Developing an experiment-based inquiry model to enhance students' creativity in writing

[1]Rosmita Ambarita*, [2]Jusrin Efendi Pohan
[1]English Education Department, Sekolah Tinggi Ekonomi Al Washliya Sibolga
[2]Indonesian Language Education Department, Universitas Prima Indonesia

*Corresponding Author
Email: rosa_ambar@yahoo.com

Abstract

The ultimate goal of learning writing skills in language education is for students to produce their own written work. Students are not merely passive recipients of writing instruction but active participants in the writing process. However, in practice, many students struggle to write different types of texts, such as argumentative, narrative, expository, and persuasive essays. This issue persists in writing education, as students often understand writing rules theoretically but face difficulties in applying them practically. The main objective of this research is to develop an inquiry-experiment model for teaching writing in high school. This research involved a research and development approach using the Plomp model, which consisted of the prototype stage, development stage, and evaluation stage. Throughout these stages, the design of student books, teacher books, and model books was carried out. The instruments used in this study included validation questionnaires, practicality questionnaires, effectiveness questionnaires, observation guidelines, and interview guidelines. *The sampling technique was carried out by purposive sampling by determining characteristics that are appropriate to the research objectives and problems. The sample for this research consisted of 40 students who were used as trials for the model developed. The data analysis technique carried out two activities, namely qualitatively and quantitatively. The results of this research show that the experimental-based inquiry learning model can make students creative in writing as seen from the results of students' writing which has varied according to the rules of good and correct writing. Apart from that, students' soft skills have increased, seen in communication and collaboration.*

Keywords: *experiments; inquiry; writing techniques; student creativity*

INTRODUCTION

Mechanical advancements have transformed learning designs and paradigms, leading to the development of metacognition (Werang al, 2023). Instructors do not merely convey cognitive aspects but also instill values in students (Wolomasi et al, 2019). They should continuously explore the challenges students face in learning and address them through writing (Athuman, 2017). Additionally, students are encouraged to work in groups and engage in discussions or collaborations to enhance their higher-order thinking skills (Lowry et al, 2006).

In addition, instructors need to develop students' psychological and cognitive processes to encourage them to reflect on their thoughts authentically (Yuvayapan and H. Bilginer, 2020). Learning materials should be designed in the form of text-based presentations that invite students to engage and collaborate in discovering the meaning within them (Woolfolk, 2011). Students are encouraged to identify the main ideas and content of the given readings, while teachers facilitate the construction of new knowledge based on students' abilities (Kucukaydin, 2017).

One of the essential skills students need to develop is the ability to write argumentative texts. This is because argumentation plays a crucial role in almost every profession (Wullur and Werang, 2020). Argumentation can be defined as an attempt to establish a better perspective than others or as a way of explaining an idea (Watson, 2018). The approach commonly used in teaching writing still relies on a conventional method, which often leads to varied responses (Maman et al, 2023).

However, becoming proficient in writing, especially in crafting argumentative texts, is a complex and lengthy process (Baykara & Aksu Ataç, 2021). Many students spend years learning to write, yet they still struggle to produce argumentative texts in real-life situations (Astuti et al, 2020; Atmazaki et al, 2021). Additionally, students need to master other language skills, such as linguistic and rhetorical competence (Amoah & Yeboah, 2021). In this regard, instructors must design models that align with students' needs and characteristics to ensure effective material delivery (Pohan, 2019).

The inquiry-based model allows students to watch Marvels, conduct experiments, and draw conclusions (Younis, 2017; Kareem, 2022). Additionally, students are encouraged to continuously ask questions about an object to facilitate scientific discoveries effectively, leading to the development of creative thinking skills(Haynes, 2014; Thomson, 2017). This inquiry-based learning model fosters a culture of discovery, enabling students to explore aspects of reality based on relevant theories. Theory serves as the foundation for uncovering new insights regarding the relationship between subject matter and real-world contexts (Chu & Chow, 2011).

