The Effects of The Blended Project-Based Literacy that Integrates School Literacy Movement Strengthening Character Education Learning Model on Metacognitive Skills, Critical Thinking, and Opinion Expression

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Abstract: Metacognitive, critical thinking and opinion expression are in high demand. This study aimed to investigate the effects of the blended project- based literacy that integrates school literacy movement strengthening character education (literasi berbasis proyek terintegrasi GLS dan PPK: Li-Pro-GP) learning model on students' metacognitive skills, critical thinking, and opinion expression. A post-test experimental design was used to answer the research question. The study was conducted from August to October 2021 at Government Junior High School 23 Malang. Seventh-grade students were selected as research participants. The participants included 30 students from class VII-2. The research instrument was five essay questions to measure critical thinking skills. Material and assessment experts validated the essay questions developed by the researcher. The items that were declared valid were tested for validity. The result showed five valid items with high reliability of .670. Metacognitive skills were measured using the Metacognition Awareness Instrument (MAI), which consists of 40 items. The questions declared valid were tested for validity with a very high reliability of .953 for 37 items, and only three items were invalid. The ability to express an opinion was measured with an observation questionnaire validated by experts with a valid instrument score. Data analysis was performed by path analysis using the SmartPLS software. The results showed that the Li-Pro-GP blended learning model significantly strengthened students' metacognitive skills, critical thinking, and opinion formation.

Keywords: *Blended Li-Pro-GP learning model, critical thinking, metacognitive skills, opinion expression.*

Introduction

People's literacy level is closely related to the nation's quality (Permatasari, 2015; Rintaningrum, 2019). Literacy can be an indicator of a nation's quality of education and human resources (Winata et al., 2016). Good literacy skills affect the development of each individual's thinking ability. Mastery of literacy skills is an important indicator to improve the achievements of the younger generation (Allen & Kelly, 2015; Joynes et al., 2019). Reading literacy is one form of literacy. Literacy is related to metacognitive skills (Banat & Pierewan, 2019; Garcia, 2021; Karbalaei, 2011; Tajalli & Satari, 2013), critical thinking (Aloqaili, 2012; Hidayati et al., 2020; Mahfi et al., 2020), and expressing an opinion (Afifuddin, 2017; Philippakos, 2017).

One of the problems we face today is the low literacy of Indonesian students. Based on the results of the Program for International Student Assessment (PISA) published in 2018 by the Organization for Economic Cooperation and Development (OECD), it is known that the average score of Indonesian students in reading literacy is 371, which is 74th out of 80 countries (Febriana, 2021). In response to the low reading literacy, the Indonesian government is trying to increase interest in reading and literacy by promoting the school literacy movement (SLM) program.

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The SLM begins at the elementary to high school level (Marmoah et al., 2022; Setiyadi, 2018; Yulianto et al., 2018). Implementing the SLM program in Indonesia varies widely. According to Widayoko et al. (2018), the SLM is doing well in schools, but some improvements in implementation are needed. Improvements suggested by respondents to stakeholders include discipline in implementation, additional time allocation, and the addition of the latest book collection. According to Ichsan (2018), implementing the literacy movement in schools encountered several obstacles, such as very low equipment and infrastructure, no maximum support from the regional education office, the lack of reading books suitable for children, and the lack of a specific schedule. This was also noted by Al-Mutmainnah et al. (2017) regarding the obstacles in implementing the SLM, which include the lack of response from students and the lack of participation from parents, alums, and the community.

The SLM is also expected to develop aspects of students' metacognitive skills, critical thinking, and opinion expression. Students' metacognitive skills develop from their knowledge and the arrangement of their knowledge. This arrangement of knowledge leads to students' problem-solving strategies and skills. Students' metacognitive skills also play an important role in activities that affect students' cognitive abilities, such as understanding, communication, attention, memory, and problem-solving skills (Harta, 2019). Unfortunately, according to Rizkiani and Septian (2019), students' metacognitive skills in Indonesia are at a level they cannot reach and at a critical level. The level cannot mean that students cannot separate what they think and how they think, and the risk level means that students do not seem to be aware of thinking as a process.

