Writing Assessment Model: Demands of Indonesian Teachers in the 21st Century

Suhud Aryana
Universitas Negeri Semarang, Semarang, Indonesia

Ida Zulaeha
Universitas Negeri Semarang, Semarang, Indonesia

Rahayu Pristiwati
Universitas Negeri Semarang, Semarang, Indonesia

Haryadi
Universitas Negeri Semarang, Semarang, Indonesia

Abstract—**This research explores Indonesian teachers' perceptions of writing assessment models based on their needs from school. This research also collected input from the teachers regarding important elements in an ideal writing assessment model with 21st century. The development research model used is the Borg and Gall model adapted by Sugiyono, but development research was only at the design planning stage. This research data was collected through surveys and group discussion forums. Data analysis used the Miles and Huberman model. In short, the results showed the demands of teachers to develop a writing skills assessment model that is oriented towards the 4C and HOTS aspects and that focuses on the characteristics of reliability, sustainability, construct validity, collaboration, assessment criteria, competency standards, question construction, objectivity, and communication. Additionally, the procedural framework for the required writing skills assessment model consists of three parts: 1) identifying assessment standards, 2) writing assignment development, 3) implementation and follow-up. Therefore, this research can make a positive contribution to Indonesian teachers' efforts to measure student achievement in writing skills.**

Index Terms—**the 21st century, Indonesian teachers, writing assessment model**

I. INTRODUCTION

In the context of the technological development era, changes and adjustments to the education system in Indonesia are a necessity that cannot be avoided. 21st century skills, such as Communication, Collaboration, Critical Thinking, and Creativity (4C), as well as Higher Order Thinking Skills (HOTS), are increasingly occupying a central position in Indonesian education priorities (Damayanti, 2017).

Teachers as the main educational agents have a very important role in developing and assessing students' writing skills. Teachers also have the responsibility to develop relevant and contextual assessment tools. It is hoped that they can objectively measure student achievement in writing skills using the 4C and HOTS aspects. Besides that, teachers are required to provide constructive feedback to students so that they can continue to improve their students' writing skills. Therefore, there is a need for an assessment model that is able to measure aspects of 21st century competency comprehensively and contextually with a special focus on writing skills. The teacher's role in developing an assessment model is to provide solutions to current problems. They not only transfer knowledge but also measure students' abilities to become superior individuals and ready to encounter the complex challenges of the 21st century (Widihastuti, 2015; Arsanti et al., 2021; Aryana, 2021).

There are now challenges for teachers in Indonesia to be able to integrate 21st century elements in the assessment of writing skills. The assessment is still not effective, and teachers often face difficulties in designing and implementing assessment models that meet these demands. This research aims to develop a writing assessment model based on the demands and needs of Indonesian teachers in the 21st century. Therefore, this research focuses on the writing assessment model as a demand for teachers in the 21st century and on developing a procedural framework for the writing skills assessment model needed by teachers in Indonesia.

II. THEORETICAL FRAMEWORK

The theoretical framework is the basis for researchers to support a series of definitions and concepts as well as perspectives from research findings. Writing skills in the context of the 21st century have a crucial role; this has been covered in several studies. However, modern education is expected to produce individuals who are able to communicate

effectively in various forms, including writing (Wan & Gut, 2011; Claro et al., 2012; Griffin & Care, 2015; Elbow, 2017; Motallebzadeh et al., 2018; Erdoğan, 2019; Fernando, 2020; Yao et al., 2021; Khairallah & Adra, 2022).

Modern education is expected to produce individuals who are able to communicate effectively in various forms, including writing. A writing assessment model is a framework that teachers use to evaluate students' writing skills. It is covered in several researches (Berge et al., 2016; Ghaffar et al., 2020; O'Connell, 2022; Devi et al., 2022; Hawamdeh et al., 2023). Previous research in assessment model development can provide insight into what has been tried and worked in various contexts. Demands and needs of teachers in Indonesia related to writing assessment models. This includes an understanding of the challenges encountered by teachers in assessing students' writing skills, as well as their need for assessment models that are relevant to the curriculum and demands of the 21st century. This has been covered in several studies (Popham, 2017; Quaicoe & Pata, 2020; Aryana, 2021).