Previous research findings highlighted the advantages of the inquiry-experiment model for both teachers and students, particularly in fostering literacy, developing scientific process skills, and enhancing learning activities—especially in understanding concepts (Adnyana et al, 2017). Unlike traditional models, this approach placed greater emphasis on monitoring and guiding students. Teachers and students focused on developing knowledge, skills, and attitudes based on students' abilities and real-world exploration through learning investigations (Nurkhairo et al, 2023).

Students' ability to analyze the discussed content was guided by a conceptual framework based on a fundamental hypothesis. The connection between what was learned and its application provided meaning in real life. Discovery strategies needed to be structured and comprehensive to ensure

consistent findings. Students' approach to discovery required systematic and measurable patterns to anticipate the complexity of the issue (Umami, 2008).

In this approach, the instructor acted as the expert in determining whether students were capable of discovery. Therefore, structured guidelines for scientific discovery were necessary in the field of learning to write argumentative texts, ensuring that instructors could teach students according to predetermined learning outcomes (Prichard and Bizo, 2006). To determine whether the inquiry-experiment model was successful, it was essential to design an appropriate evaluation method that assessed both the process and the final product created by students in a systematic, measurable, and objective manner (Spronken & Walker, 2010). The evaluation referred to here was an authentic assessment based on the students' written work. This meant that the teacher's assessment was not solely based on numerical scores but also on the students' ability to express ideas and their creativity in developing written content. Several types of authentic assessments were used to evaluate student writing, including performance assessments, product assessments, and portfolio assessments. Students were also required to self-assess their work before the instructor evaluated it at the end of the lesson (Ginsburg et al, 2006). This research aimed to develop an inquiry-experiment model for teaching writing in high school.

A teacher's individual approach to instruction, including in higher education as well as in elementary and secondary schools, provides students with strength and motivation. Teachers must possess appropriate attitudes, values, and behaviors to effectively convey positive beliefs. Gill (2017) defined a teaching approach as a personal teaching philosophy that includes a range of strategies and designs. Richards et al (2019) found that social and emotional learning competencies are integral to physical education requirements and must be taught from a young age. However, the majority of instructional approaches focus on secondary settings. Teachers can utilize the abilities-based approach and the individual and social responsibility model, as well as movement, clear instruction, and relevant discussion cases, to support social and emotional learning. The validity and reliability of research and its findings are crucial to demonstrate the quality of organizational studies (Hayashi et al., 2019). A collaborative assessment of the validity of an impact evaluation concerning a specific target population may be more beneficial.

METHOD
This research falled under the category of research and development, aiming to develop a product in the form of an inquiry-experiment learning model for high school students. The study focused on designing and refining an inquiry-experiment model to enhance students' writing skills, particularly in argumentative texts. The development model used in this research was the Plomp development model, which has been modified to meet specific needs.

This model was designed to facilitate the learning process and made it easier for students to compose argumentative texts. The research followed the Plomp & Nienke (2013), development model, which consists of three stages: preliminary research, development or prototyping, and assessment. The preliminary research stage included needs analysis, student analysis,

curriculum analysis, concept analysis, and defining learning objectives. The prototyping stage involved product design and validation, while the assessment stage consisted of product trials to determine its practicality and effectiveness (Atmazaki et al, 2023).

The Plomp development model was used because of its flexibility, allowing each step to be adapted to the specific characteristics of the research. This model consists of three main phases: the preliminary investigation phase, the design phase, and the test, evaluation, and revision phase. However, the implementation phase was not conducted due to researcher limitations. The Plomp development model can be summarized into three key phases: investigation, design, and evaluation. This initial phase focused on collecting data and planning the next steps. A needs analysis was conducted to identify essential elements for supporting writing instruction. Data collection involved interviews with English teachers and student questionnaires. The interview results indicated that both teachers and students struggled with textbooks due to the brevity of material explanations and example questions, making comprehension difficult. In addition to the needs analysis, researchers assessed students' learning challenges to identify obstacles that hinder their writing skills. This analysis was carried out by administering test questions related to writing skills, allowing researchers to pinpoint specific difficulties faced by students.