The metacognitive skill has become an essential component of learning in the 21st century (Miharja et al., 2019). The research findings of Rahmat and Chanunan (2018) show that students in Indonesia have low ability for self-control. Low self-control ability in the thinking process means that students have low metacognitive skills closely related to learners' self-regulation. In addition, the teacher-centered learning approach is considered to be an approach that cannot develop various abilities of students, including metacognitive skills. Consistent with the opinion of Darmawan et al. (2020), students' metacognitive skills in Indonesia are low. Few teachers know the importance of metacognitive skills and how to apply them in the classroom. Unlike Indonesia, Sungur and Yerdelen (2011) found low metacognitive skills in most Turkish secondary school students. This finding indicates that an innovative learning model is needed to improve students' metacognitive skills.

In addition to metacognitive skills, 21st-century learning requires students to think critically. Critical thinking skills are essential for students because they enable them to solve problems in difficult situations (Basri et al., 2019). Students' necessary thinking skills in subject areas are still low (Syahrial et al., 2019). In Indonesia, the growth of low-level thinking is still very dominant. Learning in the 21st century needs to bring about a change in mindset that includes teaching processes such as moving from abstract to real and factual contexts for critical thinking skills (Abdurrahman et al., 2019). Consistent with the opinion of Saido et al. (2015), the main component of the current mindset shift is that science education needs to shift from Lower Order Thinking Skills (LOTS) to High Order Thinking Skills (HOTS). Research by Bustami et al. (2018) has shown that learning in secondary schools in Indonesia is still done through conventional learning, such as textbooks, and is teacher-centered, which leads to a passive attitude. As a result, students' critical thinking skills do not develop well. Students' low critical thinking ability is due to passive learning (Wulandari et al., 2015).

The ability to think critically is a strength and source of energy in a person's social and personal life. Critical thinking skills can provide students who complete their formal education with a tool to analyze various problems they will face in their daily lives (Brookhart, 2010; Darling-Hammond et al., 2020; Papathanasiou et al., 2014). Critical thinking skills are related to metacognitive skills. Students who have metacognitive skills can organize and control their learning activities. Self-controlling activities may pose questions for students to answer and for students self-assess. The higher the metacognitive skills, the higher the critical thinking skills (Malahayati et al., 2015). Critical thinking skills are related to metacognitive skills. Students who have metacognitive skills can organize and control their learning activities. Self-controlling activities may pose a question for students to answer and evaluate the students themselves. The higher the metacognitive skills, the higher the critical thinking skills (Rahmatina et al., 2014).

A person is intelligent not only because they can deal with the issues at hand but also because they can communicate their opinions to others effectively and appropriately (Idrus et al., 2009). However, the research showed that students' ability to express their opinions in lectures and daily interactions is still considered low. As a result, students become passive (Setyarini et al., 2018). Following the idea that students have obstacles to expressing their opinions in learning activities, the low ability and courage to express opinions are caused by the fact that lecturers more often use the lecture method in teaching the lecture material. Hence, students are less active in learning activities (Syarifudin & Sulistyaningrum, 2015).

Students are also required to be able to express their opinions effectively. A person has the intelligence to express an opinion not only because they can address the problems at hand but also because they can communicate well and effectively with others (Bambaeeroo & Shokrpour, 2017). Effective communication can be achieved when both communicators perform their roles well.

Regarding the quantity of prolonged communication with others, the ability to express opinions is considered one of the most critical factors for success (Hyland-Wood et al., 2021; Razak et al., 2019; Shakeri & Khalilzadeh, 2020). Therefore, the ability to express opinions must be familiarized and instilled in students during the learning process by selecting learning models that encourage students to ask questions or express opinions during learning activities.

