Diversitas Journal
ISSN 2525-5215
Volume 9, Issue Special 1 (jan./mar. 2024) p. 0106 – 0120
https://diversitasjournal.com.br/diversitas_journal

The Integration of Sustainable Development Goals in the Secondary Science Curriculum of Cordillera Administrative Region

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ABSTRACT

3Schools play a crucial role in education for sustainable development. The aims of this study are to determine the extent of the incorporation of the Sustainable Development Goals (SDGs) in the secondary science curriculum and the extent of knowledge and attitude of science teachers regarding SDGs. The research design was concurrent triangulation mixed method. Purposive sampling was used in the selection of the science curriculum while convenience sampling was used in determining the participants for the survey and focus group discussion. The locale of the study is at Cordillera Administrative Region, Philippines. The rubric for analyzing the content of the secondary science curriculum was based on the Curriculum Framework for SDGs, and its specific indicators. A questionnaire for knowledge and atitude of teachers about SDGs was used. Frequency and percentage were used to determine the cluster and dimensions of SDG-related competencies. Mean and standard deviation were used to analyze the extent of knowledge and attitude of science teachers about the 17 SDGs. Findings show that the clusters of the SDGs related competencies of the Junior High School science curriculum are 51.61% knowledge, 21.29% values, and 21.19% skills. This means that pupils are equipped with the knowledge they need to effectively use for cognitive processes like comprehension and reasoning skills. Many of the cognitive abilities we want our learners to acquire are inextricably linked to their content knowledge. The dimensions reveal 14 learning competencies for social, 25 environmental, and 23 economic. This implies that students are taught the interconnection of social, ecological and economic issues and strives to prepare students to act positively in an interconnected world. Furthermore, the extent of knowledge of science teachers regarding SDGs is high (M = 3.10, SD = 0.15) while the attitude is very positive (M = 3.46, SD = 0.09). Pearson correlation indicates weak positive correlation between the two variables, r=.37 while regression test showed significant correlation between knowledge and attitude, r=.37, p=0.03. Therefore, due to the inclusive nature of the SDGs, they are a great tool for expanding the science curriculum by giving real-world scenarios and life skills. SDGs are also helpful teaching resources that offer depth and perspective to scientific lessons. Teachers can add more depth to their lesson plans using the different SDGs to develop the learner into a well-informed citizen able to make a difference in the community.

ARTICLE INFORMATION

Article process:
Submitted: 10/25/2024
Approved: 03/14/2024
Published: 03/14/2024

CC BY

Keywords
education, mixed method, knowledge, attitude, Philippines

RESUMO

As escolas desempenham um papel crucial na educação para o desenvolvimento sustentável. Os objetivos deste estudo são determinar a extensão da incorporação dos Objetivos de Desenvolvimento Sustentável (ODS) no currículo de ciências do ensino secundário e a extensão do conhecimento e atitude dos professores de ciências em relação aos ODS. O desenho da pesquisa foi o método misto de triangulação concorrente. A amostragem proposital foi utilizada na seleção do currículo de ciências, enquanto a amostragem de conveniência foi utilizada na determinação dos participantes para a pesquisa e discussão em grupo focal. O local do estudo é a Região Administrativa da Cordilheira, Filipinas. A rubrica para análise do conteúdo do currículo de ciências do ensino secundário baseou-se no Quadro Curricular para os ODS e nos seus indicadores específicos. Foi utilizado um questionário para conhecimento e atitude dos professores sobre os ODS. Frequência e percentual foram utilizados para determinar o cluster e as dimensões das competências relacionadas aos ODS. A média e o desvio padrão foram utilizados para analisar o grau de conhecimento e atitude dos professores de ciências sobre os 17 ODS. Os resultados mostram que os grupos de competências relacionadas aos ODS do currículo de ciências do Ensino Médio são 51,61% de conhecimento, 21,29% de valores e 21,19% de habilidades. Isso significa que os alunos estão equipados com o conhecimento necessário para usar de forma eficaz em processos cognitivos, como habilidades de compreensão e raciocínio. Muitas das capacidades cognitivas que queremos que os nossos alunos adquiram estão inextricavelmente ligadas ao seu conhecimento do conteúdo. As dimensões revelam 14 competências de aprendizagem sociais, 25 ambientais e 23 económicas. Isto implica que os alunos aprendam a interligação das questões sociais, ecológicas e económicas e se esforça para preparar os alunos para agirem positivamente num mundo interligado. Além disso, o grau de conhecimento dos professores de ciências sobre os ODS é elevado (M = 3,10, DP = 0,15), enquanto a atitude é muito positiva (M = 3,46, DP = 0,09). A correlação de Pearson indica correlação positiva fraca entre as duas variáveis, r=0,37 enquanto o teste de regressão mostrou correlação significativa entre conhecimento e atitude, r=0,37, p=0,03. Portanto, devido à natureza inclusiva dos ODS, eles são uma excelente ferramenta para expandir o currículo de ciências, proporcionando cenários do mundo real e competências para a vida. Os ODS também são recursos didáticos úteis que oferecem profundidade e perspectiva às aulas científicas. Os professores podem aprofundar os seus planos de aula utilizando os diferentes ODS para transformar o aluno num cidadão bem informado, capaz de fazer a diferença na comunidade.

