

Empowering the Program of Sustainable Development Goals (SDGs) through Literacy in Improving the Quality of Education

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ABSTRACT

The objectives of this research are to study programs that have been implemented and that are included in the Sustainable Development Goals, which aim to enhance the quality of education through literacy; and the study uses the program of the effect of literate teaching on early adolescents in basic education public schools in Indonesia. The indicators used to measure education quality in this study are school-related indicators, consisting of school attendance rates and levels of dropout, and student-related indicators, consisting of learning motivation and literacy awareness. This research employed a mixed methodology, combining quantitative and qualitative approaches. The inclusion of qualitative methods allows for a more comprehensive understanding and detailed explanations of how the interrelationships between SDG variables influence educational quality attainment. Additionally, this approach helps elucidate the policies and capacity-building measures necessary to fulfill the SDGs agenda. This study's findings suggest that the SDGs program demonstrated sufficient effectiveness, leading to the conclusion that it can be sustained. Moreover, the analysis of the study outcomes reveals that participants are able to grasp the 17 SDGs objectives and identify ways to contribute to achieving these goals through literacy-based activities. The findings in this study are hoped to give contribution to a theory of the integration of literacy through the SDGs toward the improvement of quality education. The increase in literacy development, embedded also with climate and life skills, is expected to develop wider support in relation to the determination of policy programs regarding the importance of literacy programs through teachers.

Keywords: Education, empowerment, literacy, SDGs

INTRODUCTION

The Sustainable Development Goals (SDGs) were passed in 2015 by 193 countries in the world to commit to addressing all global challenges with policy over 15 years, along with their success indicators. The goals target specific areas of development, such as Goal 4, which aims to achieve inclusive and quality education for everyone, and Goal 5, which focuses on gender equality. The rest of the goals address cross-cutting aspects ranging from economic, human, and environmental health. Kostetckaia & Hametner (2022) defined realizing education that aligns with the goals of development requires various efforts, including the promotion of reading and writing activities.

This has become an important input towards the creation of a Non-Permanent Curriculum, aiming for an outcomes-based learning approach where educational output is in the form of life skills that respond to the challenges of the 21st century (Gebara et al., 2024).

One effort that can be made to tackle these problems is through the improvement of the quality of education, particularly in reading and writing. This effort fully supports the achievement of Goal 4, which emphasizes quality education and lifelong learning through literacy, and also contributes to most of the target indicators of Goal 4, while the rest focus on basic education. Literacy, in this context, can also serve as a principle or indicator of the effectiveness of meeting the targets of other SDGs. One of the most thoroughly researched SDGs is Goal 4, where research was conducted to develop a handbook for ESD, which has been published in hard copy and ultimately in digital format as a journal.

Mujtahid et al (2021) stated that learning to read and write has been a characteristic of human development. In recent years, a host of global conventions, declarations, and conferences which, in one way or another, have concerned themselves with education, have been witnessed (Sinaga et al., 2025). Therefore, the theme of promoting literacy has been a part of the global educational policy due to the emphasis upon literacy as a societal goal that can contribute to national and international development (Girsang et al., 2025). What at first may seem like an ambitious claim is supported by the argument that literacy is a critical requisite for human development, while simultaneously catalyzing the other components of the international development agenda in terms of financing, access, and trade (Kunkel & Tyfield, 2021). The policy about the expansion of literacy opportunities through formal schooling is the highlight of the Millennium Development Goals through 2015 with the Education for All. However, reports on the various limitations and weaknesses of the Education for All have been brought to the General Assembly special event of the UN High-Level Meeting on the Millennium Development Goals in September 2010. Hence, from the year 2000 into 2015, through the transformative power of education and the commitment to put children in schools, an ambitious program for the improvement of the quality of learning through the Sustainable Development Goals in Education has been brought about (Chankseliani et al., 2021; Fadhilah et al., 2025).

