



The Effect of The Process oriented Guided Inquiry Learning (Pogil) Learning Model on Social Literacy Abilities

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Abstract

This study aims to investigate the effect of the Process Oriented Guided Inquiry Learning (POGIL) model on students' social literacy abilities. The background of this research is the increasing need for students to develop social literacy skills, which encompass critical thinking, communication, empathy, and active participation in societal issues. Traditional teaching methods often fail to foster these skills, thus hindering students' ability to engage with social challenges. POGIL, an inquiry-based learning model, emphasizes active student participation and collaboration, making it a promising approach for enhancing social literacy. This research employed a pre-experimental design with a one-group pretest-posttest design to evaluate the effectiveness of POGIL in improving social literacy. The sample consisted of second-grade elementary school students. Data were collected through pretest and posttest assessments, along with observational checklists. The results indicated a significant improvement in students' social literacy abilities after the implementation of POGIL. The average score of social literacy increased from 36.3% in the pretest to 86.8% in the posttest. This suggests that the POGIL model is effective in enhancing students' understanding of social issues, their ability to empathize, collaborate, and communicate effectively in social contexts.

Keywords: POGIL, Social Literacy Skills

Abstrak

Penelitian ini bertujuan untuk menyelidiki pengaruh model *Process Oriented Guided Inquiry Learning* (POGIL) terhadap kemampuan literasi sosial siswa. Latar belakang penelitian ini adalah meningkatnya kebutuhan siswa untuk mengembangkan keterampilan literasi sosial, yang meliputi berpikir kritis, komunikasi, empati, dan partisipasi aktif dalam isu-isu sosial. Metode pengajaran tradisional sering kali gagal mengembangkan keterampilan ini, sehingga menghambat kemampuan siswa untuk terlibat dengan tantangan sosial. POGIL, model pembelajaran berbasis penyelidikan, menekankan partisipasi dan kolaborasi siswa secara aktif, menjadikannya pendekatan yang menjanjikan untuk meningkatkan literasi sosial. Penelitian ini menggunakan desain pra-eksperimental dengan desain pra-tes-pasca-tes satu kelompok untuk mengevaluasi efektivitas POGIL dalam meningkatkan literasi sosial. Sampel terdiri dari siswa sekolah dasar kelas dua. Data dikumpulkan melalui penilaian pra-tes dan pasca-tes, bersama dengan daftar periksa observasi. Hasilnya menunjukkan peningkatan yang signifikan dalam kemampuan literasi sosial siswa setelah penerapan POGIL. Skor rata-rata literasi sosial meningkat dari 36,3% pada pra-tes menjadi 86,8% pada pasca-tes. Hal ini menunjukkan bahwa model POGIL efektif dalam meningkatkan pemahaman siswa terhadap masalah sosial, kemampuan mereka untuk berempati, berkolaborasi, dan berkomunikasi secara efektif dalam konteks sosial.

Kata Kunci: POGIL, Kemampuan Literasi Sosial

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Introduction

The process-oriented guided inquiry learning (POGIL) model is a learning model that is considered to meet the requirements of the science literacy component. The POGIL learning model is an alternative model whose learning is focused on students (student center). This POGIL learning model was created with the intention and purpose that students can be directly and actively involved in study group activities (Ikhwan, 2022: 131). Yuliani (2017: 117-123) states that one of the process-based inquiry learning models is the process-oriented guided inquiry learning (POGIL) model. The POGIL learning model is one part of the inquiry learning model, especially in guided inquiry that is oriented towards the process. This model is designed to facilitate inquiry teaching and learning activities (Rustam, 2017: 33). POGIL emphasizes content and process, so it requires process skills, including science skills and also an understanding of it.

The two main objectives of the POGIL approach are: (1) Increasing mastery in learning through students' own understanding, (2) Increasing learning skills such as information processing, critical thinking, problem solving, oral and written communication, metacognition, and assessment (Richard and James: 2008: 3). In POGIL learning activities, teams work to build understanding and problem solving through guided inquiry. This makes the POGIL learning model important to implement.