Palavras-chave
educação, métodos mistos, Conhecimentos, atitudes, Filipinas

DOI: 10.48017/dj.v9iSpecial1.2835

Introduction

The outbreak of the Covid-19 pandemic, catastrophic climate change, and gross inequality in access to quality education has raised challenges for the academic sector to implement the Sustainable Development Goals (SDGs) of the United Nations. The Philippines' poverty rate increased between 2015 and 2018. There were around 17.7 million Filipinos who had insufficient income to meet their basic needs last 2018, compared to 17.6 million in 2015 (Philippine Statistics Authority (PSA), 2020a). In 2017, approximately 39.2 million Filipinos were out-of-school for various reasons, including family matters and the high cost of education (PSA, 2018). Furthermore, natural disasters such as earthquakes and typhoons claimed 12,097 lives in the Philippines between 2010 to 2019 (PSA, 2020a). With the following statistics on poverty, disaster casualties, and an increasing number of children being out of school, the education sector is all the more challenged to create long-term, sustainable changes.

Since 1992, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) has promoted Education for sustainable development. Due to the global problems the world is facing, the demand for education for sustainable development (ESD) has never been so strong (Rieckmann, 2017). This is why educational institutions are encouraged to incorporate SDGs into the curriculum.

The crucial role of education in environmental awareness was thoroughly examined at the Tbilisi conference in 1977. At this conference, the goal established for environmental education was that the "*ecology curriculum should develop a clear awareness of, and concern for, economic, social, political, and ecological interdependence*" (United Nations,2015; Leicht et al., n.d.). Furthermore, according to a report published in 2016, the "17 Sustainable Development Goals contain at least one objective that involves learning, training, educating, or at the very least raising awareness of core sustainable development issues" (UNESCO, 2016). This means that education is a catalyst for sustainable development and an agent of change.

Therefore, this research aimed to look into the extent of incorporating the 17 SDGs in the science curriculum provided by the DepEd and the knowledge and attitude of science teachers in Cordillera Administrative Region (CAR) regarding SDGs, as there is no national published data on the said topic. Only international data are available. Thus, this research gap was explored in this study.

The specific objectives of this research are the following: What learning competencies of the Junior High School Science curriculum are related to the clusters and dimensions of SDGs? What is the extent of knowledge and attitude of Science teachers regarding the SDGs? Is there a significant correlation between knowledge and attitude of science teachers regarding SDGs?

Literature Review

The United Nations' call for the education sector to be highly engaged in pursuing sustainable development goals implies that all schools should have unrivaled opportunities for teaching and research in education for sustainable development (Leal Filho et al., 2019). The following are the research that displays SDG inclusion in the school's curriculum.

In Spain, an elementary school incorporated energy and waste concepts into its curriculum, focusing on cognitive knowledge and understanding. At the same time, a secondary school in Spain also integrated science activities into their curriculum that contributed to the achievement of social, economic, and environmental aspects of the SDGs (Queiruga-Dios et al., 2020). Martinez-Borreguero et al. (2020) also encouraged schools to promote attitudes and behaviors that contribute to SDG achievement by including them in the school's curriculum.

In addition to Spain, Sweden has also included sustainable development education as a guiding method for high school teaching. Their curriculum includes economic, social, and environmental areas, and the results show that it positively affected the learner's awareness of sustainability (Olsson et al., 2016). Likewise, in Indonesia, their science curriculum is mandated to improve students' thinking ability to make decisions on science issues affecting their society (Widiyawati, 2020). Another country that supports sustainable development education is South Africa. It incorporates indigenous knowledge, practices, and sustainability principles into its science curriculum (Mandikonza, 2019).