Second, the design phase. This phase aimed to plan solutions to the problems identified from initial investigations, resulting in the creation of an initial prototype design. Additionally, the instruments used in this research were developed. During this stage, researchers designed model books, teacher books, and student books. The first step involved designing a model book that contained activities and materials organized in syntax. The second step focused on designing a student book that provided writing learning material. The third step was the creation of a teacher's book, which contained instructions for guiding students through the learning activities.

Third, the evaluation phase. This phase consists of two main activities: validation and trial activities. Validation is conducted by material experts and design experts to assess whether the developed products are suitable for the next stage of testing. Two material experts were asked to evaluate and provide feedback on the three products. Validation activities required instruments such as material and media validation sheets, which were provided to the experts. The next step involved analyzing the results of the validation. If the analysis indicated that the products were valid without the need for revision, the next activity was the field trial. During this testing stage, students evaluated and responded to the three developed products. The purpose of this testing was to assess the practicality and effectiveness of the products, with students filling out questionnaires provided for this purpose. The trial took place at SMA Negeri 1 Medan City with a total of 40 students. The selection of this school was based on purposive sampling, ensuring that the students were enrolled at the high school level in Medan City, open to innovation, able to ensure good participation, and had sufficient facilities to support the research. The trial was conducted from January to February 2024, aligned with the high

school curriculum, allowing the adjusted inquiry-experiment model to be applied to writing instruction in the first semester. The research instruments used included questionnaires, observation sheets, and tests. The data analysis method employed descriptive analysis techniques to evaluate the validity, practicality, and effectiveness of the developed model.

RESULTS AND DISCUSSION
RESULTS

Product Validation Results

In formative assessments or during development, the validity of development products was measured by assessing products developed by experts. The assessments carried out by validators are related to instructional aspects and technical aspects to produce learning models with high quality content and structure. The results of the expert assessment of the experiment based inquiry learning model can be stated as follows.

Table 1. Inquiry-Experiment Model Validation Results

Rated Aspect	Validation Result (%)	Category
Content	91, 50	VeryValid
Language	90,55	Very Valid
Presentation	91,28	Very Valid
Layout	90,35	Very Valid
Average	90,92	Very Valid

Based on the table above, it shows that the experiment-based inquiry learning model is very valid. These results were obtained from expert validator assessments on aspect of content, language, presentation, and layout. These four aspects show that the opinion of experts states that the model developed is worthy of being tested in a trial class.

The validation test results in the table above show that the experiment-based inquiry model in the aspects of content, language, material and graphics is suitable for use based on expert assessment. This means that the model developed can activate students in writing by providing appropriate feedback. In terms of content, the score was 91.50, language was 90.55, presentation was 91.28, and graphics was 90.35, indicating that the experimental-based inquiry learning model was categorized as very high. The results of this validation really determine the practicality and effectiveness of a model. This is due to the ease of applying the model during field trials. If the validation value of the model is not good, then the ease and interest of teachers and students in implementing it will be affected.

There are some limitations this model needs to be repaired. Validation results and suggestions from expert validators are necessary product revisions were made. In the content section, revisions were made regarding the way the material is presented is specified so that it is easier for students to understand it. Revisions were also made from in terms of model structure, how to write in the model. Improvements too this is done in terms of product design, such as more attractive model book covers and student books.

After the validity test is carried out, a practicality test is carried out. Test the practicality of the model developed is carried out on teachers and learners. Analysis of the practicality of the model is seen based on the results of questionnaire analysis containing responses 40 students. Practicality assessment components the model consists of four components, namely ease of use components, components benefits, attractiveness components, and components clarity. The following are the practical results of the model shown in this table.