The writing assessment model being developed needs to reflect the 4C and HOTS skills expected in 21st century education. A deep understanding of how assessment models can measure and develop aspects such as authenticity, reliability, validity, and fairness in writing assessments is very important; this has been covered by several studies (Griffin & Care, 2015; Winaryati, 2018; Prayogi & Estetika, 2019; Arsanti et al., 2021).

III. METHOD

This development research used Sugiyono's (2019) model in modifying the Borg and Gall design for development research, consisting of three stages: research (potential and problems, literature study, and information gathering), product design (design and validation of design), and development. However, in this development research, only two of the three stages of the development research model are from Sugiyono's model. The sample and population of this research were senior high school teachers in West Java Province, Indonesia. The total of respondents was 1,700 out of 5,287 people. The data is based on the Central Statistics Agency of West Java Province via https://jabar.bps.go.id/. Data was collected for six consecutive months, starting from the beginning of February to the end of August 2023. Data collection techniques included surveys using questionnaires and forum group discussions (FGD). The survey technique used is a closed questionnaire with alternative questions such as "very needed, enough needed, not needed, really not needed". The questionnaire was first tested for validity and reliability. The validity test results showed that all item validity values are greater than 0.381, which means that each item is declared valid. Meanwhile, for the reliability test results using the Cronbach Alpha method, the value r = 0.885 was obtained, which means it is greater than the reliability coefficient value of 0.89, so the instrument is declared reliable. The data analysis technique refers to the provisions of the likert scale. The data analysis technique also used the Miles and Huberman model for data collection, reduction, presentation, and drawing conclusions.

IV. FINDING AND DISCUSSION

Based on the first stage of development research that needs analysis, the research was conducted using a survey given to 1,700 teachers in the West Java region of Indonesia. Therefore, the results of research on teacher perceptions regarding the need for a writing skills assessment model are presented in Table 1 below.

TABLE 1
TEACHER RESPONSES

No.	Aspect	Very Needed	Enough Needed	Not Needed	Really not needed
1	Question construction	83%	8%	6%	3%
2	Assessment criteria	89%	9%	0%	2%
3	Construct Validity	97%	0%	3%	0%
4	Reliability	92%	8%	0%	0%
5	Objectivity	79%	13%	8%	0%
6	Competency Standards	85%	12%	3%	0%
7	Readability and ease for using	57%	34%	8%	2%
8	Sustainability	87%	10%	3%	0%
9	Critical Thinking and Problem Solving	64%	29%	7%	0%
10	Communication	79%	13%	8%	0%
11	Collaboration	92%	8%	0%	0%
12	Creativity	64%	26%	6%	4%
13	Analysis	56%	30%	14%	0%
14	Evaluation	64%	27%	9%	0%
15	Create	49%	35%	17%	0%

The results above show that the need for teachers in the writing assessment model in the question construction aspect is 83%, or 1.411 out of 1.700 teachers chose the answer that is really needed. Meanwhile, 8 percent, or 136 out of 1.700 teachers, answered that it was quite necessary. Results (6%) or 102 out of 1.700 teachers chose the answer not needed, and (3%) or 51 out of 1.700 answered not really needed. In the assessment criteria aspect, 89%, or 1.513 out of 1.700 teachers, chose the answer as very needed, and the answer (9%), or 153 out of 1.700 teachers, chose it as enough