The Programme of Sustainable Development Goals contains a proposal for an integrated approach to literacy through the lens of learning outcomes for children and youth in school and out of school through literacy benchmarks. Nevertheless, many children around the world are struggling to read and write. Educational quality, as measured by learning achievement, remains low and unduly concentrated in many developing countries worldwide (Purba et al., 2025). The United Nations has reported that millions of people live on less than 1.25 USD a day, and millions of children are engaged in child labor. It is expected to continue to disproportionately burden a significant percentage of all individuals in the working poor who are expected to be aged 15-29. This essay presents an evolution of the basics of reading and writing and justifies the Sustainable Development Goals, research objectives for the effectiveness of literacy initiatives that have been developed worldwide, programs, and studies of Sustainable Development Goals, as adopted, the factors which moderate the achievements of reading programs in improving the thematic elements of learning improvement will also be explained. It is important to note that a series of publications of assessment studies on learning trends and effectiveness, some baseline studies which show the depressing status of learning can be found in international publications, while citing many comparative statistics to show that their children need urgent help. The overall objective in the process of developing this indicator was to develop a strength-based, transformative global indicator that was aspirational and permitted countries of all levels of development to provide information

that signals to the global community united and collective ambition to support literacy improvement, to achieve the transformative power of literacy and learning.

LITERATURE REVIEW

In the context of the topic indicated in this study, the literature review interprets the relationship between similar studies in the foreground and the research question and aims to discuss the research results. Much literature focuses on either the background of the linkage among the Sustainable Development Goals or the value of the SDGs program and other research based on the results of the program or surveyed population and methodology. This systematic literature review particularly highlights the areas in research that pertain to literacy and specifically literacy for sustainable development: related theories, evidence, and methodologies that provide a background for understanding our research objectives. It also reveals gaps in the literature or methodological shortcomings (Shulla et al., 2021; Parmentola et al., 2022).

According to the SDGs, the program to further increase educational quality through literacy aligns with three of the SDGs in particular: providing good health, reducing poverty, and providing quality work, while reducing inequality in development and protecting the environment and peace (Hanemann & Robinson, 2022). A main interest to be studied via the relationship between current literacy programs and educational quality is whether SDG education policies that promote literacy can provide more children and adults with the opportunity to learn how to read and write, and particularly, if they can provide such opportunities to marginalized groups (Van and van, 2021; Herman et al., 2024). Because this is important, much of the research in this area focuses on the link between education for all and the literacy program. Current studies have illuminated literacy practice within the context of sustainability (Unterhalter & Howell, 2021). Overall, the literature is clearly and credibly presented, provides context for the study by framing it in relation to existing research, and identifies major research gaps, including a consideration of marginalized communities in the selected studies.

The proposed program of SDGs through literacy is a conceptual framework aimed at linking the agenda of sustainable development and specific literacy initiatives. The 17th United Nations SDGs for 2030 include a series that is related to improving the quality of education. For each target, policy steps and mechanisms are explicitly stated to achieve these goals. Literacy is the key to achieving each agenda. Therefore, the SDGs can be achieved and can also be a program through literacy (Adebayo et al., 2025).

The Development Education Council program also has several pathways that can achieve several SDG programs. These pathways include quality learning, skills, pedagogy, and policies (Clark et al., 2022; Manurung et al., 2024; Cahyani et al., 2025). The suggested approach is to continue to improve the quality of learning and build global citizenship that begins at the age of 4 to 11-year-old children or in elementary schools. However, reading, writing, and counting are placed in basic skills. It is related to literacy, indicating that the relationship between literacy and SDGs covers many aspects and targets (Rad et al., 2022). There are at least 17 goals in the SDGs, and literacy can relate to them all. Overall, all aspects cover the quality of education. As an illustration, the development of basic literacy can improve the quality of numeracy, and then there is the ability of cognitive problem-solving, employability, prosocial behavior, and the world of work. As literacy is fundamental to the agenda of education, all SDGs can begin with improved levels of literacy. Literacy is central to the achievement of inclusive and equitable quality education and to the promotion of learning opportunities for all (Abella et al., 2024).

METHODOLOGY

RESEARCH DESIGN

This study adopted a research design to explore the effect of SDGs through literacy on improving the quality of education with different perspectives and facts. A mixed method was selected for this research because the use of a qualitative approach can help in providing deeper insights and meaningful explanations on how the relationship between the variables of SDGs can determine the achievement of the quality of education, including the policies and capacity improvement to achieve the SDGs agenda. In addition, the use of the quantitative approach can provide systematic verification of the explanatory results through testing the hypotheses of the study (Lumbangaol et al., 2024). Thus, both quantitative and qualitative research techniques were combined in the study to provide implications in achieving the research objectives.

