, the content's characteristics, and the steps involved in writing them. Nevertheless, when completing assignments independently, the students were not skilled enough to present the background to the problem in the essay, mention facts to support their opinion, and conclude the essay at the end.

In the assessment of the argumentative essay writing assignment, the students, on average, scored 11–15 for creativity in topic development, vocabulary, and language use. For the content aspects of the organization in preparing the structure and its mechanics, the average student score was 6–10. The teachers expressed that some of the students' paragraphs had shortcomings in creatively developing topics and ideas, and sentence structures and vocabulary use needed to be improved for assignments in the following semester. The arguments were also lacking in terms of organizational structure. Nevertheless, this is only natural because the sixth-grade students only started receiving teaching with the PBL model this semester. They, therefore, still needed to learn to improve their ability to write correctly and well, especially when compiling content for the introduction, the body of the argument, and the conclusion. In the mechanical aspect, 2 out of 20 individual tasks and 1 out of 5 group tasks had errors, such as (i) inappropriate use of commas; (ii) the use of intra-sentence conjunctions (e.g., because, but) as inter-sentence conjunctions; (iii) a lack of space in the word (in), which is a preposition; (iv) words that were not correct; and (v) errors in writing affixes.

Although not all the students achieved the highest scores in the assessment results, it is notable that they could work together and help each other, including colleagues from other groups. A quote from an interview with a student participant is shown in Fragment 5.

> Implementing the PBL model for teaching argumentative writing by the teacher is very interesting. We worked together with other students in groups so that the task completion process could be completed more quickly. Several topics were used for paragraph-writing assignments, such as about litter, the dangers of smoking, love for domestic products, and the cleanliness of the school environment. The practice was more fun than conventional learning because teachers monitored the projects they gave. The material presented in class was also easy to understand. They also allowed the students to ask questions and described several examples of argumentative texts that some of us did not understand. (Fragment 5)

The collected data identified several factors that hindered the effectiveness of the PBL model, making it suboptimal when assigned individually. First, students admitted that they still experienced difficulty coming up with ideas and thoughts for an argumentative written work. Although 21 students were quite able to develop ideas and concepts, the other seven were still not fluent in writing, and the content of their writing was illogical. Second, the students still did not understand the structure of writing a good argument. The facts and

evidence used to support the ideas were better in group assignments than when given in the form of individual assignments, where the content was less convincing. Nevertheless, in terms of language use, the contents of the writing were relatively straightforward for other groups to understand.

> Weaknesses in implementing the PBL model relate to the teaching process, which takes relatively longer than traditional learning methods. This student-centered learning method to train creativity and writing skills is much more difficult for teachers because they have to study material suitable for elementary school students and make it into a project. The monitoring process is also carried out more than once to obtain assessment results with satisfactory writing scores. (Fragment 6)

From fragment (6), it is clear that practical implementation of the PBL model with satisfactory assessment scores requires concrete efforts from teachers and students. Teachers act not only as facilitators—they must also have expertise in compiling innovative lesson plans following the principles of the PBL model and then implement this for teaching argumentative writing. The assessment scores for argumentative writing helped teachers evaluate how effective the implementation of the PBL model had been in improving students' understanding of and ability to do it.

The findings of this research build upon teaching theory for education, which focuses on how students learn and retain information. Teachers have applied the PBL model to adapt to various learning styles and the academic needs of elementary school students. As such, this effective learning model has helped teachers manage their students' behaviour and improve their writing skills, allowing them to communicate reliably and helpfully to others in need. The course empowers teachers to cultivate an inclusive and conducive learning atmosphere. The findings presented here will also serve as a reference for using effective learning methods to improve the writing skills of elementary school students, especially sixth graders, before they progress to a higher level.

5. Discussion and Conclusion

Implementing the PBL model for learning argumentative writing in sixth grade was found to be quite effective, as evidenced by the feedback and learning outcomes of the students, who can follow the learning instructions and complete assignments. Thus, this learning medium supports the development of students' competence and creativity in writing argumentatively. Indeed, students are allowed to develop and express themselves through topics assigned by the schoolteacher, and this implementation of classroom learning always involves active participation from students in groups. Before presenting the material, the teacher provides a grid, and the students are directed to complete the assignment. The PBL model encouraged students to understand the learning material by creating written argumentative works that were relevant to it.

The learning materials were also delivered as live simulations so students could practice writing structure and content from the introduction to the final conclusion. Experts posit that this learning model encourages students to find answers and develop through their own activities and practices. They gain an in-depth understanding of the learning materials and how to write good argumentative content. According to previous research, this learning model is very effective because it cultivates students who think creatively, behave more responsibly, and learn to work together to complete tasks on time. This learning model also fosters self-confidence, as evidenced by the students' courage to explain their work products before their classmates.

