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# Junior High School Teacher's Perception on Implementation of Education for Sustainable Development: A Study in West Java Province

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## ABSTRACT

This research was conducted to analyze the validity of the academic integrity instrument for senior high school (SMA) students in Bandung. The academic integrity instrument consists of 45 items which contain five aspects of academic integrity: honesty, trust, fairness, respect and responsibility. The research sample was 80 high school students randomly distributed in 3 classes in Bandung. This study used a quantitative approach and descriptive method with a survey as the research method design. Data were analyzed with the Rasch model using the Winstep application version 3.73. The results of the analysis found that: 1) The interaction between respondents and items is included in the good category; 2) The reliability value of the respondent which shows the consistency of the respondent in filling out the instrument is included in the good and acceptable category; 3) The reliability of the item items as an indicator of the quality of the item items in the instrument belongs to the special category; 4) The average difficulty level of standard items is above the ability level of high school students. Thus the items of the academic integrity instrument are easily approved by high school students in Bandung.



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## 1. INTRODUCTION

Issues related to sustainability are topics that continue to be discussed to date. Sustainability deals with the crises that the planet is experiencing in economic, social, and environmental terms. The United Nations, in its Resolution entitled Transforming our World: The 2030 Agenda for Sustainable in 2015, stated that countries are facing problems such as poverty, hunger, unemployment, gender inequality, increasingly hot climate change, water scarcity, sea level rise, and these various conditions are the background for the emergence of the concept of sustainable development (Leal Filho et al., 2019; Manandhar et al., 2018). These crises will impact all aspects of life on this planet.

1972 was the first milestone for environmental problems to become a world concern holding the United Nations Conference on the Human Environment in Stockholm, Sweden. Over 50 years, various activities have been held to address environmental issues. In 2015 an action plan document was launched to achieve a better and more sustainable future for all by 2030, known as the 2030 Agenda (Colglazier, 2015; Soergel et al., 2021). This action plan includes 17 sustainable development goals along with 169 targets known as Sustainable Development Goals (SDGs) or *Tujuan Pembangunan Nasional* (TPB) (Alfa, 2019). The SDGs here are described as consisting of agendas that are of concern to the entire world community to support sustainable development.

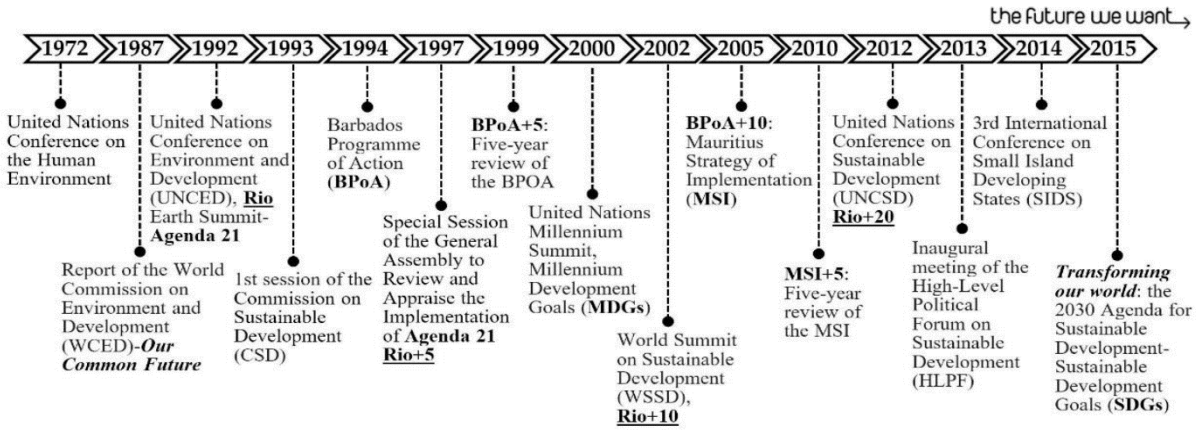


**Figure 1.** Transforming our world: the 2030 Agenda for Sustainable Development (Chou, 2021)

As a UN member, Indonesia is committed to successfully implementing the 2030 agenda. Through the Ministry of National Development Planning, the Government of Indonesia has created a Road Map for Indonesia's SDGs containing strategic policies and stages in achieving SDGs from 2017 to 2030 (Baiquni, 2023). This Roadmap contains issues and projections related to the indicators for each SDGs and functions as an important tool to guide all stakeholders toward achieving Indonesia's 2030 development agenda. In addition, Indonesia has also developed an SDGs National Action Plan, a document that contains work plan programs and activities 5 (five) annually for the implementation of various activities to achieve the SDGs.