needed. Meanwhile, the answer (2%) or 34 out of 1.700 teachers chose the answer as not really needed. In the aspect of construct validity (97%), 1.649 out of 1.700 teachers chosen the answer as very necessary; apart from that, the results (3%), or 51 out of 1.700 teachers, answered as not needed. The reliability aspect (92%), or 1.564 out of 1.700 teachers who chose an answer, is very necessary. Apart from that, 9 percent, or 136 out of 1.700 teachers, answered that it was quite necessary. The objectivity aspect (79%), or 1.343 out of 1.700 teachers, chose the answer as very necessary, and the answer (13%), or 221 out of 1.700 teachers, chose the answer as quite necessary. Meanwhile, the answer (8%) or 136 out of 1.700 teachers chose the answer as not needed. The competency standards aspect (85%), or 1.445 out of 1.700 teachers, chose the answer as very necessary, and the answer (12%), or 204 out of 1.700 teachers, chose the answer as quite necessary. Meanwhile, the answer (3%) or 51 out of 1.700 teachers chose the answer as not requiring. The readability and ease of use aspect (57%), or 969 out of 1.700 teachers, chose the answer as very necessary, and the results (34%), or 578 out of 1.700 teachers, chose the answer as quite necessary. Meanwhile, the results (8%), or 136 teachers, chose the answer as not needed, and the results (2%), or 34 teachers, chose not really needed. The sustainability aspect (87%) or 1.479 out of 1.700 teachers chose the answer as very necessary, and the results (10%) or 1.770 out of 1.700 teachers chose it as quite necessary. Meanwhile, the results (3%), or 51 teachers, chose the answer as not needed. The critical thinking and problem-solving aspect (64%) means that 1.088 out of 1.700 teachers chose the answer as very necessary, and the results (29%) or 493 out of 1.700 teachers chose the answer as quite necessary. Meanwhile, 7 percent of the teachers, or 119 out of 1.700, answered that they did not need it. The communication aspect was 79%, or 1343 out of 1.700 teachers, who chose the answer as very necessary, and the results were 13%, or 221 out of 1.700 teachers, who chose the answer as quite necessary. Meanwhile, 8%, or 136 teachers, chose the answer that they did not need it. The collaboration aspect was 92%, or 1.564 out of 1.700 teachers, who chose the answer as very necessary, and the results (8%), or 136 teachers, chose the answer as sufficient. The creativity aspect showed (64%), meaning that 1,088 out of 1.700 teachers chose the answer that was really needed. In addition, the results (26%), or 442 out of 1.700 teachers, chose the answer simply added. Meanwhile, the result (6%) means that 102 teachers out of 1.700 teachers chose the answer as not needed, and the result (4%) or 68 teachers chose the answer as not really needed. The analysis aspect was 56 percent, or around 952 out of 1.700 teachers who chose the answer as very necessary. In addition, the result (30%) means that 510 out of 1.700 teachers chose the answer as quite necessary. Meanwhile, the results (14%), or 238 out of 1.700 teachers, chose the answer as not needed. In the evaluation aspect, the results showed that 64%, or 1,088 out of 1.700 teachers, chose the answer as very necessary, and 27%, or 459 out of 1.700 teachers, chose the answer as quite necessary. Meanwhile, the results (9%), or 153 out of 1.700 teachers, chose the answer as not needed. The create aspect was 49%, or around 833 out of 1.700 teachers, who chose the answer as very needed, and the results (35%), or 595, chose the answer as quite needed. Meanwhile, the results (17%), or 289 teachers, chose the answer as not really needed.

Based on the fifteen aspects, teachers focused more on the nine needs for writing assessment models that need to be developed: reliability, sustainability, construct validity, collaboration, assessment criteria, competency standards, question construction, objectivity, and communication.

Reliability refers to the consistency of measurement results over time. A reliable test or measuring instrument will provide similar results if tested on the same individual under the same conditions (Ginting & Permana, 2018; Zhang, 2022). Sustainability refers to the ability to maintain the relevance and effectiveness of a measurement tool over time (Bond & Dus k, 2020; Nishizuka, 2022; Anggraena et al., 2022; Al-Kuwari et al., 2022). Construct validity is related to the extent to which the measuring instrument actually measures what is intended. This involves proving that the measuring instrument truly reflects the concept or competency construct that is intended to be measured (Rezaei & Lovorn, 2010; Elosua, 2022; Correnti et al., 2022).