Most sixth-grade students did not experience significant difficulty completing the assignments the teacher set to write argumentative text, although some needed additional assistance. Teachers' patience was vital in guiding and directing students to achieve satisfactory assessments, and our findings show that the teachers' tenacity and patience indeed produced results. Students could write argumentatively, even if their works were not perfect. The teachers believed that not everyone could express feelings and intentions verbally, but they could express their feelings and intentions in writing using language that is easy to understand. This indicates that the PBL model effectively improved writing skills and reinforced positive behaviour.

For written information to be conveyed clearly to the reader, it certainly requires a continuous expression of ideas in a logical sequence according to the language's rules. Thus, argumentative writing is a productive activity where the writer must have a robust linguistic instinct to use language in an agile, engaging, and effective manner. Such an ability can result in clear, precise, and harmonious text with the goals the teacher wants to achieve. However, several criteria for good argumentative writing must also be considered so that the aims and objectives of such writing can be achieved. The findings of this research show that students' writing skills improved, and the PBL model also improved behaviour during learning, showing how the learning methods delivered by teachers can influence students' learning outcomes.

Learning practices with the PBL method help students prepare for their next stage of education. Through further projects that resemble the tasks they have worked on, they will develop skills that will be useful in their subsequent careers because writing skills do not come out of nowhere—they must be continuously improved. Aside from this, material relevant to the creative industries curriculum is also very much needed. Several topics teachers mentioned in this research are relevant to the latest demands and developments in the creative industry. Thus, teachers provide valuable feedback and guidance when supervising argumentative writing projects, and the skills possessed by students will undoubtedly improve as a result.

Based on the findings, three important conclusions can be drawn: First, the PBL model for teaching argumentative writing encourages creative thinking and helps students to collect, plan, and develop their ideas to find solutions with the knowledge they have independently. Second, the PBL model encourages students to behave more actively in the learning process for argumentative writing, especially when the learning takes place in groups. Third, students' writing skills improve, as evidenced by the teachers' final assessments. The above benefits help dismantle various barriers for students when learning argumentative writing because teachers are more than just facilitators. The process enables them to learn more about their students, thus helping them to communicate progressively and meaningfully with the students and monitor their learning. In addition, the PBL model created opportunities for students to demonstrate their writing abilities independently.

In summary, using the PBL model helps develop students in class and trains their proactive abilities for solving problems. This contrasts with previous studies that have stated that students experience obstacles in learning writing in terms of their ability to produce good ideas (Handrianto, 2018). This research, therefore, emphasizes the importance of using an effective learning model to make it easier for students to come up with ideas when completing argumentative writing assignments. The literature also highlights the importance of the learning model for learning to write in Indonesian because it must emphasize a process

in which students can solve problems and ultimately gain valuable experience by actively participating in their projects (Halim et al., 2023; Hidayati, 2021).

Previous studies have found that using the PBL model positively affects student competence, with students becoming more interactive and able to think critically (Biazus & Mahtari, 2022; Zhang & Ma, 2023). The findings in this present research contribute further knowledge about the benefits of using the PBL model for teaching writing because it influences students' cognitive, affective, and motoric aspects. It can be understood that learning to write argumentatively is not just about expressing thoughts, opinions, and ideas but also about how this learning can be helpful for students. Nevertheless, this is challenging for some students, but the PBL model offers a learning method that can benefit students, as explained in the literature review. For example, it helps by encouraging students to complete their study assignments on time, improving their skills, preparing them for entering the world of work, and cultivating creativity, independence, and self-confidence (Alacapınar, 2008; Dias et al., 2017; Pan et al., 2019).

Based on the findings and discussion, the PBL learning model can be used as an alternative method for effectively improving students' initial argumentative writing skills in the learning process, especially for the Indonesian language. Some suggestions for schools, teachers, and future researchers are listed. First, this case study of learning Indonesian argumentative writing through the PBL model showed enhanced learning outcomes. This can be supported further by equipment and material resources. It is therefore hoped that schools will provide such support in terms of tools, materials, and constructive learning facilities. For teachers, the results of this present research demonstrate the success of the PBL model for teaching argumentative writing in the Indonesian language. Lesson plans and assessment guidelines support this success, indicators that are implemented and understood by students, the formulation of learning objectives that are achievable for students, the use of appropriate learning media, improved student activity and enthusiasm in the learning process, and creativity when participating in language learning. This explains why Indonesia uses the PBL model. This research was limited to teaching argumentative writing to sixth-grade elementary school students, so it is uncertain whether the impact and effectiveness of the PBL model will be reflected at a higher level of education. The research also employed a qualitative approach limited to the East Java Elementary School case in East Java Province, so these findings cannot be generalized to other settings.

Note on Ethical Issues

The author declares that the study does not need approval from the ethics committee according to the research integrity rules in their country. (Date of Confirmation: 14/06/2024).

Conflict of Interest

The authors declare no conflict of interest.

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