Previous studies show, in part, various efforts to improve metacognitive skills, critical thinking, and opinion formation through learning models. For example, various learning models focused on metacognitive skill development include music learning and performance (Concina, 2019), the problem-based learning and blended learning model (Yuan et al., 2020), the social learning model (Mahmud, 2017), the contextual learning model (Ahdhianto et al., 2020), the problem-based learning model (Trisnawati et al., 2020), and the CORE model (Fisher et al., 2017). Several learning models for developing critical thinking include Critical inquiry-based learning (Prayogi et al., 2018), Discovery Learning Model and Contextual Teaching (Alhakim et al., 2018), Ricosre Learning Model (Sari et al., 2018), and problem-based learning model (Nurhayati et al., 2021). The learning model used to develop thinking skills is ECIRR learning (Pahrudin et al., 2020) and problem-based learning (Cahyono et al., 2022). No learning model is designed to develop these three skills simultaneously (metacognitive skills, critical thinking, and opinion expression). Thus, an appropriate and effective model is needed.

In 2020, we developed the project- based literacy that integrates the school literacy movement strengthening character education (literasi berbasis proyek terintegrasi GLS dan PPK: Li-Pro-GP) Learning Model, a project-based learning model that integrates with the SLM and Strengthening Character Education (SCE). With the Li-Pro-GP learning model, students are expected to have a literacy culture and form a person of character and national culture (Pantiwati et al., 2020). Character education serves as a pathfinder to create the nation's next generation that is not only smart and good but also focuses on the moral development of a country (Dalyono & Lestariningsih, 2020). The Li-Pro-GP model should educate cognitively and characteristically superior students. Therefore, the purpose of this study was to analyze the effects of the blended Li-Pro-GP learning model on metacognitive skills, critical thinking, and opinion expression. The implementation of the Li-Pro-GP learning model is in a blended manner, considering that during the COVID-19 pandemic, schools implemented blended learning (Adel & Dayan, 2021; Cahyono et al., 2022; Pahrudin et al., 2020; Santoso et al., 2020; Singh et al., 2021; Topping et al., 2022).

Examining the effect of the Li-Pro-GP learning model (stands for Project-Based Literacy in the Integrated School Literacy Movement Strengthening Character Education) in a blended way will provide an overview of the learning model's implementation on students' metacognitive skills, critical thinking, and opinion expression. The effectiveness of the Li-Pro-GP model can serve as a reference and foundation for implementing the model in schools. The Li-Pro-GP model can be widely applied in schools based on the results and evidence of the effectiveness of this study.

Methodology

Research Design

This study is pre-experimental research with a one group pretest-posttest design as described by Bossuyt et al. (2015). In accordance with this design (Table 1), this study involved one class which was treated with the Li-Pro-GP learning model (symbolized as X in Table 1). Before the class applied Li-Pro-GP, a pretest was conducted (O_1) to measure the students' initial competence. Furthermore, after the learning model was applied, a posttest (O_2) was conducted to measure the final competence of students.

Table 1. Research Design

Design	O_1 X O_2

The application of Li-Pro-GP learning was carried out in the experimental class with the basic competencies in curriculum 3.3 explains the concept of mixtures and single substances (elements and compounds), physical and chemical properties, and physical and chemical changes in everyday life and basic competencies 4.3 presents the results of investigations or work on the properties of solutions, physical and chemical changes, or the separation of mixtures in a blended manner. The implementation of blended learning in the research sample of 30 students was carried out as follows: The class was divided into two groups: Group A with 15 students and Group B with 15 students. If group A used online learning, then group B used offline learning. Thus, groups A and B took turns learning online and offline.

The integration of literacy activities manifested the SLM program in the habituation, development, and learning stages through 15-minute reading activities, responding to enrichment books, and using enrichment books and reading strategies in all subjects. At the same time, SCE was integrated through curriculum, classroom management, selection, and learning methods. Each learning step reflected the activities integrated into character education (Figure 1). The integration of SLM and SCE is packaged in project learning with the following syntax.

1. The first syntax determines the fundamental question

Learning occurred online for groups A and B, beginning with students taking the pretest. Then, lesson plans were presented for some time in the future, and basic questions were asked about the material of the elements and compounds and the project activities that would be carried out. Outside the meeting, students discussed with their group friends the project plans to be carried out in the next meeting.

2. The second and third syntax design project activities and schedule project activities

In this stage, Group A students learned offline in a class by submitting plans for project activities on elements and compounds with lab plans. In addition to the project plans, students discussed the timeline for completing the project activities. Meanwhile, Group B students conducted online learning activities by submitting the results of the discussions on the project activities to be conducted next week in the discussion column of Google Classroom. In addition, the students of Group B studied independently with the provided modules to prepare for the project activities in the next meeting.