Collaboration can mean involving various stakeholders in the development and assessment of competency measurement tools, including experts, teachers, practitioners, and test takers. This collaboration can help ensure that competency measurement tools reflect real-world needs and diverse views (Annetta et al., 2010; Mislikhah, 2020; Li, 2021; Navarro et al., 2022). Assessment criteria are guidelines or guidelines used to evaluate individual performance in competency tests, meaning that these criteria must be clear, relevant, and measurable (Shrestha, 2022; Ramadhanty et al., 2023). Competency-measuring tools must be in accordance with competency standards set for a particular profession or field. This ensures that the measurement tools reflect the skills and knowledge required in the right context (Gallardo, 2020; Syaifuddin, 2020).

Content construction involves creating test items or questions that are relevant, valid, and appropriate to the competency being measured (Asrul et al., 2014; Al-Kuwari et al., 2022). Objectivity in assessment refers to impartiality and consistency in assessment. The appraiser must be objective and not influenced by personal factors (Zheng & Yu, 2019; Ghanizadeh et al., 2020; Ebadi & Bashir, 2021). Communication is important in the process of developing and implementing competency tests. Test results must be communicated clearly to participants, and the results report must provide information that is useful to them (Pearson, 2022; Marjokorpi, 2023).

Meanwhile, creativity, critical thinking and problem solving, evaluation, readability and ease of use, analysis, and creation are aspects that have previously been implemented by teachers in authentic assessment models. According to the results of the Forum Group Discussion (FGD), teachers in Indonesia in the West Java region on average need a procedural framework concept with three stages in the writing skills assessment model, which is presented as follows.
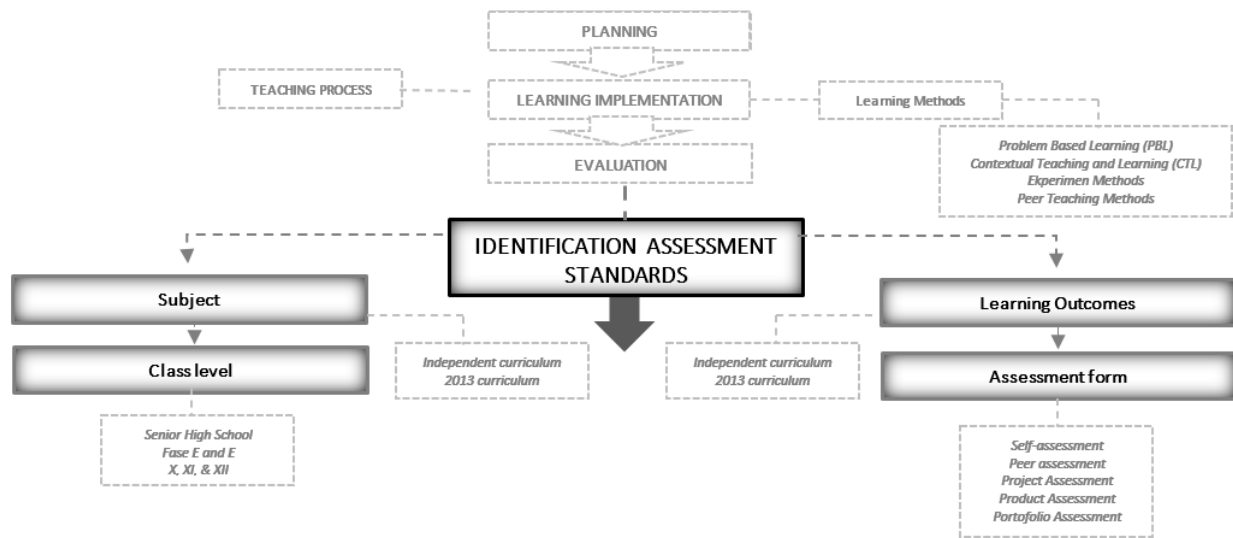
Figure 1. Assessment Standard Identification Stage

The figure above shows the teaching process, starting with the steps of preparing a learning plan, implementing learning using appropriate methods, and ending with an evaluation to measure the extent to which the learning process has been achieved by students and teachers. The assessment standards identification stage involves determining the criteria and guidelines that will be used to assess an individual's performance or competency in a test or evaluation (Carroll, 2020; Abdel Latif, 2021).