Even though Indonesia has made efforts to implement the SDGs, Indonesia's average SDGs achievement index compared to other ASEAN countries is in position 7 out of 10 ASEAN countries in the 2017-2021 timeframe with an average of 64.3 out of a maximum score of 100. Thailand is the country that has The SDGs Achievement Index was the highest, followed by

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Vietnam, Malaysia, Singapore, Brunei, and the Philippines. Indonesia's SDGs Achievement Index from 2018-2021 still faces various challenges in achieving SDGs. From 2018-2021 the main challenges are in goals number 2, 3, 9, 10, and 15, while better achievements but challenges are still found in goals number 4, 12, and 13.

**Table 1.** SDGs Index of ASEAN Countries 2017-2021

| Country | 2017 | 2018 | 2019 | 2020 | 2021 | Average |
|---|---|---|---|---|---|---|
| Thailand | 69.5 | 69.2 | 73 | 74.5 | 74.2 | 72.08 |
| Vietnam | 67.9 | 69.7 | 71.1 | 73.8 | 72.8 | 71.06 |
| Malaysia | 69.7 | 70 | 69.6 | 71.8 | 70.9 | 70.40 |
| Singapura | 69 | 71.3 | 69.6 | 67 | 69.9 | 69.36 |
| Brunei | - | - | - | 68.2 | 68.3 | 68.25 |
| Filifina | 64.3 | 65 | 64.9 | 65.5 | 64.5 | 64.84 |
| Indonesia | 62.9 | 62.8 | 64.2 | 65.3 | 66.3 | 64.30 |
| Myanmar | 59.5 | 59 | 62.2 | 64.6 | 64.9 | 62.04 |
| Kamboja | 58.2 | 60.4 | 61.8 | 64.4 | 64.5 | 61.86 |
| Laos | 61.4 | 60.6 | 62 | 62.1 | 63 | 61.82 |

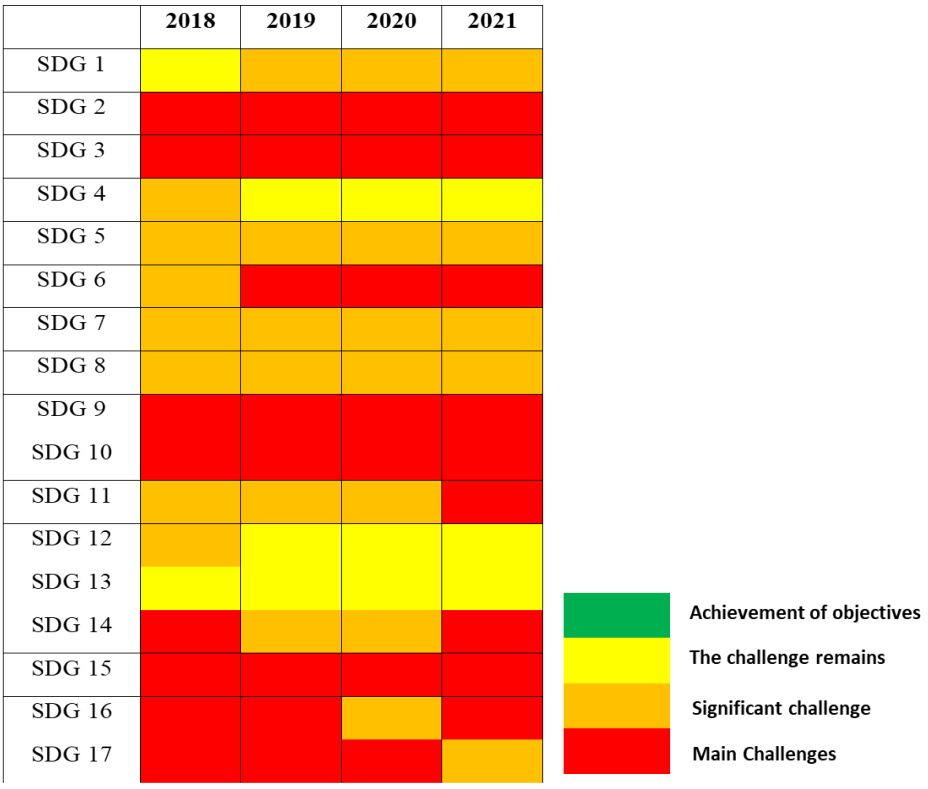


**Figure 2.** Indonesian SDGs Index 2018-2021

Education is an important part of the SDGs as one of the goals that must be achieved. This is stated in goal number 4: to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Quality education will produce human resources with