The learning process includes developing the ability to obtain, acquire, produce, and apply knowledge, which makes it important. In the POGIL learning model, students are encouraged to actively participate, analyze data, draw conclusions, collaborate with groups to achieve conceptual understanding and problem solving, and think about something they are learning. They also improve their performance by interacting with teachers as facilitators (Elisabet et al., 2016: 899).

The latest data from the Program for International Student Assessment (PISA) shows that Indonesian students' reading literacy has declined. In PISA 2022, Indonesia's reading literacy score reached 359 points, down 12 points compared to PISA 2018 which reached 371 points. This decline was also recorded compared to the reading literacy score in 2000 which reached 371 points. However, Indonesia's ranking in reading literacy increased by 5 positions compared to PISA 2018. In addition to reading literacy, Indonesia's mathematics and science literacy also declined in PISA 2022. Data from the Program for International Student Assessment (PISA) shows that social literacy is not measured separately in the PISA assessment. PISA focuses on three main domains: reading, mathematics, and science

literacy. However, social literacy can be understood as an individual's ability to understand, interpret, and participate in social practices that apply in society.

Social literacy is an individual's ability to understand, interpret, and participate in social practices that apply in society. Saomah (2017) explains that literacy involves the use of social, historical, and cultural practices in creating and interpreting meaning through writing. This requires sensitivity to the relationship between textual conventions and the context in which they are used, as well as the ability to reflect critically on these relationships.

Kern, as quoted by Bahrul Hayat and Suhendra Yusuf (2019), defines literacy as the ability to think and learn throughout life in order to survive in a social and cultural environment. In addition, McKenna and Robinson (2018) emphasize that literacy is a medium for individuals to be able to interact with their social environment, especially those related to writing skills. In the context of education, social literacy plays an important role in learning Social Sciences (IPS). Artia et al. (2023) highlighted that social literacy can facilitate children's understanding of various aspects of social life, history, culture, and geography. This shows that social literacy not only improves students' academic abilities but also forms the character and social skills needed to contribute positively to society.

Although social literacy plays an important role in education to build social awareness and sustainability, its implementation in the Indonesian education system is still limited. Many schools have not integrated social literacy into their curriculum, while the need to improve social literacy among students is very urgent considering global challenges such as climate change, inequality, and other social issues. Therefore, a learning model is needed that can improve students' social literacy effectively. The POGIL model, with its inquiry-based and collaborative approach, is expected to help students better understand social dynamics and contribute positively to society. This study aims to examine the effect of the Process Oriented Guided Inquiry Learning (POGIL) learning model on students' social literacy skills and social literacy skills after implementing the Process Oriented Guided Inquiry Learning (POGIL) learning model.

Method

The approach in this study uses a quantitative research method. The type of research used in the study is quantitative research with an Experimental method, namely Pre-Experimental Design. The research design used is One-Group Pretest-Posttest Design, this design contains a pretest before being given treatment. The population in this study were all

second-grade students at SD Anak Saleh, totaling 29 students consisting of 20 male students and 9 female students. The sample used in the study of the effect of the process oriented guided inquiry learning (POGIL) learning model on students' scientific literacy skills was 1 class.

In this study, the researcher used an instrument in the form of a student social literacy ability test (pretest and posttest). This social literacy ability test is a written test in the form of a description with a total of 10 questions, each of which contains indicators of social literacy abilities. This social literacy ability test aims to determine the social literacy abilities of second-grade students at SD Anak Saleh before and after the process oriented guided inquiry learning (POGIL) learning was held.

Result and Discussion

Based on the results of experimental research using a pre-experimental design of one group pretest-posttest design. The following data were obtained:

Table 1. Percentage Results of Each Indicator

No	Indicator	Pretest	Posttest
1	Students can recognize and understand simple social issues around them, such as the importance of sharing, respecting friends, and maintaining a clean environment.	33%	94%
2	Students can show respect for friends who have different cultural backgrounds, religions, or physical appearances.	44%	89%
3	Students are able to show empathy for friends who are experiencing difficulties, such as friends who are sad or sick.	33%	75%
4	Students are actively involved in social activities involving classmates, such as community service or group activities.	33%	94%
5	Students can speak politely and use positive words when interacting with friends, teachers, and others.	44%	89%
6	Students can resolve simple conflicts in a way that does not hurt other people's feelings and avoids violence.	33%	75%
7	Students understand the concept of responsibility in their social lives, both at home and at school.	33%	94%
8	Students can work together with their friends in groups to achieve common goals, such as completing assignments or playing in groups.	44%	89%
9	Students can follow simple social rules regarding time and place, such as lining up in an orderly manner or not talking when the teacher is talking.	33%	75%
10	Students begin to understand their role in groups and society, as well as how their actions affect others.	33%	94%
Average		36,3%	86,8%