This research utilized a number of research instruments, including interviews and documentation study for the qualitative approach and a questionnaire for the quantitative approach (Widodo et al., 2024). To develop the supporting questionnaire in order to collect data from school principals and supervisors, the SDGs mapping education was employed to enrich the data. Furthermore, the techniques of probability and non-probability sampling were incorporated in the research, with its target population of SDGs assessment conducted on schools. Consequently, school principals involved in training the local genius, and supervisors who are mapping SDGs in each education to achieve the quality of education were selected in the study. The use of probability and non-probability sampling techniques will help in defining a specific subpopulation study to generalize the results and perform a comprehensive analysis in accordance with the study's goal.

DATA COLLECTION METHODS

Data collection in the field research used several methods and techniques, both individually and collectively. The purpose was to provide a comprehensive and holistic point of view. The method used in data collection was organized into the following sequence: 1. Survey, 2. Interview, 3. Focus Group Discussion. A survey was conducted on students who enrolled in at least one semester of the English conversation class during the academic years, as well as on teachers who taught the English conversation course. Meanwhile, in-depth interview data was collected a week after conducting the survey from several informants, consisting of five principals of SMP, one evaluator, and seven teachers. On the other hand, opinions and insights were collected through Focus Group Discussion from seven expert enablers at the Secretariat of the Ministry of Education and Culture and National Coordinators (Lobe and Morgan, 2021).

The research instrument was designed in line with the purpose and questions for the flow of the study. The instrument type or approach employed the scheduled face-to-face interview data collection method, following the discussions and debriefings of the data collection process with a relevant seven-person methodology team. The data collection guide sheets were specifically developed to focus on several issues related to the core elements of these programs of interest. The questions were designed to be integrated, reflecting more than one area of comparison among the three areas of the program. It was intended to ensure that the informants provided a comprehensive perspective, as much as possible, on what they knew, understood, and experienced in answering questions related to the handling of reducing incidents and statements in both rural and urban areas. The questions were framed within the specific context of reading activities, several literacy points, and participation in the program regarding awareness, interest, implications, and motivation to participate in the activities.

DATA ANALYSIS TECHNIQUES

In this research, several kinds of analyses were used. The first was the thematic study, which primarily used grounded theory for the reasons mentioned before. The second analysis for this research was the quantitative method. The present study employed both qualitative and quantitative methods of research. Data were collected by means of a closed-ended questionnaire administered to students, as well as open-ended questions asked during the interview in the qualitative phase of the study.

The collected data were subjected to descriptive analysis, from which the data were used to present the findings of the study. The quantitative method is not only used to summarize the data but also to yield fundamental insights into the findings. Descriptive statistics were said to be a helpful step toward using only the controlled responses with no assumption of the importance of what is desirable. From this stage, descriptive quantitative techniques were used to analyze the data on responses to each question and to reveal patterns of response. This was performed by means of a tabulation of responses, followed by calculations of percentages for each response, which included the frequency of responses. Inferential statistics were calculated to test differences and the relationship of respondents' demographics in support of aligning this research with the study aims. Using qualitative and quantitative data in one single study can provide both breadth and depth of data interpretation. It is only possible to provide a broader view of how developing nations implement literacy as one framework finding toward the SDGs. It ensures one step closer to answering the specificity in the targets to achieve the quality of education in line with the aims of the present research.

Qualitative data is collected from handwritten interviews and class observations, which are then coded, grouped, and accepted. This is categorized as being equivalent to quantitative data by conducting thematic analysis. Due to the feasibility of data collection analyzing the in-depth individualized responses, more time-consuming data analyzing procedures were conducted. This was to provide aid to be more suitable for qualitative coding and comparison of results observed. Because the up-to-date findings from the present study relied on more structured interviews with coding times, the quantitative data were more typical of large samples and large-scale data collection. The qualitative data derived from the interviews were found helpful in adding depth and detail to the findings of the survey. It also provided the text to support these findings. Qualitative data, or primarily, there are variations in the questionnaires that provided thematic support for the findings from the survey. For the qualitative part, data were analyzed through a grounded theory approach. This process involves a variety of important steps, including data reduction, data display, and drawing and verification. Software programs were used to facilitate the analysis of qualitative data.