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sustainable competencies, including cognitive components, such as knowledge and understanding of environmental, social, economic, and political systems, and higher-order thinking skills, such as reasoning and synthesis, as well as social skills, values, and emotions, which are collectively referred to as the affective domain and equipped with strong disciplinary skills (Kioupi & Voulvoulis, 2019; Osher et al., 2016). Education must contribute to creating human resources with sustainable competence. Suparmoko (2020) in his research explains that the concept of education pays attention to the pillars of sustainable development and aims to develop competencies that enable and empower individuals to reflect on their actions by taking into account their current and future social, cultural, economic and environmental impacts both from a local and global perspective, namely Educational Sustainable Development (ESD).

As an effort to achieve sustainable goals, ESD is an important part of creating human resources with sustainable competencies through education. ESD is a paradigm of thinking about the balance between environmental, social, and economic future for a better life. ESD is a concept that carries a new vision of education: empowering people of all ages to take responsibility for creating a sustainable future. ESD generally focuses on developing and strengthening individual competencies, enabling individuals to contribute and participate in sustainable development processes of various types and dimensions (Hoffmann & Siege, 2018). Competence includes a collection of success factors, including knowledge, skills, and attitudes needed to achieve important results in certain organizational jobs or roles (Chouhan & Srivastava, 2014). Attitudes related to environmental problems can be interpreted as acceptance or rejection of environmental preservation activities. Therefore attitudes like this can be developed and instilled from an early age through junior high school education (Ali et al., 2022).

Several areas can be done to implement ESD in schools, especially at the junior high school level. These fields are in line with research conducted by Mogren & Gericke (2017), which states that the implementation of ESD at the school level is carried out in three areas, namely: First, ESD learning is related to the arrangement of learning by teachers to create a school culture that encourages student involvement in problems from multiple perspectives; Second, school policies and organization, relating to the allocation of adequate time and resources to ensure that ESD is carried out in a way that builds student and teacher involvement; Third, cooperation in external relations, which involves cooperation between schools and the community. The same thing was stated by Adriyanto et al. (2019) that the implementation and dissemination of ESD in schools is related to the teaching and learning process in schools, namely the teacher's understanding of sustainable development and integrating sustainable development goals into subjects.

Teachers as learning implementers are a priority for action in realizing the SDGs. This is because the implementation of ESD relies heavily on each teacher's beliefs, enthusiasm, theoretical knowledge, and practical expertise (Zhukova & Iliško, 2020). Teachers are effective agents of change who can teach attitudes, knowledge, and skills needed by students in the future. Ferguson et al. (2021) says that teachers are important agents in delivering sustainable development content and facilitating competency skills and actions to achieve that goal. Teachers are powerful agents of change with the ability to provide the educational responses needed in the context of sustainable development. Teacher knowledge and competence are crucial for restructuring educational processes and institutions toward sustainability (Rieckmann, 2018). Nketsia et al. (2020) said that study results show that teacher education is important in achieving SDG 4 targets. Thus, achieving inclusive, equitable, quality education

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and lifelong learning opportunities for all students ultimately depends on training sustainable supply and quality of teachers in developing and underdeveloped countries. During the learning process in class, the teacher must be able to provide students with an understanding of sustainable competencies that must be possessed through ESD in implementation. ESD requires learner-centered and interactive teaching and learning strategies such as critical thinking, participatory decision-making, values-based learning, and multi-method approaches, almost all of which are somewhat in contrast to traditional lecture-based teaching practices (Ichinose, 2017). Before understanding students, besides having good teaching skills, the teacher must also understand and have sustainable competence. Therefore, teacher competence and understanding regarding SDGs, ESD, and sustainable competence need attention.