Table 2. Model Practicality Results by Students

No	Statement	Percentase (%)	Category
1	The inquiry-experiment model book is easy to understand.	90,57	Very practical
2	Inquiry-experiment model books can increase my passion for learning.	95,25	Very practical
3	The concepts explained in the model book really helped me understand properly.	90,45	Very practical
4	Learning outcomes in model books can be understood according to the indicators set.	96,15	Very practical
5	The use of model books can direct the concept of inquiry/discovery.	95,73	Very practical
6	This inquiry-experiment model book can be studied by students independently.	95,73	Very practical
7	The inquiry-experiment model book contains tips for finding meaning.	90,47	Very practical
8	The material in the model book can broaden students' insight.	91,46	Very practical
	Average	93,22	Very practical

Based on the practicality results above, it shows that the average percentage of questionnaires distributed to students is 93.22 which is categorized as very practical. The questionnaires given to students are then added up and adjusted to the practicality category. There are five validity and practicality criteria, namely invalid, less valid, quite valid, valid, and very valid (Ridwan, 2012). The following are the practicality criteria for the model.

Table 3. Model Practicality Criteria

No	Value	Criteria
1	81-100	Very High
2	60-80	High
3	40-60	High Enough
4	20-40	Low
5	0-20	Very Low

For each questionnaire that has been filled in by students, the researcher then adds up the scores and converts them into the table of practicality criteria above. Apart from that, the practicality of the model can be

obtained from teacher activities using experiment-based inquiry models in English language learning. Teacher activities can be seen from the grades obtained by filling in the observation/observation sheets provided by the researcher. Observation of teacher activities can be seen from teacher activities in the introduction, main and closing.

In the preliminary stage, observers assess teachers in conveying the use of models, assessment criteria, and motivating students. In the core activities, observers observe the teacher how to explain this model, give students the opportunity to ask questions, give students the opportunity to express the problems they face, check the results of students' work, distribute daily observation sheets, and observe students' attitudes. In the closing activity, observers provide an overall evaluation and provide feedback to students in the form of suggestions and comments on the students' work.

The instrument used to observe teacher activities is a teacher observation sheet consisting of 20 items covering three aspects of observation, namely introduction, main activities and conclusion. The assessment criteria are a Likert Scale with options of 5 (very practical), 4 (practical), 3 (quite practical), 2 (not Practical), and 1 (very impractical). To see the difference in the results of students' entries regarding the effectiveness of the two assessment models used, the Mann Whitney hypothesis test was used with the help of SPSS. The results of the model's effectiveness are described in table 4 below.

Table 4. Effectiveness of the Inquiry-Experiment Model

Test Statistics[a]

	Student's Result
Mann-Whitney U	71,500
Wilcoxon W	599,500
Z	-6,019
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Kelompok

Based on the results of the Mann Whitney test above, a basis for decision making can be made, (1) if the value of Asymp. Sig (2-tailed) < 0.05, then there is a significant difference, and (2) if the value of Asymp. Sig (2-tailed) > 0.05, so there is no significant difference. Therefore, the result of the effectiveness of the model is that the Asymp value of the test results is 0.000 < 0.05, so it can be concluded that there are differences in student learning outcomes using the experimental-based inquiry learning model compared to conventional learning models.

Based on the results of the effectiveness of the model above, it can be determined that the inquiry-experiment model is effectively used by students. In addition, Indonesian language teachers at SMA Negeri 1 Medan, using the model applied, are becoming more creative in learning to write argumentative texts. Teachers can learn according to general instructions and specific instructions in the model. The material presented in the model is easy for