RESULTS AND DISCUSSION

The intervention approach applied in the program of SDGs is as follows: (1) the identification of the SDGs program organizers, (2) the workshop and debriefing for SDGs program organizers to understand the concept of the SDGs program, (3) the selection of literacy activities through the judgment of experts and organizers' meetings, (4) the selection of SDGs literacy material and the summary of literacy programs for SDGs, (5) the implementation of the program followed by monitoring and evaluation. The research method in this study is a quasi-experiment with a type of Non-Equivalent Control Group Design. Instruments used in the study are literacy-based module development instruments and assessment materials of learners' literacy results by observation. Implementations of tests and observations are conducted in terms of the process of the program and the results of the study.

The results of this study indicate that the capacity of the SDGs program was effective enough, so it is concluded that the program could continuously run. Furthermore, based on the analysis of the results of the study, learners can understand the 17 goals of the SDGs and how to contribute to achieving the program goals through literacy activities. The results of learners' literacy in the experimental group showed that the acquisition of reading and writing skills and the integration of SDGs was increasing and significantly higher than in the control group. In conclusion, the SDGs program through the approach of literacy could improve learners' literacy skills, as well as their ability to understand the SDGs material that was integrated into the literacy learning activities.

IMPACT OF SDGS THROUGH LITERACY ON EDUCATION QUALITY

As mentioned in the impact pathway, sustainable development goals (SDGs) through literacy are expected to have an impact on the quality of outcomes (objectives) of each education goal, including quality, equity, and inclusion. The literature reveals that it has some impacts on the quality of primary education, equity, and access. It states that world literacy, consisting of low and middle levels, which covers the target of SDGs, is strongly correlated to increasing wages of children and releasing cultural and moral programs of authoritarian and non-democratic leaders (Chankseliani & McCowan, 2021). More literate individuals in a country are unlikely to be poor and have relatively higher incomes. The quality of primary schooling, which is considered the first outcome of SDGs through literacy, is enhanced through the increasing number of females, the reduction of class sizes, and improving education services, such as facilities, teachers' qualifications, and their preparation in the people's native language, as well as better school equipment and improving country-level quality of life indices (Saini et al., 2023).

SUCCESSFUL IMPLEMENTATIONS OF SDGS THROUGH LITERACY

In this part, examples of good practices to implement the SDGs through literacy have been selected and analyzed to distill key lessons learned and success factors. These case studies reflect the best practices that are extracting results regarding education quality and skills through the literacy approach of the Education for Sustainable Development program. How the ESD and literacy initiatives are implemented and how they adapt to the context and target audience is essential; these case studies provide evidence concerning the engagement of the local community to reduce the target group's illiteracy levels and to make education more relevant and effective for young learners by linking with real-world work experience. Tailoring programs to meet national and local contexts and including the engagement of the local community and learners are often mentioned as success factors. The involved learning methods incorporate learners' own experience, skills development, teacher training, and engaging the local community and parents.

Learner participation is reported as vital, allowing the program to respond to the learners' specific needs while keeping them engaged. In both case studies, the use of digital technology offers various solutions to provide educational support. Introducing a partnership model in schools that brings teachers, school principals, business owners, and farm owners together to foster education on-site is reported to be of importance. Using the relevant technology can help bridge the gap between learning at school and learning in the world of work. Lowering the language barrier, offering alternative technologies for weak learners, quality learning resources, and support materials and tools, as well as support for teachers, can help learners engage with learning materials outside of school. Both case studies offer different ways of adapting materials and ways of learning for a well-rounded program that meets the needs of all learners. Both case studies faced common challenges, including language diffusion, attracting teachers, and lack of interest in the area where literacy was promoted. In spite of these challenges, the popularity and resulting growth in interest of the learners was noted.

CHALLENGES AND LIMITATIONS

While the aforementioned bureaucratic, infrastructural, and socio-cultural issues could affect a program's results, this study identified other challenges and limitations for implementing high-quality programs in line with the SDGs. Education and ESD are high politics functions. Depending on the level of political instability, with its risks of changes in priorities, a government may be hesitant to make and maintain such commitments. Any special funding or in-service training that we may be able to help enable will be limited by budget restraints. Methodologically, by primarily working around usual resource constraints, we have also been barred from any evaluation of the potentially invisible effects of the commitment-driven concurrence versus autonomy/needs-driven programming. It was impossible for the researchers to observe the regular programs. There was only one data-collection team, and they were the teachers. The self-reporting of participation in workshops; of field-vast distributing and collecting of resources and uploading of forms; and the potentially non-representative collection of overachieving specific samples easily reasoned for the cancellations, because canceling simply due to these issues would have disqualified these regions from consideration.