West Java is the province with the largest population in Indonesia, based on data from the Central Statistics Agency, the average population in 2020-2022 is 48,820.8 thousand people. The West Java government has launched several programs to address issues related to the environment. Pendidikan Lingkungan Hidup (PLH) or Environmental Education is an effort by the West Java Provincial government to instill a soul to care for the environment for junior high school students which has been implemented since 2007. Therefore, teachers in West Java should implement ESD in their learning. However, PLH learning is carried out by teachers without any innovation, this makes learning in essential conditions run well, but not optimal (Fadlillah et al., 2018; Nahadi et al., 2014; Saddhono et al., 2019).

Both ESD and PLH aim to awaken the community and change sustainable lifestyles and play an active role in maintaining environmental sustainability. ESD as education promotes changes in knowledge, skills, values, and attitudes to enable a more sustainable and equitable society for all (Leicht, Combes, Byun, & Agbedahin, 2018; Stössel, Baumann, & Wegner, 2021). Teachers are powerful agents of change who can provide the educational response needed in the context of sustainable development through ESD (Rieckmann, 2018). Teachers must comprehensively understand ESD and integrate it into learning practices to encourage students to become change agents with the knowledge, means, will, and courage to take transformative actions for sustainable development. This study aims to determine teacher perceptions of ESD implementation by junior high school teachers in West Java.

## 2. METHODOLOGY

The population of this study was junior high school teachers in West Java Province. According to Sumargo (2020), the sample used multi-stage sampling by selecting 384 teachers in 5 districts or cities in West Java Province. The method used is descriptive analysis with survey techniques. Data collection was carried out using the Google Forms platform. After all, data was collected, it was analyzed using Chi-squared. Statements in the questionnaire items given to teachers to determine their perceptions of implementing ESD in schools are divided into three aspects. The statement points are illustrated in the following table:

**Table 2.** Blueprint Research Instrument

| Number | Aspects | Competency Items |
|---|---|---|
| 1 | ESD Policies | Participate in socialization about ESD |
| | | Review policies related to ESD |

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| Number | Aspects | Competency Items |
|---|---|---|
| 2 | Changes in the implementation of learning | Developing an ESD lesson plan |
| | | Composing ESD behaving Movement |
| | | Teaching ESD topics within the subject |
| | | Integrating ESD in subjects |
| | | Integrating ESD as a separate subject |
| 3 | Capacity building | Using active learning strategies regarding ESD |
| | | Assess ESD attitudes toward students |
| | | Using digital technology platforms |
| | | Take ESD training |
| | | Practicing ESD |
| | | Looking for information or self-study about ESD |
| | | Collaborate with colleagues on ESD |
| | | Collaborate with the community to discuss ESD |
| | | Guiding students to behave ESD |

## 3. RESULT AND DISCUSSION

This study involved teachers with various characteristics so that the data obtained could be more varied. The characteristics of the teacher as a respondent can be described in Table 2 below:

**Table 3.** Respondent Characteristic

| Characteristic | | Respondent | |
|---|---|---|---|
| | | Total | % |
| Gender | Male | 149 | 38,8 |
| | Female | 235 | 61,2 |
| Age | 20-30 | 82 | 21,4 |
| | 31-40 | 122 | 31,8 |
| | 41-50 | 85 | 22,1 |
| | 51-60 | 95 | 24,7 |
| Teaching experience | 1-10 years | 154 | 40,1 |
| | 11-20 years | 127 | 33,1 |
| | 21-30 years | 87 | 22,7 |
| | 31-40 years | 16 | 4,2 |
| Level of education | Bachelor | 316 | 82,3 |
| | Master | 134 | 34,9 |
| | Doctoral | 3 | 0,8 |
| Subject | Nature Science | 107 | 27,9 |
| | Social Science | 152 | 39,6 |
| | Language | 99 | 25,8 |

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| Characteristic | | Respondent | |
|---|---|---|---|
| | | Total | % |
| Stats | Sport | 26 | 6,8 |
| | *PNS* | 192 | 50,0 |
| | *Guru PPPK* | 50 | 13,0 |
| | *Guru Swasta* | 43 | 11,2 |
| | *Guru Honor* | 99 | 25,8 |

In this study, the characteristics of the respondents were divided into 6 (six) sections, namely based on gender, based on age, based on teaching experience, based on educational level, based on subjects taught, and based on status. In each characteristic, the respondents have different numbers and percentages from the total number of respondents in the study, and there were 384 people. Based on gender, the most characteristic of female respondents (women) with a percentage of 61.2%. Based on age, most characteristics are in the age range of 31-40 years, with a percentage of 31.8%. Based on teaching experience, the average number of respondents is the highest, having 1-10 years of teaching experience with a percentage of 40%.