According to research, higher education has also made many efforts to implement SDGs into their curriculum despite the many challenges in incorporating the different goals into the system (Ramos et al., 2015). In Portugal, tertiary education focuses on the social and economic aspects, with the environment being the least developed; nevertheless, issues such as waste segregation, recycling and waste reduction plans are still fully implemented in their schools (Aleixo et al., 2018). This is also true in the Philippines, where college students believe that their school has practiced proper waste management, recycling, composting, tree planting, and energy conservation to promote long-term development (Labog, 2017).

Although incorporating the Sustainable Development Goals into the science curriculum is evident worldwide and transcends all levels of education, educators face challenges in implementing sustainable development education in their schools. The following researches provide evidence of the apparent struggles of teachers.

According to Cebrián et al. (2015), teachers would normally lack knowledge and understanding, resources, and time to implement sustainable development education in their classroom. Verhulst and Lambrechts (2015) support this finding by stating that the integration

process of sustainable development is hampered by a lack of resources, support from colleagues, and demotivation. Correspondingly, teachers in Namibia demonstrated a lack of understanding of the critical education for sustainable development on maturing people's values and attitudes required to advance sustainable and caring use of the environment for their benefit and the future generations (Anyolo et al., 2018). Similarly, Sunthonkanokpong and Murphy (2019) claimed that teachers have a low awareness of sustainability knowledge, such as the impact of water scarcity and energy production. Moreover, according to Sammalisto et al. (2015), only a few teachers demonstrate comprehensive, long-term thinking regarding sustainability education.

The philosophical underpinnings of sustainable development can be traced back to the theory of dialectical development of harmony between nature and man. E. Laszlo, a system philosopher, believed that man is related to nature and man is related to man (Pan, 2019). While preserving and expanding diversity, this philosophy believes that global integration and human solidarity should be promoted to overcome the crisis of a deteriorating environment through collective efforts (Pan, 2019).

Deep ecology is another philosophical underpinning of sustainable development whereby a philosopher asks deeper questions regarding his relationship with the environment, metaphysics of ethics rather than environmental ethics, and having an activist approach in dealing with the destruction of the environment (Jonge, 2017). These theories led to the philosophy of "Green Economic," developed in the 1980s by Costanza, Daly, and Norgaard. The green economy is a trend of economic science that asserts that economics is a dependent component of the natural environment in which it exists (Ivlev & Ivleva, 2018). It is the solution to the modern ecological problem within the framework of the sustainable development theory (Ivlev & Ivleva, 2018).

The following philosophies served as a springboard for developing legal mandates for education for sustainable development to support the United Nations' efforts to achieve all of the sustainable development goals. In 2012, the United Nations promoted education for sustainable development by the Decade's goals (2005-2014), believing that only education and learning can bring about the critical change that the world requires (Leicht et al, n.d.).

Methodology

Research design:

A concurrent triangulation mixed-method research approach was used in this study. This is a single study that includes both qualitative and quantitative data and is carried out

simultaneously. This procedure is used to check, cross-validate, or confirm results. It also aids in the expansion of quantitative data by allowing open-ended qualitative data collection (Pardede, 2019).

Data Sources:

The science curriculum synthesized in this study is from the Department of Education's K to 12 Basic Education Curriculum, used in public and private schools in the Philippines.

Participants:

Teachers from science high schools in the CAR were invited to participate in this research. There were 33 teachers who willingly took part in this endeavor. Convenience sampling was used as participation of the teachers in the said research is purely voluntary.

Ethical consideration:

The participation of the respondent was entirely voluntary. No one was forced to participate in the study. Regardless of their voluntary participation, they were informed that they could withdraw their participation at any time or stop answering the questionnaire if they felt the questions were too intrusive. Their identities and responses were kept private because including names in the questionnaire was optional. The researcher provided the study's objectives in the questionnaire. Moreover, it was also included in the consent form attached to the questionnaire that they should contact the researcher to mitigate any negative impact if they feel uncomfortable while completing the survey. Before scheduling the focus group discussion, the respondents' consent was sought. The flow of the program and the set of questions to be asked were sent to them ahead of time to prepare for the said event. Additionally, their permission was secured before recording the discussion. The participants were given a modest gesture of appreciation for their active participation and valuable time.