teachers and students to understand. Validation of Validity and Practicality Assessment Instruments of the above table can be seen in the following graph:
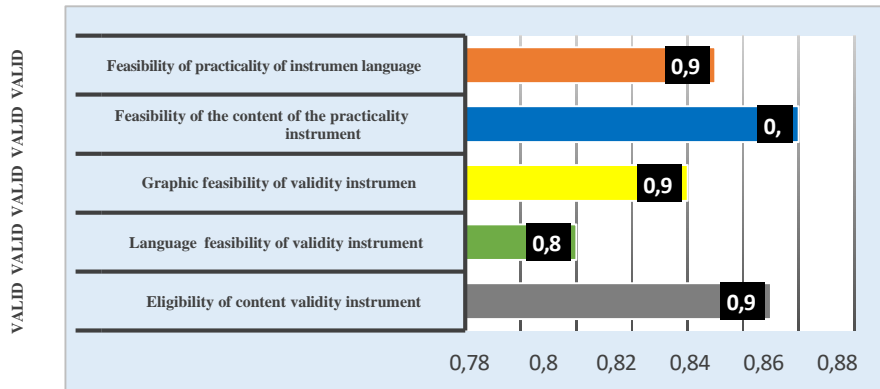
Picture 1. Results of Instrument Assessment Validity Analysis

Verification of the practicality and validity assessments the instruments included six sub-indicators, including the content validity eligibility instrument, the practicality instrument's language feasibility, graphic feasibility, content feasibility, and language feasibility were all considered aspects of its feasibility. These metrics were grouped according to reliable standards. The practicality book based on lecturer assessment was simplified in the following:
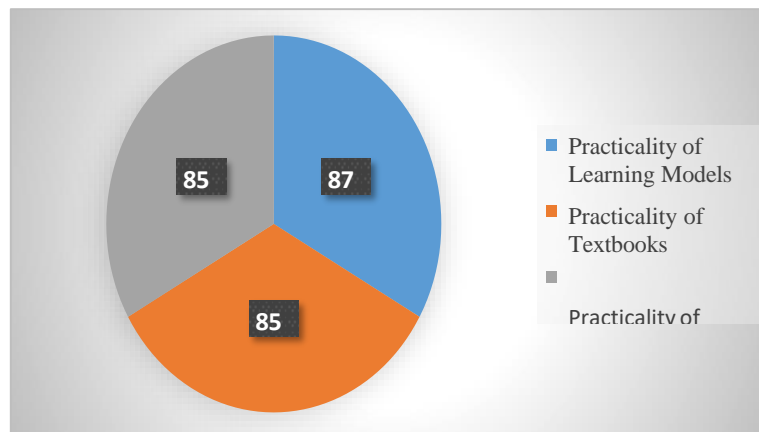
Picture 2. Practicality of Teacher Book

Analysis teacher guides, textbooks, learning models average value in 0.865, applied to practical category, and concluded on expert responses applicability. The personal approach teaching approach to wiritng learning was a learning model using a personal approach teaching approach. There are elements of soft skills with 4C skills in projects, including elements of collaboration, communication, critical thinking to analyze, argue, make conclusions and creativity in creating projects.

DISCUSSION

Based on the research results obtained, it was found that the inquiry-experiment model was valid, practical, and effective in learning to write text. The validity results of this model were obtained from a validation sheet filled in by four experts who are competent in their fields. The results of filling in the validation sheet carried out by expert validators show that the experiment-based inquiry learning model is very valid in terms of the aspects of content validation, presentation and graphics. However, there are several suggestions from experts as part of improving the model in the form of presenting more specific material.

The results of the model practicality test were obtained from the teacher's observation sheet at the time the trial was carried out. The observation sheet is used to obtain the practicality of conducting trials. In addition, a model practicality questionnaire was given to students to be filled in objectively during the trial. The results of the model practicality questionnaire show that it is very practical. In line with the opinion of Gall et al (2003) stated that systematic testing obtained the quality and standards of the same product which can be used at different times and by different teachers. In accordance with this expert's opinion, testing the practicality of the model during limited trials and large class trials can produce very practical results.

The effectiveness of the experiment-based inquiry learning model is obtained from student learning outcomes and student activities. Student learning outcomes are obtained from the assignments carried out by students and adjusted to the assessment guidelines or rubrics. Student activities are obtained from observations made by observers. In this case, filling in the observation sheet from the teacher who observes student activities is categorized as very effective. The results of testing the effectiveness of this model show that student learning outcomes increase after using the experimental-based inquiry learning model.