In the figure above, the first stage is identification of assessment standards. This is based on researchers' conversations with high school level teachers, they agreed that the first procedure carried out by teachers in measuring writing skills was based on identifying assessment standards. These standards are based on the curriculum that applies to the education unit at the respective high school level. In identifying assessment standards, teachers must look at learning outcomes, material, class level and the form of assessment that will be used (Mendikbudristek, 2021; Gündüzalp, 2021; Ridho et al., 2021).

The second stage in the writing skills assessment model based on the results of the forum group discussion (FGD) of teachers and researchers is presented in the following Figure 2 below.
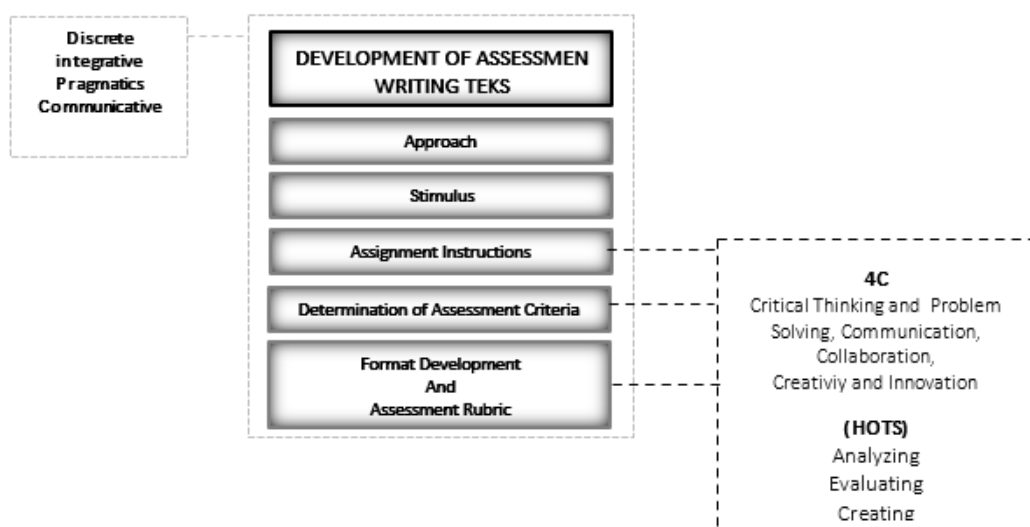

Figure 2. Writing Assignment Development Stage

The picture above shows the development of a writing assignment. In the task development process, there are several stages. This stage is based on the results of discussions between teachers and researchers. The discussion resulted in a framework for assessment procedures starting from a writing approach, including discrete, integrated, pragmatic, and communicative approaches (Nurgianotoro, 2016). After identifying the approach, the next step is stimulus, meaning that in the assessment process the teacher can provide a stimulus first so that students understand the measurement of their writing ability (Rizqoh, A. N. A. & Wagiran, 2020; Ghanizadeh et al., 2020; Li, 2021).

Next there is the assignment instruction stage, this instruction is very important so that students understand the steps in the writing assignment (Seyatiningrum, 2018). After the intrusion stage, the teachers' agreement on the next step is to determine the assessment criteria. Assessment criteria are determined based on the aspects to be measured according to learning objectives and achievements (Asrul et al., 2014). This then ends with steps to develop an assessment format and assessment rubric. At the writing assignment development stage, what teachers must pay attention to is including the concept of 21st century skills, namely 4C and HOTS. Teachers also focus on developing rubrics that are integrated with 21st century competencies, including 4C and HOTS aspects. Assessment rubric that integrates higher order thinking skills (HOTS) and 4C (Communication, Collaboration, Creativity, Critical Thinking) as part of developing 21st century competencies (Arsanti et al., 2021).