Instruments and data analysis:

The rubric for analyzing the content of the secondary science curriculum was based on the Curriculum Framework for SDGs, and the specific indicators for each SDG as defined by SDG Tracker. This framework was developed to support the implementation of the 2030 Agenda and the Commonwealth Secretariat's Strategic Plan by reinforcing links between the SDGs through a holistic life-course approach spanning early childhood, secondary, and tertiary education. It adheres to a competency development model that combines knowledge, skills, values, and attitudes (Osman et al., 2017).

The rubric developed from these sources is a set of knowledge, skills, and values. This methodology is patterned from the research of (Tatlilioğlu 2019). This list of knowledge, skills, and values competencies was validated by three experts from Life and Physical Sciences.

The survey questionnaire used is a four-part questionnaire. Part A contains the informed consent, Part B represents the respondent's profile, Part C contains knowledge indicators, and Part D contains attitude items. Parts C and D each had 17 indicators or items that represent the 17 SDGs. The instrument for both knowledge and attitude was adopted from the research of Sunthonkanokpong and Murphy (2019). However, minor changes were made to the instrument to accommodate the study. Cronbach's alpha was used to measure the consistency and coherence of responses.

Frequency and percentage were used for objective 1 to determine the cluster and dimensions of SDG-related competencies. Furthermore, graphs and charts depict the distribution of DepEd competencies according to the clusters and dimensions of SDG.

Mean and standard deviation was used to analyze objective 2 regarding the extent of knowledge and attitude of science teachers about the 17 SDGs. A 4-point Likert scale was used to categorize the participants' responses. Pearson Moment of Correlation was used for objective 3 to examine the association between the extent of knowledge and science teachers' attitudes about the 17 SDGs.

Findings

Clusters of Sustainable Development Goals Related Competencies

The different clusters of SDGs are knowledge, skills, and values. These clusters are anchored on the learning framework model of 2030. It identifies the knowledge, skills, and values that learners need to acquire to reach their full potential and contribute to their communities' well-being. Results shows that 51.61% of the competencies are knowledge, 24.19% values, and 24.19% skills.

Dimensions of Sustainable Development Goals Related Competencies

The different dimensions of the SDGs are social, environmental, and economical. This is based on the three pillars model of sustainable development. According to this paradigm, sustainability can only be realized when all three pillars work together and support each other (Purvis et al., 2019). The results of this objective reveal that there are 14 SDG-related learning competencies under social, 25 are environmental, and 23 are economical.

Extent of Knowledge and Attitude of Science Teachers regarding Sustainable Development Goals

Science teachers' knowledge regarding sustainable development goals is from "Strengthening environmental education in public and private schools," otherwise known as the Department Order 52 series of 2011 of DepEd. It encourages teachers to instill awareness in students regarding environmental issues and spurs learners to preserve and protect the

environment. Table 1 presents the extent of knowledge of science teachers regarding SDG. As gleaned from the table, the result is high (M = 3.10, SD = 0.15).

Table 1
Knowledge of Science Teachers regrading SDGs (n=33)

SDG	Mean	SD	Interpretation
1	2.94	0.61	High
2	3.03	0.59	High
3	3.21	0.60	High
4	3.33	0.65	Very High
5	3.06	0.61	High
6	3.21	0.60	High
7	3.00	0.66	High
8	2.97	0.68	High
9	2.97	0.64	High
10	2.88	0.65	High
11	3.33	0.65	Very High
12	3.06	0.79	High
13	3.27	0.72	Very High
14	3.27	0.72	Very High
15	3.21	0.74	High
16	3.00	0.75	High
17	3.00	0.71	High
TOTAL	**3.10**	**0.15**	**High**

Department Order 52 series of 2011 of DepEd is also the framework from which the attitude of science teachers regarding sustainable development is anchored. Table 2 presents the gathered results from the survey. As seen in the table, the attitude of science teachers regarding SDGs is very true for me (M = 3.46, SD = 0.09).