3. The fourth syntax monitors project activities

Group B students learned offline to complete the project activities through practical activities on elements and compounds, followed by writing a strength report, while Group A learned independently online using the provided modules. When conducting the practicum, the teacher monitored the project activities during the activity.

4. In the fifth syntax, the project results are presented

In this stage, students presented and showed the results of the project activities while the teacher and other students gave feedback.

5. The sixth syntax is the evaluation

The final activity is to assess students' critical thinking and metacognitive skills through a post-test. The assessment of opinion expression was evaluated by observation during the learning activities and by monitoring the results of the online class video recordings.
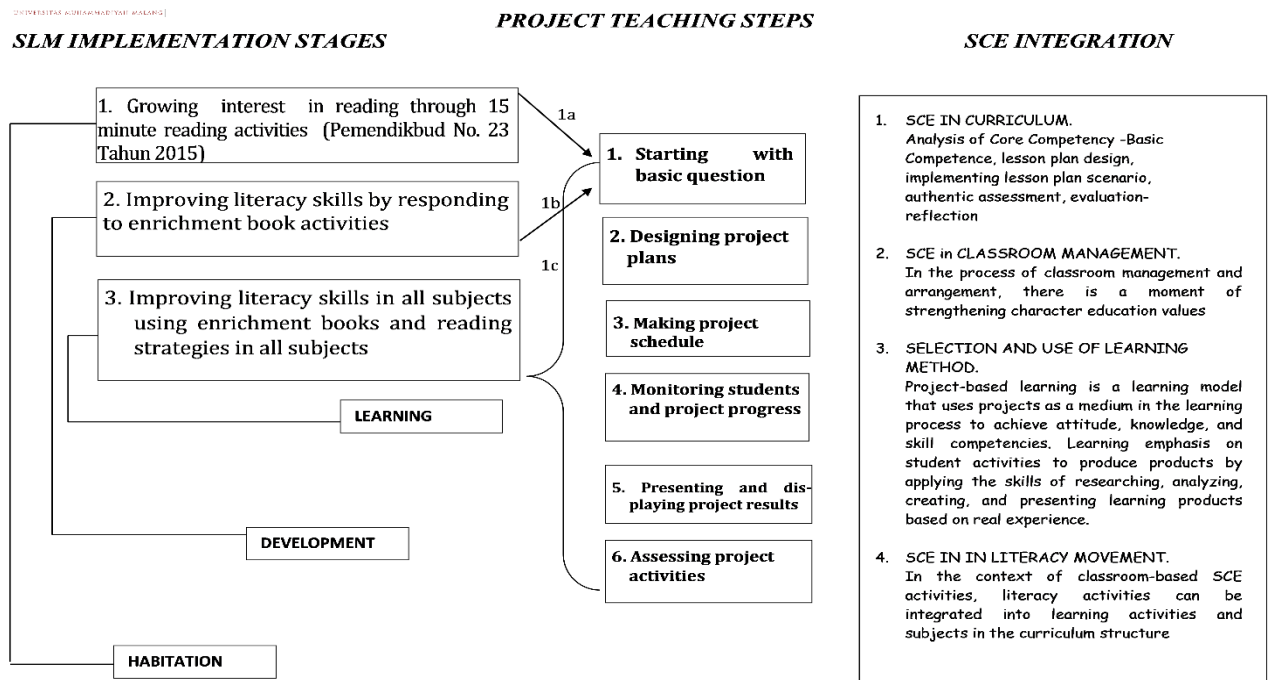

Figure 1. Li-Pro-GP Learning Model Syntax (Pantiwati et al., 2022)

Research Variable

The exogenous variables are the Li-Pro-GP learning model, while the endogenous variables are metacognitive skills, critical thinking, and opinion expression. The path analysis diagram shows the effects of the Li-Pro-GP learning model (X1) on critical thinking skills (Y1), metacognitive skills (Y2), and opinion expression (Y3) (Figure 2).