The final stage is implementation and follow-up. At this stage the teacher must pay attention to the assessment steps and procedures based on the assessment plan starting from the first and second stages. The third stage in the assessment process agreed between one teacher and another teacher in a group discussion forum (FGD) is presented in figure 3 below.
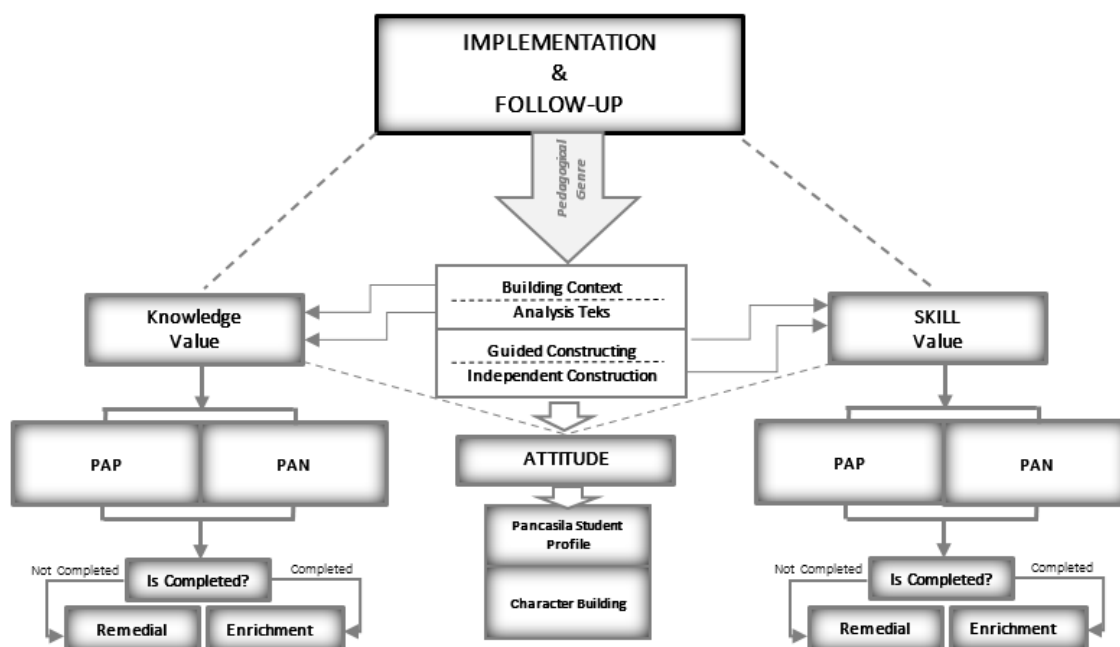

Figure 3. Implementation and Follow Up Stage

The figure above shows the procedural framework, starting with the aspects to be assessed. There are three aspects assessed in writing skills, namely knowledge, skills, and attitudes. These three aspects are measured based on the curriculum implemented in every school in the West Java region of Indonesia.

Based on the agreement of the teachers and researchers in the results of the discussion, when measuring knowledge of writing skills, the first step is application based on pedagogical genre, namely building context and analysing the text. Pedagogical genre involves context building and text analysis as a method for teaching and understanding specific genres in communication or writing (Rosdiana & Mukhtar, 2016). Meanwhile, measuring students' writing skills is the same as using genre pedagogy, namely guided construction and independent construction. This means that during the assessment process, writing assignments can be done with the help of a teacher or by the students themselves (Abdel Latif, 2021). Next, the teacher sets a *Penilaian Acuan Patokan* (PAP) and a *Penilaian Acuan Normatif* (PAN). The application of PAN is for determining individual grades, while PAN is for determining group grades (Asrul et al., 2014; Agus, 2022).