Table 2
Attitude of Science Teachers regrading SDGs (n=33)

SDG	Mean	SD	Interpretation
1	3.52	0.51	Very true of me
2	3.48	0.51	Very true of me
3	3.52	0.51	Very true of me
4	3.58	0.50	Very true of me
5	3.45	0.51	Very true of me
6	3.58	0.50	Very true of me
7	3.39	0.56	Very true of me
8	3.39	0.61	Very true of me
9	3.36	0.60	Very true of me
10	3.55	0.51	Very true of me
11	3.52	0.51	Very true of me

12	3.45	0.51	Very true of me
13	3.42	0.56	Very true of me
14	3.30	0.68	Very true of me
15	3.52	0.57	Very true of me
16	3.48	0.57	Very true of me
17	3.30	0.64	Very true of me
TOTAL	**3.46**	**0.09**	**Very true of me**

Correlation between knowledge and attitude of science teachers regarding SDGs

The third objective of this research is to determine the relationship between the knowledge and attitude of science teachers regarding SDGs. The result is presented in Table 3. A Pearson product-moment correlation coefficient was computed to assess the relationship between knowledge and attitude of teachers regarding SDGs. Results show a weak positive correlation between the two variables r=.37, n=33.

Table 3
Correlation between Knowledge and Attitude of Teachers about SDG

Variable	***n***	***M***	***SD***	**Knowledge**	**Attitude**
Knowledge	**33**	**3.10**	**0.15**	**1.000**	**.37**
Attitude	**33**	**3.46**	**0.09**	**.37**	**1.000**

A simple linear regression test was conducted to determine whether there is a significant correlation between the knowledge and attitude of science teachers regarding SDGs. Table 4 shows that there is a significant correlation between the knowledge of science teachers regarding SDGs (M=3.10, SD=0.15) and attitude (M=3.46, SD=0.09), $r(31)$=.37,p=0.03. Therefore, this finding leads to the rejection of the null hypothesis since the p-value (0.03) is less than alpha (0.05).

Table 4
Regression Test

Variable	***Coefficient***	***Standard Error***	***Pearson correlation***	***t Stat***	***P-value***
Intercept	2.48	0.44		5.60	3.88
Knowledge	0.32	0.14	.37	2.25	0.03

Discussion

Many of the cognitive abilities people want their learners to acquire are inextricably linked to their content knowledge. When students acquire facts, they are gaining knowledge and the ability to use that knowledge to draw inferences and solve issues in the community, which are pieces of evidence of skill competencies. Moreover, teaching students to learn through a cycle of action and reflection results in a deeper appreciation, understanding, compassion, and empathy for the community. Therefore, the impact is greater when knowledge, skills, and values are emphasized together.

This research corroborates the results of Tatlilioglu (2019) and Kanapathy et al. (2019), whereby the distribution of learning competencies in the secondary science and chemistry curriculum is more on knowledge than skills. Moreover, the Malaysian chemistry curriculum reveals that students have strong knowledge of environmental SDGs, but it is not reflected in the students' behavior. Therefore, it is necessary to educate students with the three dimensions such as knowledge, skills, and values to assist them in putting into practice what they have learned inside the classroom.

The DepEd Junior High School science curriculum teaches concepts regarding the three clusters of SDGs. For the environmental cluster, examples of the topic found in the DepEd Biology curriculum guide are the interaction of organisms with the environment, collaborative action to preserve the ecosystem in the locality, and ways to minimize human impact on the environment. In the case of the Earth Science curriculum, topics being tackled are how human activities affect the atmosphere and demonstrating ways to ensure disaster preparedness during earthquakes, tsunamis, and volcanic eruptions.

The finding of this research is corroborated by the response of one of the science teachers stating that "*problems in the community like climate change and ecosystems are common topics in my subject*." Therefore, it is evident that topics advocating the preservation of the ecosystem and awareness of climate change are explored and discussed in the classroom. Furthermore, this research corroborates the findings of Valderrama-Hernandez (2019) and Kanapathy et al. (2019), whereby students in Spain grow to be more responsible community members because the curriculum teaches them more about environmental and sustainability issues. Likewise, in Malaysia, students are taught about the environmental dimensions of the SDGs coupled with the other two pillars, namely the social and economic aspects.

Moving on to the economic dimension, the DepEd Chemistry curriculum explores factors affecting rates of chemical reactions applied in food preservation and materials production. For the Physics curriculum, lessons on energy transformation in various activities and how electrical energy is generated, transmitted, and distributed are explored. These topics

are evident in the response of one of the science teachers, saying, "*I have the most knowledge about consumption and production and methods of generating energy in our community*." The result for the economic cluster corroborates the research of Rahayu et al. (2021), stating that SDGs regarding sustainable consumption and production patterns and access to affordable, reliable, sustainable, and modern energy for all are integrated into the science subject of Indonesia.