Likewise, the opinion states that positive student attitudes within students will make it easier for students to succeed in learning. Students will more easily adapt to the inquiry learning model carried out by the teacher (Hommes et al, 2014). However, inquiry learning has the function of developing students' ability to ask questions to the teacher during language learning. This is different from students who just remain silent while learning is taking place, resulting in the teacher not knowing the student's abilities. In particular, the teacher's speaking skills will find it difficult to provide grades for these students. This model also encourages students to continue practicing self-assessment using self-assessment instruments. Students will have more freedom to think critically, analytically and creatively in carrying out assignments authentically. This is in line with the opinion of (Ongardwanich, 2015) who states that problem-based learning will encourage students to think logically, learn from experience, and help students think inductively and deductively.

The findings of this research are that the implementation of the inquiry learning model in writing learning has been proven to be very practical based

on the level of observation results regarding the teacher's consistency in assessing from meeting to next meeting (Kamaruddin et al, 2023). Apart from that, the effectiveness of the model also shows that this model is very effective as seen from the results of the teacher filling out the model effectiveness questionnaire. The effectiveness of this inquiry learning model is measured by the level of validity, reliability and practicality which have been proven to be very good on average according to teachers. The findings above strengthen several previous research findings, including that Suprianti et al (2021) have succeeded in applying the inquiry learning model to learning reading skills. Student learning outcomes increase after authentic assessment is implemented by the class teacher. If related to this research, the inquiry learning model improves student learning outcomes. This integrated process has succeeded in encouraging both parties, teachers and students, to improve and increase the effectiveness of learning.

Improving the quality of learning can be achieved through improving teacher skills in providing regular feedback that is positive, clear, specific and constructive. In other words, assignments based on the inquiry learning model are more effective in improving teacher skills in problem solving than conventional learning and classroom assignments. The next finding, Ching and Fernandez (2020) examined the impact of the inquiry learning model on teachers' problem-solving skills. The results of the research show that the inquiry learning model contributes positively to the perception of teachers' skills in solving problems and acquiring problem-solving skills in teacher education. The impact of the inquiry learning model on teachers' skills in solving problems studied in various courses for prospective teachers from various branches of education. The inquiry learning model also has a positive impact on prospective teachers' perceptions of problem-solving skills, but conventional learning does not have a significant impact.

Viewed from the application aspect, this learning model emphasizes student activity in gaining direct experience and discovering knowledge independently. Through direct experience, students will understand the concepts of the material they study and connect them with other concepts. This learning activity also involves all students' abilities to search and investigate systematically, logically, critically and analytically, so that students can formulate their own discoveries with full confidence. In line with the research results of Septiana (2019) that the aim of inquiry learning activities is maximum student involvement in the learning activity process and maximum activity direction in the learning process and students can develop a confident attitude about what is found in the inquiry process.

This experiment-based inquiry learning model can also help teachers link the material to be taught with students' real-world situations and encourage students to connect the knowledge they have with learning to find answers to problems. Students are conditioned to think critically and creatively, and to draw their own conclusions based on the observations they make. This can make them scientists. The inquiry model guides students to think critically and creatively, and encourages students to make their own conclusions based on the observations they make. Students in applying this

inquiry model discover the concept of learning for themselves with the guidance of a teacher. Teachers can encourage students to connect the knowledge they have with its application in their daily lives. Learning outcomes are often used as a measure to find out how far someone has mastered the material they have studied.

CONCLUSIONS

Based on the data and findings of this research, several conclusions can be drawn. First, the inquiry-experiment learning model for writing instruction with a personal approach is a model that uses a personal teaching approach. It incorporates soft skills and the 4C skills (collaboration, communication, critical thinking, and creativity) through project-based elements, including collaboration, communication, critical thinking to analyze, argue, and draw conclusions, as well as creativity in project creation. This model represents a balance between the material and the characteristics and needs of high school students. It provides clear and simple syntax that can be easily followed by both the teacher, as the facilitator, and the students, as participants in the learning process. Second, the inquiry-experiment learning model for writing texts is practical and easy to implement in English language learning at SMA Negeri 1 Medan City. Its practicality is reflected in the teacher's ability to quickly understand and apply the model based on the instructions provided in the developed materials. Third, the effectiveness of the model is shown by the improvement in the learning outcomes of students who engaged with it, particularly in writing texts. Students were able to write texts easily and correctly, adhering to the rules and elements of the text. However, this research is limited to writing skills and does not address other language skills. Therefore, it is hoped that the results of this research can serve as a reference for future studies focusing on other language skills using this inquiry-based experimental learning model.