Based on the level of education, the highest percentage of respondents was at the undergraduate level, with 82.3%. Based on the subjects taught, most respondents taught social studies with a percentage of 39.6%. Based on status characteristics, most respondents were civil servants, with a percentage of 50%. The data in Table 1 and the description above illustrate that the respondents in this study were diverse and reached various statuses that were characteristic of the research.

**Table 4.** Table of ESD Implementation in Schools

| Code | ESD Implementation in Schools | Item Total | Score | Ideal Score | Percentage |
|---|---|---|---|---|---|
| Y_1 | ESD policies that have been implemented | 4 | 2963 | 6144 | 48.23% |
| Y_2 | Implementation of learning regarding ESD | 6 | 4725 | 9216 | 51.27% |
| Y_3 | ESD capacity building | 6 | 4476 | 9216 | 48.57% |

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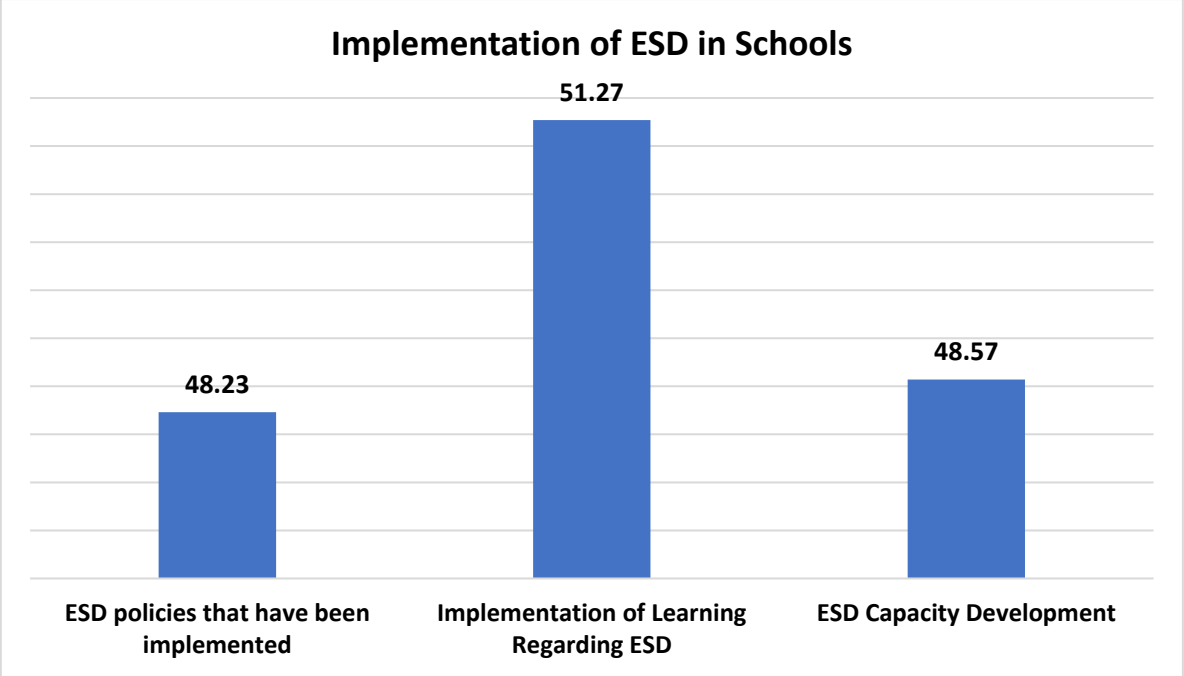


**Figure 3.** Results of ESD Implementation Indicators in Schools

ESD is a program that uses education as an approach, so schools, teachers, and teaching and learning processes have an important role in implementing and developing ESD methods (Suprastowo, 2010; Indrati & Hariadi, 2016; Tristananda, 2018). Based on the research results, it can be seen that the ESD Policy aspect that has been implemented is included in the good category when viewed based on the percentage obtained in that aspect. This indicates that the teachers feel that the ESD policy has not been implemented optimally, likewise for the Implementation of Learning Regarding ESD, which is also included in the good category, even though it has the highest percentage compared to the other two aspects. Teachers are trying to carry out learning regarding ESD, but in practice, it has not been carried out optimally. It is also seen that the ESD Capacity Development aspect has not been carried out optimally because, based on the results obtained, this aspect is in a good category. Based on the results that have been described as a whole, it can be described that teachers feel that the implementation of ESD in schools has not been carried out optimally.