Moving on to the social dimension, the DepEd Chemistry curriculum tackles issues on solving community problems using available local materials. At the same time, the Biology subject discusses activities that communities engage in protecting and conserving endangered species and how changes in the environment affect species extinction. Moreover, the Earth science curriculum explores ways to sustainably use the earth's resources.

Therefore, the topics discussed regarding the environmental, economic, and social dimensions of SDGs are intertwined and support each other as any changes made in the environment will affect the entire system. According to Garcia et al. (2017), education is a means to explore and stress the 17 SDGs and how interconnected they all are. Moreover, Mazza (2021) states that any action's economic, social, and environmental aspects are interconnected. Considering only one of these at a time leads to errors in judgment and unsustainable outcomes. Therefore, it necessitates learners' ability to act in difficult situations long-term and sustainable manner. Therefore, the DepEd science curriculum strives to prepare students to act positively in an interconnected world.

The science teachers who participated in this study are well-versed in the SDGs, and their knowledge of sustainable education is not an abstract idea. This finding is attributed to the response of one of the science teachers stating, "*SDGs about clean water, efficient energy, climate change, and the ecosystems are common topics in my subject*." Another science teacher states, "*I am most knowledgeable about SDGs regarding clean water, and industry-related greenhouse gases because I was able to teach these topics in the field of Earth science, and I was able to learn it in the subject ecology*." This research further corroborates the research of Garcia-Gonzalez et al. (2020) and Omisore et al. (2017), stating that the majority of the pre-service teachers in Spain and academic staff in Nigeria showed good knowledge of the different SDGs.

The attitude of science teachers towards the SDGs is very positive. This finding is attributed to several science teachers' responses, such as, "*It compels me to take these SDGs to heart and hope that I could instill values and care to what I currently have access to and share the same values; to my students*." Another response says, "*during calamities like typhoons, we see to it as a family to give a small help in these affected areas by typhoon by donating food, water, and clothes*." These science teachers are willing to go out and help when

necessary because, as one teacher puts it, "*it is unavoidable to think of people who are ill, malnourished, and poor*."

The results of this research corroborate the research of Sunthonkanokpong and Murphy (2019) research, citing that teachers' attitudes and actions regarding the SDGs are higher than awareness. This outcome is also consistent with Ruiz-Garzon and Vidal (2021), stating that teachers fully understand the environmental problem concerning water as caused by human behavior and that its effects impact society.

While both knowledge and attitude variables tend to go up in response to one another, the relationship is not very strong as only 12% of the attitude of science teachers is affected by the increase in the knowledge of the SDGs. This research supports the work of Marcos-Merino et al. (2020) and Borges (2019), whereby the correlation analysis reveals positive associations between sustainability knowledge and attitudes among the participants in Spain and Portuguese. This is also validated by the result of the survey where the attitude of the teachers concerning SDGs are all very positive, and thus they have reached the highest level of empathy towards all the 17 SDGs. Nonetheless, science teachers will not be prevented from providing further assistance to challenging students when the need arises because, as one teacher puts it, "*these SDGs compels me to really take this into heart to and hope to instill value and care to other people*."

Conclusion

Data suggest that the Junior High School science curriculum promotes social, environmental, and economic issues. The curriculum aims to unify the three elements, as the SDGs will only be successful if all three pillars operate together.

For the extent of science teachers' knowledge regarding SDGs, results show that it is high. As SDGs are an ideal filter through which to broaden and enrich the Curriculum their high knowledge of the topics of SDGs are instruments in enriching lesson plans.

Regarding the attitude towards the SDGs, results show that science teachers' attitude is very positive. Empathy motivates them to reach out to students who require assistance to ensure that students become resilient and teach them how to develop long-term solutions for problems evident in the community.

Moreover, findings show a weak positive correlation between knowledge and attitude of science teachers regarding SDGs. As a result, increased knowledge will have a minor impact on science teachers' attitudes. The results demonstrate that they already have a very positive

attitude toward achieving the 17 SDGs. This is the highest level of empathy educators should model to their students.

Lastly, due to the inclusive nature of the SDGs, they are a great tool for expanding the curriculum map by giving real-world scenarios and life skills. The SDGs are helpful teaching resources that offer depth and perspective to scientific lessons, from lengthy facts and figures to the individual targets that make up each goal. Since teachers show high awareness and empathy to SDGs, they can add more depth to their lesson plans using the different SDGs and will not regard it as an additional work to be included in the curriculum but rather see it as an opportunity to develop the learner into a well-informed citizen able to make a difference in the community.

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