In addition, to measure students' attitude abilities in the learning process, the teachers agreed that they determine aspects of the student profile of Pancasila and building character according to the curriculum used at school. Five Principles of Pancasila: 1) Belief in the one and only God; 2) Just and civilized humanity; 3) The unity of Indonesia; 4) Democracy guided by the inner wisdom in the unanimity arising out of deliberations amongst representatives; and 5) Social justice for the whole of the people of Indonesia. The Pancasila student profile and character education include a comprehensive description of the Pancasila values and character that students are expected to have as an important part of their moral and social education. Based on the decision letter of the Indonesian Education Standards, Curriculum and Assessment Agency, the Indonesian Ministry of Education, Culture, Research and Technology number 009/H/KR/2022 regarding the Pancasila student profile is 1) Have faith, be devoted to God Almighty, and have noble character, 2) Global diversity, 3) Work together, 4) Independent, 5) Critical reasoning, 6) creative (Stiawati, 2020; Sufyadi, 2021; Ahmad, 2022).

V. Conclusions

Based on the results presented, it can be concluded that the demands of teachers in the 21st century are to be able to develop a writing skills assessment model that is oriented towards 21st century competencies with 4C and HOTS aspects. The writing assessment model focuses on the characteristics of reliability, sustainability, construct validity, collaboration, assessment criteria, competency standards, question construction, objectivity, and communication. Apart from that, the need for a conceptual or procedural model for assessing writing skills is very necessary, consisting of three parts: identifying assessment standards, developing writing assignments, implementation, and follow-up.

Acknowledgements

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Suhud Aryana was born in 1992 in the Karawang region of West Java, Indonesia. He finished his bachelor's degree in English education from STKIP Siliwangi Bandung, West Java, Indonesia, in 2016. In 2019, his Master's degree in Indonesian language education at IKIP Siliwangi, Cimahi, West Java, Indonesia. Currently, he is one of the language education lecturers and serves as secretary of the language education faculty at IKIP Siliwangi. Currently, he is also a student in the Language Education Doctoral Programme at Universitas Negeri Semarang, Central Java, Indonesia. His scientific interests include Indonesian language teaching, evaluation of language education and learning, and language literacy entrepreneurship.

Ida Zulaeha was born in 1970 in the Kudus region of Central Java, Indonesia. She finished her bachelor's degree from IKIP Malang State in 1992. A master's degree was obtained from Gajah Mada State University in 2000, and a doctoral programme was obtained from Universitas Pendidikan Indonesia in 2008. She obtained his title (Prof.) in 2018. Currently, she is one of the senior postgraduate lecturers at Universitas Negeri Semarang. She is a professor in the field of dialectology at the Department of Indonesian Language and Literature, Faculty of Language and Arts Education, Universitas Negeri Semarang. She teaches the Indonesian Language Education Research Methodology, Writing Learning, Indonesian Language Learning, and Sociolinguistics.

Rahayu Pristiwati was born in 1969 in the Tegal region of Central Java. She completed her Sarjana degree in language and arts education at the University of Mataram in 1992. She finished his master's degree in 2004 at Universitas Negeri Semarang, and she finished her doctoral degree in 2017 at the same institution. She is currently the head of the Language and Arts Education study programme at Semarang State University. Her scientific interests include citizenship and learning to speak Indonesian.

Haryadi was born in Kudus, October 5 1967. He finished his bachelor's degree in Indonesian Language and Literature Education at IKIP Semarang in 1992. He finished his master's degree in Indonesian Language Education at Universitas Negeri Semarang in 2003 and he finished his Doctoral degree at the same university, that is, Universitas Negeri Semarang in 2014. Currently, he is one of the lecturers in the Language and Arts Education Study Program at Universitas Negeri Semarang. He is an expert in the field of Studying Indonesian Language and Literature Learning Models and Media, and Receptive Language Skills Learning.