Sample and Data Collection

The participants of this study are seventh-grade students of SMPN 23 in Malang. The sampling was conducted using saturation sampling, including all population members. Saturation sampling is a method performed when all population members can be used as the research sample; this mechanism is undertaken when the population is small, at least less than 30. The sample of this study consisted of 30 students representing the whole population based on their characteristics or character traits. The characteristics of the research sample are VII students aged 12 to 13 years old, the SES is classified as low, and the achievement was provided by selecting the new students at SMP Negeri 23 Malang City.

The variables measured were critical thinking, metacognitive skills, and opinion expression, with the measurement of each variable twice, namely pre-test and post-test. Critical thinking ability was measured by giving students an essay test, then determining the score using the Critical Thinking rubric modified from Marguerite and Ennis (1993). The essay questions were adapted from aspects of critical thinking skills, namely, giving simple explanations, building basic skills, making conclusions, giving further explanations, and making judgments about integration. The critical thinking questions consisted of five question items. The critical thinking questions used were validated by material experts who assessed the material aspects and by assessment experts who assessed the construct and language aspects. The results of the validation by the material expert were rated 3.7, which means that the instrument's validity was given. In contrast, the assessment expert received a score of 3.7, i.e., the instrument's validity was valid (Setyo et al., 2020).

The declared valid questions were tested for item validity and reliability using the software IBM SPSS 27. For the test of item validity, the Pearson product-moment correlation test was used. The value of the r-table in the test of item validity used r-table df-2 with a significance level of 5% (Yusup, 2018). The number of trial samples was 16, so the value of df = 16-2 = 14. R-table 14 was .4259. The results showed that five of the five tested questions were declared valid. Five questions declared valid were followed by a reliability test using Cronbach's alpha. The analysis results showed that the questions' reliability was .670, which corresponds to a high degree of reliability (Sumardi, 2020).

The MAI was adapted from Schraw and Dennison (1994) with eight indicators, and 40 items were used to measure metacognitive skills (Asy'ari et al., 2018). Experts validated the adapted MAI instrument. Two experts validated the construct, content, and language assessment aspects. The validation scores for the first expert were 3.95, and for the second expert, 3.9. Hence, the average expert validation scores for the metacognitive measures were 3.95, i.e., the instrument's validity level was very high (Setyo et al., 2020). The questions found to be valid were tested for item validity and reliability using the software IBM SPSS 27.

The measurement of the ability to express an opinion was done by observation when students discuss, i.e., using the indicators of the ability to express an opinion according to Ashari and Dwiningsih (2015), which were modified. When students discuss, a recording is made so that the data collection is also equipped with observation and video analysis. Experts validated the observation sheet used in the study, and two experts validated aspects of the construct, language, logical, and analytical assessment. The validation results for the first expert received a score of 4.2. For the second expert, a score of 3.84, so the average expert validation results received a score of 4, which means the validity level of the instrument was valid (Setyo et al., 2020).

Analyzing of Data

In the data analysis, the path analysis model was used to analyze the relationship pattern between the independent variables X1: Li-Pro-GP learning model on the dependent variable Y1: critical thinking, Y2: metacognitive skills, and Y3: opinion expression. The goal was to determine the direct and indirect effect between the independent variable (exogenous) on the dependent variable (endogenous). Data analysis using path analysis was an extension of regression analysis, which can estimate the relationship between Y1, Y2, and Y3 as the independent and dependent variable X1 (Figure 2). Testing of path analysis was performed using SmartPLS software. The path analysis using SmartPLS began with entering the data into Microsoft Excel and the data in the format CSV UTV, entering the data into the SmartPLS application, creating a link line according to the hypothesis in Table 1, and fitting the link line to the hypothesis, then running the tests using the PLS algorithm menu and bootstrapping.
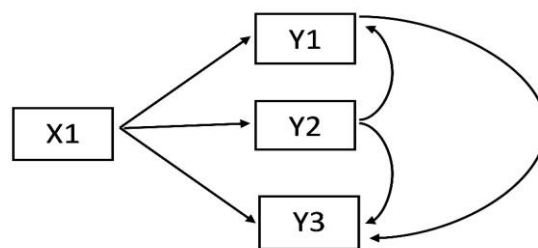