AUTHORS' STATEMENTS

Rosmita Ambarita: supervised the project and reviewed the manuscript; **Jusrin Efendi Pohan:** conceptualized the study, designed the methodology, and conducted & analysis data.

ACKNOWLEDGEMENTS

REFERENCES

Amoah, Seth, and Joyce Yeboah. 2021. "The Speaking Difficulties of Chinese EFL Learners and Their Motivation towards Speaking the English Language." *Journal of Language and Linguistic Studies* 17(1): 56–69. doi:10.52462/jlls.4.

Astuti, Lia, Yaya Wihardi, and Diana Rochintaniawati. 2020. "The Development of Web-Based Learning Using Interactive Media for Science Learning on Levers in Human Body Topic." *Journal of Science Learning* 3(2): 89–98.

doi:10.17509/jsl.v3i2.19366.

Athuman, Jamal Jumanne. 2017. "Comparing the Effectiveness of an Inquiry-Based Approach to That of Conventional Style of Teaching in the Development of Students' Science Process Skills." *International Journal of Environmental & Science Education* 12(8): 1797–1816.

Atmazaki, Atmazaki, Syahrul Ramadhan, Vivi Indriyani, and Jeihan Nabila. 2021. "Dialogic-Interactive Media: Alternative Learning Media to Improve Speaking Skills." *KEMBARA Journal of Scientific Language Literature and Teaching* 7(2): 286–96. doi:10.22219/kembara.v7i2.16402.

Atmazaki, Syahrul Ramadhan, and Vivi Indriyani. 2023. "Dialogic-Interactive Media in Online Learning: Effectiveness in Speaking Skills." *Turkish Online Journal of Distance Education* 24(4): 95–112. doi:10.17718/tojde.1146195.

Berry, Mary Hynes, and Gordon Berry. 2014. "' Reading an Object ': Developing Effective Scientific Inquiry Using Student Questions." 2(2): 87–97.

Ching-chiang, Lay-wah Carolina, and Juan Manuel Fernández-cárdenas. 2020. "Analysing Dialogue in STEM Classrooms in Ecuador : A Dual Socioeconomic Context in a High School." 9: 194–215. doi:10.7821/naer.2020.7.529.

Hidayati, Nurkhairo, Siti Zubaidah, and Sri Amnah. 2023. "Effective Learning Model Bases Problem Based Learning and Digital Mind Maps to Improve Student ' s Collaboration Skills." 12(3): 1307–14. doi:10.11591/ijere.v12i3.22654.

Jr, Paulo Hayashi, and Gustavo Abib. 2019. "Validity in Qualitative Research : A Processual Approach Validity in Qualitative Research : A Processual Approach." 24(1): 98–112.

Jurnal, Kembara, Keilmuan Bahasa, Abdul Kamaruddin, and Andi Patmasari. 2023. "Dan Pengajarannya The Effect of the Inquiry- Based Learning (IBL) Model on EFL Students ' Critical Thinking Skills." 9(1): 15–23.

Kareem, Jacqueline, and Rebecca Susan Thomas. 2022. "A Conceptual Model of Teaching Efficacy and Beliefs , Teaching Outcome Expectancy , Student Technology Use , Student Engagement , and 21st-Century Learning Attitudes : A STEM Education Study." 18(4).