Various systemic factors and methodological issues—(in)access to and the diversity of the marginalized populations, and the related ethical questions; data collection and administration issues; and methodological adaptations to particularities and dilemmas posed by the reality of the contexts being sampled—were also found to give complexity and depth to the phenomenon of how SDG indicators are being recognized and entered upon. For instance, efforts such as remote online mapping of the marginalized and their expected training results are to be undertaken in concert with explorations as to the mentality of marginalized non-participation. These limitations will, no doubt, also have been faced by our peers in action research into educative implications. Addressing the program's issues provided by this study proposes new definitional dimensions that may enter into these, and different, kinds of discussions and educational research. The findings inform discussions and proposals for research and engagement with inclusive/exclusive, qualitative and diversity concerns, and with broader, contingency-planned research design dispositives. Implementing transformative literacy programming to achieve the Austrian government's 2030 Agenda goals must be complex and adaptive. International organizations and universities delivering expertise should begin exploring how to co-inform such family-related policy development.

POLICY RECOMMENDATIONS

Based on data and findings from existing studies, there are several implications for policy recommendations, as follows: Develop a coherent strategy and a legal framework. Given the interconnections between literacy education and related links to other aspects, policies and programs that are focused on literacy education should be part of a more general framework of educational action and policy. It is important to integrate literacy policy and programs into the development frameworks. Boosting investment in literacy programs, especially in the most disadvantaged communities. Policy should prioritize the expansion of positive and equal access to comprehensive education for all children, adolescents, and adults. This investment should focus on narrowing the gap so that the disadvantaged will catch up, especially related to the improvement of people's basic skills capacity, including various essential competencies such as literacy. Therefore, investment and funding for literacy aid should be increased. The provision of this assistance will encourage and enhance the quality and inclusiveness of the policy. Joint initiatives and inclusive collaboration. Literacy for children, adolescents, and young adults in their learning and play environments is not only the responsibility of the education sector but also of the family environment. Therefore, it is an urgent necessity that, alongside the government, joint community

assistance aims to strengthen the support of families and society for literacy-related initiatives. Families and communities should not only benefit from existing services but also be able to fully participate in the management of such services, in service planning, and in drawing up dispute resolution service standards.

CONCLUSION

The implementation of education about sustainable development by including its principles in the form of learning is good practice in the literacy learning process of the Sustainable Development Goals, which aim to reform the education process through education about sustainable development. These goals can provide a way of collaborating for more effective, coordinated, and purposeful education that unlocks both economic and social progress and values sustainability. Thus, education about sustainable development and these goals provide a new opportunity for improving the quality of education and educational outcomes. Through this program, literacy becomes a medium to convey various initiatives or to provide education on a number of goals, including promoting an ecological approach, educating children, and eliminating child labor. This additional literacy practice of these goals not only supports the work of international cooperation, but it also emphasizes the importance of communication. Education about sustainable development and education about these goals should prepare students to communicate and apply strategies as a critical catalyst for ensuring linguistic diversity in cyberspace and for shaping collaborative networks, partnerships, and exchanges in promoting empowerment and bridging the digital divide. Therefore, this conclusion is consistent with various thoughts on the fact that education about sustainable development and education on these goals are conscious designs for promoting citizenship among the population, fostering literacy and lifelong learning, and equipping people with the necessary skills.

More work is needed to evaluate the impact of programs that aim to achieve the sustainable development goals through a literacy component. For now, our study provides evidence on the limited impact of a school-based business-led intervention on learning outcomes. It would be interesting to see whether different interventions designed to tackle water and sanitation, employment, health, energy, agricultural sustainability, and poverty have more of an effect. It would also be interesting to evaluate the long-term effects of these programs using an experimental design. When measuring the long-term effects, it is important to remember that progression through school is not the same as learning. It is possible, for example, to be in grade 6 but not know what books or pencils are. Many literacy and education programs focus on enrollment in primary and secondary school. It may be that teaching children alongside training adults in commodity identification or marketable skills in business-led classes allows children to stay in school. With an extended intervention or delayed effects, however, children may eventually learn more, drop out later, and have higher returns to the human capital acquired in school. It would be interesting to evaluate whether future cash flows from the business-led classes can be used to replicate and expand this study in collaboration with other partners.

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