Figure 2. Path Analysis

Description:
X1   : Li-Pro-GP learning model
Y1   : Critical thinking
Y2   : Metacognitive skills
Y3   : Opinion expression

Results

The test results in Table 2 gave a *p-value* of .004 <.05. Since the *p-value* is less than .05, there is a significant effect between X and Y1. Thus, from the test results, it can be concluded that the Li-Pro-GP learning model influences students' critical thinking. In addition, the test results in the table showed a *p-value* of .000 <.05; since the *p-value* is less than .05, there is a significant effect between X and Y2. Thus, the test results show that the Li-Pro-GP learning model influences students' metacognitive skills. Finally, the test results in Table 1 showed a *p-value* of .0273 <.05. Since the *p-value* is more minor than .05, there is a significant effect between X and Y3. Thus, from the test results, it can be concluded that the Li-Pro-GP learning model influences students' thinking abilities.

Table 2. Regression Test Results

Direct influence	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	t statistics (|O/STDEV|)	p-values
X -> Y1	.482	.505	.169	2.856	.004
X -> Y2	.898	.905	.034	26.079	.000
X -> Y3	.123	.150	.112	1.098	.0273

The test results in Table 3 show that the value of R-squared Y1 is .882, or 88.2%. This result shows that the Li-Pro-GP learning model influences 88.2% of students' critical thinking. In addition, the test results in Table 2 show that the value of R-square Y2 is .807, or 80.7%; it can be concluded that the Li-Pro-GP learning model has an influence of 80.7% on students' metacognitive skills. Finally, the test results are in Table 2. The value of R-square Y3 is .902, which means that the Li-Pro-GP learning model has an influence of 90.2% on opinion formation.

Table 3. R Square Test Results

	R square	R square adjusted
Y1	.882	.873
Y2	.807	.800
Y3	.902	.900

The results of the path regression test for variables X, Y2, and Y1 to Y3 in Table 4 gave a *p-value* of .010 <.05. Since the *p-value* is less than .05, there is an indirect effect of variable X on Y3 through Y1 and Y2. Therefore, it can be concluded that the Li-Pro-GP learning model influences students' opinions through critical thinking and metacognitive skills. In addition, the test of X and Y2 on Y1 in Table 3 yielded the *p-value* of .009 <.05. If the *p-value* is less than .05, then there is an indirect effect of X on Y1 through Y2. Therefore, it can be concluded that the Li-Pro-GP learning model influences students' critical thinking about metacognition.

Table 4. Path Regression Test Results

Indirect influence	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	t statistics (|O/STDEV|)	p-values
X -> Y2 -> Y1 -> Y3	-.422	-.406	.164	2.571	.010
X -> Y2 -> Y1	.433	.413	.164	2.640	.009

Discussion

Li-Pro-GP Learning Model

Results showed that the SLM and SCE project-based integrated literacy model (Li-Pro-GP) influenced metacognitive skills, critical thinking, and opinions (Table 2). The Li-Pro-GP learning model is a project-based learning model linked to SLM and SCE in an integrated manner (Pantiwati et al., 2020). The foundation of this learning model is a project learning model. Project learning provides an excellent opportunity for students to have a more interesting and valuable learning experience (Rati et al., 2017). In implementing the Li-Pro-GP learning model, project learning is integrated with SLM and SCE activities (Figure 3).
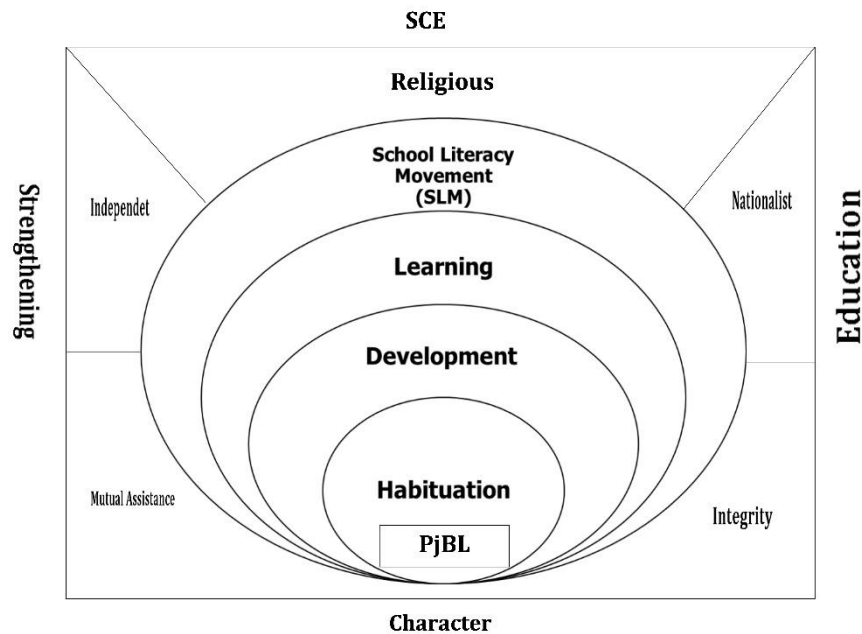
Figure 3. Li-Pro-GP Learning Model (Pantiwati et al., 2022)