The application of ESD in education is very important to instill the value of scientific knowledge and skills (Nurjanah et al., 2019). Teachers as educators and teachers are certainly required to understand and implement ESD in learning at school. It can be seen from the research that it was found that the teacher assessed that the school as a whole had tried to implement ESD at school. However, when referring to each aspect used, the teacher considers that not all aspects have been implemented optimally in schools.

Based on the research results, these results must be of particular concern to aspects of implementing ESD policies that junior high school teachers in West Java have implemented. The results obtained for aspects of the implementation of the ESD policy that have been implemented are felt to be not optimal, meaning that the teacher has not felt the implementation related to the ESD policy in schools. Teachers have not participated in socialization activities nor reviewed policies regarding ESD. Prismasti (2021) states that there are various meanings in understanding the meaning of ESD in the school environment, referring to existing policies. This directs teachers to be prepared for all situations and

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conditions and to interpret ESD in a diverse school environment. This is also supported by research conducted by Saffanah & Hamdu (2023), which states that teachers must be ready to face any problems and challenges oriented toward ESD. However, other findings show that the implementation of ESD policies that have been implemented is still not good enough in terms of outreach or reviewing ESD policies, so teachers' understanding of ESD is still lacking. Based on this, to understand and implement policies related to ESD in schools, teachers need further strengthening by participating in socialization and policy studies related to the implementation of ESD in schools. These findings align with other research, stating that teachers need strengthening to understand policies for implementing ESD in the school environment (Rahmawati et al., 2021).

Understanding related to ESD policy is considered insufficient. Other findings show that in the field, teachers can understand ESD's values and goals. This shows that various meanings do not stop teachers from improving their understanding of values and goals to be achieved from ESD-based learning (Prismasti, 2021). In this study, the aspects of implementing learning regarding ESD have sufficient value even though they still need reinforcement. Teachers have tried to develop ESD lesson plans, organize ESD behavior movements, teach ESD topics in subjects, and integrate ESD into subjects. Teachers' understanding of ESD learning can be increased through the development of ESD-based learning tools, which can include components in the form of worksheets, lesson plans, teaching materials, learning media, and assessments; one example is the creation of modules (Brandt et al., 2022; Firda et al., 2023; Hamdu, 2021).

In addition to the two aspects mentioned above, the ESD capacity building section requires attention related to the implementation of ESD. In percentage terms, the ESD capacity development aspect is sufficient. One of the efforts to implement ESD in schools is to use ESD-based active learning strategies, assess students' ESD attitudes, practice ESD in daily life, collaborate with various parties in discussing ESD, and so on. Efforts that can be implemented in this regard are the development of ESD learning and appropriate assessments for teachers.

These efforts can be carried out to enrich the knowledge of teachers who still need much experience and can think critically about applying ESD from each other (Mogensen & Schnack, 2018; Rakhmayani & Hamdu, 2021). Other efforts can also be made, which have also been described in the research of Rosanti et al. (2022), which carried out focus group discussion (FGD) activities, training, and preparation of modules as a form of integration of ESD in the school environment, the FGDs carried out were an effort to be able to map the problems faced by teachers so that later teachers can collaborate in solving these problems.

Various methods and efforts can be made to maximize the implementation of ESD by teachers with the hope that ESD learning carried out in schools can be carried out optimally and achieve the expected goals. So that teachers feel that the implementation of ESD from the aspect of policies regarding ESD, changes in the implementation of learning, and capacity building has been carried out optimally and has had an impact on increasing human resources with sustainable competencies.

## 4. CONCLUSION

Teachers, as agents of change, need to have a good understanding and understanding of ESD so that the implementation of ESD in schools can be optimized. The different characteristics of teachers become a diversity that shows a picture of the implementation of ESD in schools. The teacher feels that, in general, the implementation of ESD in schools is in a good category, which means that it still needs further strengthening to be better

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implemented. Collaboration from various parties to increase the socialization of ESD policies is needed to realize the achievement of the 2030 SDGs through education. In addition, training, mentoring, or other similar activities are needed to improve the implementation of learning and capacity building regarding ESD. This is a strengthening effort that is possible to do, so it is hoped that there will be an increase in the implementation of ESD in schools in terms of managerial and learning activities.

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