In table 1 the average result for the pretest is 36.3% and for the posttest is 86.8%. This data shows a significant increase in students' social literacy skills after the implementation of the learning model. Based on the results of the pretest and posttest conducted, it can be concluded that the implementation of the Process Oriented Guided Inquiry Learning (POGIL) learning model has a significant effect on students' social literacy

skills. The average pretest score of students which only reached 36.3% indicates a limited understanding of social literacy, while the average posttest which increased to 86.8% indicates a very significant increase in students' social literacy skills after the implementation of the POGIL model.

The POGIL model, which emphasizes inquiry-based learning and active collaboration between students, has proven effective in helping students recognize social issues, empathize with friends, participate in social activities, and understand their role in society. The most striking improvement occurred in indicators such as recognizing social issues and actively participating in social activities, which increased from 33% to 94%.

Thus, it can be concluded that the POGIL model can be used as an effective method in improving students' social literacy, by helping them to better understand and actively participate in the social dynamics around them. This model allows students to learn more independently, collaborate, and think critically about social issues, which supports the development of their overall social competence.

In addition, the proof of the hypothesis by conducting a data normality test with a normality test first using the Shapiro-Wilk formula. The results of the study obtained, the value of the normality test on the pretest and posttest using Shapiro-Wilk. The normality test uses the Shapiro-Wilk formula with a significance provision of 0.05. Based on the data analysis, it is known that the significance value of the Pretest value is $0.415 > 0.05$ while the Posttest value is $0.820 > 0.05$. So, the research data is normally distributed. The pretest and posttest data are known to be normally distributed after the results of the data test that has been carried out. The histogram of the pretest and posttest normality tests can be seen in Figure 1 and Figure 2.

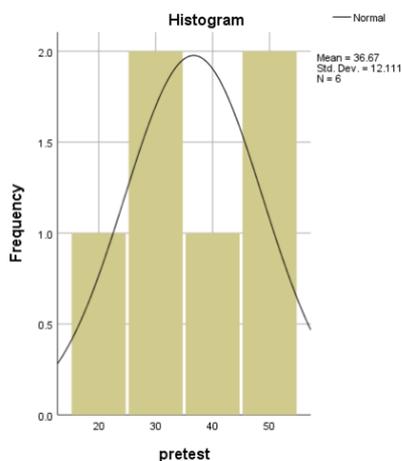


Figure 1. Histogram of Pretest Normality Test Results

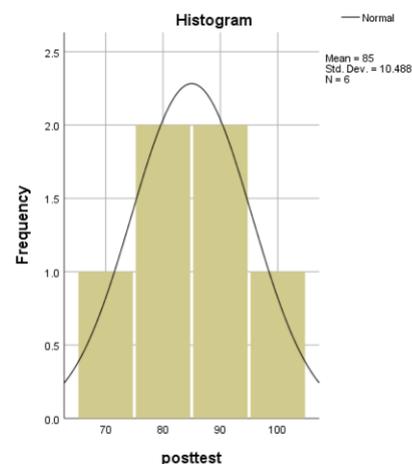


Figure 2. Histogram of Posttest Normality Test Results

After testing for normality, normal data was obtained. Furthermore, hypothesis testing used paired sample t-test using SPSS statistics. Based on calculating tcount and significance. Obtained -tcount -29.000 while the ttable value is 2.57058 so that the value of -tcount < ttable < tcount (-29.00 < 2.57058 < 29.00) then Ho is rejected. The results of the t test obtained a significance value of 0.000 < 0.05 so that Ha is accepted. Based on the results of decision making using tcount and significance, the conclusion of the research that has been done is that there is a difference after learning using the process oriented guided inquiry learning model on the science literacy skills of class II students at SD Anak Saleh.