Critical Thinking

The Li-Pro-GP learning model significantly impacts students' critical thinking skills (Table 2) with a magnitude of influence of 88.2% (Table 3). The Li-Pro-GP learning model integrates activities and processes of literacy and scientific literacy. Scientific literacy is related to critical thinking skills, and critical thinking is an inseparable part of scientific literacy (Sadhu et al., 2019; Sasson et al., 2018). Rahayuni (2016) showed a direct correlation between scientific literacy and students' critical thinking skills. Science education-based education grows individuals who have creativity, can think critically, and can solve problems (Septiani et al., 2019; Vieira & Tenreiro-Vieira, 2016). Unlike Widayati (2004) research, literacy culture can influence students' critical thinking skills. Literacy culture enables students to address an issue after reading and listening to a story or information.

In addition to literacy, this learning model employs project-based learning. Students who receive a project-based learning pattern tend to think more broadly. Project learning involves inquiry and problem-solving. By assigning projects, students are trained to analyze, synthesize, and critically evaluate a problem so that the culmination of this activity is that students can create a work (Insyasiska et al., 2015). Project-based learning makes learning more independent, improves critical thinking and analysis skills, and promotes interest in learning (Susanti, 2017).

The study's results indicate that this learning model significantly influences critical thinking skills; this influence cannot be separated from the integrated character education in this learning model. The role of character education in the Li-Pro-GP learning model reflects the importance of character in supporting students' success in academic and social life (Sulthon et al., 2021). Strengthening character in learning helps students better shape their personality in life (Karneli & Hasan, 2019). The problems students face automatically lead to different analyzes to solve the problems they face. So, this is what will shape the character of critical students (Dwi Apriliyanto & Sholeh, 2019).

Metacognitive Skills

The Li-Pro-GP learning model significantly impacts students' metacognitive skills (Table 2), with an effect of 80.7% (Table 3). This result is consistent with Lukitasari et al. (2021) research that project learning can improve students' metacognitive skills. Rahmawati and Haryani (2015) believe that students' participation in the project-based learning process influences students' level of understanding and metacognitive skills. Project-based learning trains students to control the learning process and organize their thoughts in solving a problem until they proceed to produce a work or product (Arifa et al., 2018).

Implementing Li-Pro-GP, the learning model emphasizes students' scientific literacy. Scientific literacy is necessary for meaningful learning because it enables engagement in students' cognitive and metacognitive processes (Cavagnetto, 2010). Fajar and Putri (2020) research shows that high science literacy influences metacognitive skills, which is also high. Interest in reading and writing is related to metacognitive skills. Research findings from Setiawan and Dores (2019) study show a significant relationship between metacognitive skills and science literacy, as literacy can improve predicting, planning, monitoring, and evaluation skills. Literacy can improve skills so students can assimilate, process, and communicate well (Chasovy & Asrizal, 2019).