Learning, Peer-assisted, Marika D Ginsburg-block, Cynthia A Rohrbeck, and John W Fantuzzo. 2014. "A Meta-Analytic Review of Social , Self-Concept , and Behavioral Outcomes of A Meta-Analytic Review of Social , Self-Concept , and Behavioral Outcomes of Peer-Assisted Learning." (November 2006). doi:10.1037/0022-0663.98.4.732.

Lowry, Paul Benjamin. 2006. "Small Group." (January 2016). doi:10.1177/1046496406294322.

Maman, Mayong. 2023. "Teachers ' Perceptions in the Implementation of Text-Based Learning in Indonesian Secondary Education." 7(1): 13–25.

Ongardwanich, Namthip, Sirichai Kanjanawasee, and Chanatip Tuipae. 2015. "Development of 21 St Century Skill Scales as Perceived by Students." *Procedia - Social and Behavioral Sciences* 191: 737–41. doi:10.1016/j.sbspro.2015.04.716.

Pohan, Jusrin Efendi. 2019. "The Development of Inquiry Learning Model on Indonesian Language Lessons." 1(4): 335–38.

Prichard, Jane S, Robert J Stratford, and Lewis A Bizo. 2006. "Team-Skills Training

Enhances Collaborative Learning Team-Skills Training Enhances Collaborative Learning." (June 2019). doi:10.1016/j.learninstruc.2006.03.005.

Profile, S E E. 2017. "Card-Sorting Activity in the Analysis of Primary School Teachers ' Pedagogical Content Knowledge Components Card- Sorting Activity in the Analysis of Primary School Teachers ' Pedagogical Content Knowledge Components □." (October). doi:10.15345/iojes.2017.02.018.

Plomp, Tjeer. (2013). *Educational Design Research: An Introduction to Educational Design Research.*

Studies, Interdisciplinary, Online Issn, and U G C Approved Sr. 2017. "Scholarly Research Journal's Is Licensed Based on a Work at Www.Srjis.Com." (45269).

Studies, Linguistic, Fatma Yuvayapan, and Hayriye Bilginer. 2020. "JOURNAL OF LANGUAGE AND LINGUISTIC STUDIES Identifying the Needs of Postgraduate Students : The First Step of Academic Writing Courses." 16(2): 595–611. doi:10.17263/jlls.759260.

Suprianti, Dhia, Munzil Munzil, Syamsul Hadi, and I Wayan Dasna. 2021. "Guided Inquiry Model Assisted with Interactive Multimedia Influences Science Literacy and Science Learning Outcomes." *Jurnal Ilmiah Sekolah Dasar* 5(3): 415. doi:10.23887/jisd.v5i3.38802.

Turkish, Attitudes O F, Foreign Students Towards, Their English, Speaking Anxiety, International Schools, and I N Saudi. 2021. "Attitudes of Turkish and Foreign Students towards English Language, and Their English Speaking Anxiety at Turkish International Schools in Saudi Arabia ." 8(1): 485–504.

Werang, Basilius Redan, I. Made Suarjana, Kariyanti Kumala Dewi, and Sandra Ingried Asaloei. 2023. "Indonesian Language Teachers' Teaching Performance and Students' Learning Outcomes." *International Journal of Evaluation and Research in Education* 12(3): 1271–77. doi:10.11591/ijere.v12i3.24949.

Wolomasi, Agustinus Kia, Sandra Ingried Asaloei, and Basilius Redan Werang. 2019. "Job Satisfaction and Performance of Elementary School Teachers." (December). doi:10.11591/ijere.v8i4.20264.

Wullur, Mozes M, and Basilius Redan Werang. 2020. "Emotional Exhaustion and Organizational Commitment : Primary School Teachers ' Perspective Emotional Exhaustion and Organizational Commitment : Primary School Teachers ' Perspective." (November). doi:10.11591/ijere.v9i4.20727.

Younis, Bilal. 2018. "The Effects of Scientific Inquiry Simulations on Students ' Higher Order Thinking Skills of Chemical Reaction and Attitude towards Chemistry." (November 2017). doi:10.12691/education-5-11-7.

Conflict of Interest Statement: The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.