The influence of the Process Oriented Guided Inquiry Learning (POGIL) learning model on students' social literacy skills

Based on the results of the study using a pre-experimental design with a one group pretest-posttest design, it can be seen that the implementation of the Process Oriented Guided Inquiry Learning (POGIL) learning model has a significant effect on students' social literacy skills. POGIL, which focuses on inquiry-based learning and active collaboration, has been proven effective in improving students' understanding of various social issues and other social skills. In table 1, there is a very significant increase in the pretest and posttest results for each social literacy indicator.

The average pretest score only reached 36.3%, indicating that students still have a limited understanding of social literacy. However, after the POGIL model was implemented, the average posttest score increased to 86.8%, indicating a very large increase in students' social literacy skills. The most striking increase occurred in the indicators of recognizing social issues and actively participating in social activities, which increased from 33% to 94%.

According to constructivist learning theory, which underlies POGIL, learning is more effective when students are actively involved in the learning process and given the opportunity to construct their own knowledge through experiences and social interactions (Johnson et al., 1998). The POGIL model supports this by engaging students in a learning process that leads to collaborative problem solving. This is in line with the concept of social literacy, which includes not only critical and analytical thinking skills, but also communication skills, empathy, and active participation in social life (Saomah, 2017). POGIL allows students to develop these skills in a more active and meaningful way.

In addition, inquiry-based learning in POGIL encourages students to explore social issues in more depth and find solutions collaboratively. This strengthens their social literacy skills, as they not only learn about social issues, but also how to interact and contribute to society. As their understanding of social issues increases, students' ability to resolve conflicts and work together in groups also increases, as seen in improvements in other indicators, such as respecting differences and empathizing with friends.

The results of the normality test using Shapiro-Wilk showed that the pretest and posttest data were normally distributed, indicating that the data obtained could be used for further statistical analysis. After conducting a paired sample t-test, the results of the study showed a significance value of 0.000, which was less than 0.05, so the Alternative Hypothesis (H_a) was accepted. This indicates that there is a significant difference between the pretest and posttest scores after the implementation of the POGIL model, confirming that the implementation of this learning model has a positive effect on improving students' social literacy skills.

Thus, it can be concluded that the POGIL model not only improves students' academic understanding but also strengthens their social literacy skills. This active and collaborative inquiry-based learning allows students to better understand social issues, develop empathy, participate in social activities, and work together to achieve common goals. Therefore, the POGIL model can be implemented as an effective method in improving social literacy at the elementary school level, especially at SD Anak Saleh.

Social Literacy Skills After Implementing the Process Oriented Guided Inquiry Learning (POGIL) Learning Model

Based on the results of the study conducted using a pre-experimental design and a one group pretest-posttest design, it can be seen that the application of the Process Oriented

Guided Inquiry Learning (POGIL) learning model has a significant impact on students' social literacy skills. As an inquiry-based learning model, POGIL emphasizes active learning that encourages students to engage collaboratively and reflectively in the learning process. This is very relevant to the goal of improving social literacy skills, which include critical thinking skills, communication skills, and active participation in social dynamics.

Improving Social Literacy Skills The results of the study showed a very significant increase in students' social literacy skills, with an average pretest score of 36.3% and a posttest score of 86.8%. The most striking increase occurred in the indicators of recognizing and understanding social issues and actively participating in social activities, which each increased from 33% to 94%. This indicates that students are better able to understand and apply knowledge about social issues after going through the inquiry-based learning model.

According to Hanson (2014), POGIL as an inquiry-based learning model helps students not only to remember information, but also to understand and apply knowledge in real social situations. Thus, POGIL encourages students to actively ask questions, find solutions together, and solve problems faced, both in academic and social contexts. This strengthens their social literacy skills, as they are trained to collaborate, share ideas, and interact with others effectively.