The results show that integrating character education into this learning model affects students' metacognitive skills. Consistent with Zubaidah (2019) research, learning activities combined with character education, such as inquiry, design, or performance, may exhibit metacognitive characteristics in students related to reflection or process. This finding is corroborated by Tri and Karana (2022) that using responsible character values enhances metacognition, critical thinking skills, communication, life and career skills, and the ability to use information, media, and technology.

Opinion Expression

The results also show that the Li-Pro-GP learning model significantly affects students' ability to express themselves 90.2% (Table 3). This learning model is based on project learning and requires students to be active in every learning opportunity (Kanza et al., 2020). Soto et al. (2018) demonstrated that students learn to make real-world decisions in different environments by completing a project through project learning. Project assignments encourage students to express their opinions about their findings to the class. Expressing an opinion is a skill that plays an important role in many aspects of life. This skill is needed in various aspects of life, both at work and in society (Syarifudin & Sulistyaningrum, 2015). By expressing an opinion, one can express an idea or thought that could be a solution to a problem (Firdaus, 2012).

School literacy in the context of SLM refers to the ability to grasp, understand, and use things intelligently through various activities such as reading, seeing, listening, writing, and speaking. In this case, school literacy also refers to students' communication skills because literacy is related to knowledge, language, and culture (Tabroni et al., 2022). In SLM activities, students can express their opinions when speaking in front of the class to build students' confidence in literacy activities. Students' expression of opinion can appear in their use of vocabulary and their courage to express their opinions during learning activities (Lau et al., 2019).

Integrating character reinforcement into this learning model influences students' thinking abilities. This result is consistent with Lisa et al. (2018) opinion, which indicates that opinion expression can be developed as part of the learning that leads to character development. By expressing their opinions, students can build new knowledge by transforming the knowledge taught by the teacher. In line with Santika and Sudiana (2021) opinion that character values are taught in learning, students are expected to understand and apply character values when they express their opinions politely and courteously.

In addition to the learning model significantly influencing critical thinking, metacognitive skills, and opinion expression, blended learning plays an important role in applying the learning model. This finding is consistent with Balci and Soran (2009) findings that blended learning is a fun and adaptable learning method for different situations and conditions. It is consistent with the findings of Suana et al. (2020) that the use of technology in blended learning enhances cognitive and metacognitive skills and creativity and that students are more active and critical thinkers.

Conclusion

The Li-Pro-GP learning model is a project-based learning model that integrates with SLM and SCE. With the Li-Pro-GP learning model, students are expected to have a culture of reading and writing and form a person of character and national culture. Through this learning model, students are expected to develop who are above average in thinking and skills, literate, and have appropriate character. The application of the blended Li-Pro-GP learning model has a significant effect on students' critical thinking skills, metacognitive skills development, and express an opinion. The ability to think critically, develop metacognitive skills, and express an opinion is the skill students must possess in today's learning. At the same time, the path analysis regression test results between critical thinking and metacognitive skills indirectly affect the median variable for critical and metacognitive skills.

Recommendations

The results show that Li-Pro-GP learning influences students' critical thinking, metacognitive skills, and opinions. The teacher can implement the results of this study in the classroom. Teachers can apply Li-Pro-GP learning to students' metacognitive skills, critical thinking, and opinion formation. For further research, the Li-Pro-GP learning model can be applied to other learning materials, or future researchers can use other variables related to 21st-century skills. Finally, for further research, it is possible to implement this learning model in a larger number of student groups.

Limitations

Regardless of the study's results, one cannot separate oneself from the study's limitations. The study applies the Li-Pro-GP learning model to metacognitive skills, critical thinking, and opinions. The limitation of the study lies in the number of student groups. The limitation of this study is the number of students in this study. The Li-Pro-GP learning model was applied to only one group of 31 students. Although the number of students was 31, this study was conducted according to the procedures and as much as possible.

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Authorship Contribution Statement

Pantiwati: Creating concept of article based upon research findings and supervising all activities, from manuscript writing to publication. Permana: Analyzing research data. Kusniarti: Editing manuscript. Nurrohman: Converting design and concept of article into manuscript. Sari: Designing article and writing manuscript based on fixed design and concept.

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