Relevance to Constructivist Learning Theory POGIL supports constructivist learning theory, which emphasizes the importance of hands-on experience in the learning process (Vygotsky, 1978). In the POGIL model, students are not only recipients of information, but also actively construct their knowledge through interactions with classmates and teachers. This active engagement allows students to develop critical thinking and effective communication skills, two key skills needed in social literacy. These improvements in skills are also reflected in the results of the study, where students were better able to empathize, speak politely, and resolve conflicts in a constructive manner after using the POGIL model.

Collaboration and Active Participation One of the social literacy indicators that experienced a significant increase was students' ability to collaborate and work together in groups. POGIL integrates collaborative learning, which allows students to help each other, share tasks, and solve problems together. For example, the indicator of working together in groups increased from 44% in the pretest to 89% in the posttest. This shows that the POGIL model is effective in teaching students how to collaborate and contribute to group activities, which are important aspects of social literacy.

Empathy and Social Responsibility Development In addition, indicators showing empathy towards friends and understanding social responsibility also experienced

significant improvements. POGIL encourages students to be more sensitive to their friends' feelings and work together to solve social problems. For example, the empathy indicator for friends increased from 33% in the pretest to 75% in the posttest. This increase reflects how POGIL not only develops academic skills, but also important social skills to interact positively with others.

Support from Social Literacy Theory Social literacy theory, as explained by Saomah (2017), emphasizes the importance of understanding social issues and the ability to actively participate in society. Social literacy refers not only to reading and writing skills, but also to the ability to analyze, communicate, and interact in a social context. By increasing student engagement in social activities, POGIL supports the development of a more holistic social literacy, which involves students in solving broader social problems.

Based on the research results and supporting theories, it can be concluded that the implementation of the POGIL learning model has been proven to have an influence in improving students' social literacy skills. This model not only improves students' academic understanding, but also strengthens essential social skills, such as collaboration, empathy, communication, and active participation in social activities. Therefore, POGIL can be integrated as an effective method to improve social literacy in elementary education.

Conclusion

Based on the results of the study using the Process Oriented Guided Inquiry Learning (POGIL) learning model on students' social literacy skills, it can be concluded that the application of this model has a very significant influence. Based on pretest and posttest data, there was a significant increase in students' social literacy skills, with an average pretest score of 36.3% and posttest 86.8%. The largest increase was recorded in the indicator of recognizing and understanding social issues and actively participating in social activities, which increased from 33% to 94%.

The POGIL model based on inquiry and collaborative learning has been proven effective in developing students' social skills, including critical thinking, communication, empathy, and cooperation. The constructivist learning theory underlying POGIL supports the understanding that learning that actively involves students in solving social problems can strengthen their social literacy. POGIL encourages students to engage in discussions, share ideas, and solve problems collaboratively, which increases their social awareness and interpersonal skills.

In addition, the results of the normality test and t-test showed that the research data were normally distributed and there was a significant difference between the pretest and posttest results, which strengthens the evidence that the implementation of POGIL can significantly improve students' social literacy. Therefore, it can be suggested that the POGIL model can be applied more widely in education to improve students' social literacy, strengthen their social skills, and prepare them to contribute positively to society.

Suggestion

Based on the findings of this study, several suggestions can be given to improve the implementation and understanding of Process Oriented Guided Inquiry Learning (POGIL) in the context of social literacy. First, it is suggested that the POGIL model be applied more widely in the classroom, especially in subjects involving social skills such as Social Studies (IPS) and Citizenship Education. Teachers need to be further trained to optimize the implementation of POGIL so that students can collaborate and actively participate in the learning process. In addition, the elementary education curriculum should integrate POGIL as an approach to develop not only academic skills but also students' social literacy. Second, in terms of theory, the results of this study open up space for the development of new theories regarding the relationship between inquiry-based learning and social literacy. Further research can explore other collaborative learning models that can also improve social literacy, such as Cooperative Learning or Inquiry-based Learning. Finally, it is suggested that further research be conducted with a more varied design, for example using an experimental design with a control group to obtain more comprehensive results. This research can also be expanded to see the long-term effects of POGIL on social literacy and its impact in a wider social context, including in schools with different social backgrounds. Thus, these suggestions aim to strengthen the implementation of POGIL in education and open up opportunities for further research in the field of social literacy.

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