Jurnal Teknologi Pendidikan, December 2024, 26 (3), 1121-1131
DOI: http://dx.doi.org/10.21009/JTP2001.6
p-ISSN: 1411-2744 e-ISSN: 2620-3081
Accredited by Directorate General of Strengthening for Research and Development
Available online at http://journal.unj.ac.id/unj/index.php/jtp

Critical Portrait of Vocational High School Accounting Teachers' Sustainable Awareness in Indonesia

Sri Sumaryati[1(*)], Elvia Ivada[2], Asri Diah Susanti[3], Lies Nurhaini[4]
[1,2,3,4]Program Studi Pendidikan Akuntansi, Universitas Negeri Surakarta, Surakarta, Indonesia

Received : November 12, 2024
Revised : December 21, 2024
Accepted : December 31, 2024

Abstract

Sustainability education's primary goal is to form a generation that cares about their actions' environmental and social impact, Education teaches students to think critically and responsibly towards the surrounding environment. Therefore, as the spearhead of education, teachers must be aware of sustainability education, so that they can teach it to their students Hence. This research explores the knowledge, attitudes, and behaviors towards sustainable awareness, especially in accounting teachers, and analyzes the interdimensional relationship to sustainable awareness. This research uses a quantitative approach with a survey type of research. The data source for this study is 277 Vocational High School accounting teachers from the program of the institution's accounting and finance expertise, consisting of 239 females, and 38 males. They all participated in Teacher Professional Education at Universitas Sebelas Maret Surakarta in 2023. The instrument used in this study is the *Sustainability Consciousness Questionnaire* (SCQ), developed by Gericke et al. in 2019. As a result of this study, teachers have knowledge about sustainable awareness that is followed up with sustainable attitudes and behaviors even though they are not optimal. This result can be seen from the high average score on knowledge of sustainable awareness, not followed by a high score on sustainable attitudes and behaviors. The study results show that each component's scores are 3.44, 3.17, and 3.13. This means that knowledge of sustainable awareness is not balanced with sustainable attitudes and behaviors.

Keywords: Continuous awareness; sustainable knowledge; sustainable attitude; sustainable behavior; Accounting Teacher

(*) Corresponding Author: srisumaryati@staff.uns.ac.id

How to Cite: Sri Sumaryati, Ivada, E., Susanti, A. D., & Nurhaini, L. (2024). Critical Portrait of Vocational High School Accounting Teachers Sustainable Awareness in Indonesia. *JTP - Jurnal Teknologi Pendidikan*, *26*(3), 1121–1131. https://doi.org/10.21009/jtp.v26i3.51380

INTRODUCTION

Since the end of *the Millennium Development Goals* (MDGs) in 2015, at the UN General Assembly in September 2012, the UN has agreed on the 2030 Sustainable Development Goals (SDGs) agenda. At the session, 169 countries committed to realizing the SDGs target by prioritizing three development dimensions: economic growth, social equity, and environmental protection. As one of the countries committed to implementing the SDGs, Indonesia adopted the SDGs through Presidential Regulation Number 59/2017 concerning the Implementation of the Achievement of Sustainable Development Goals, revised into Presidential Regulation Number 111/2022.

In this Regulation, one of the goals of the SDGs is to ensure inclusive and equitable quality education and increase lifelong learning opportunities for all. From this goal, it is evident that education is one of the critical sectors that must be

considered to realize sustainable education. Marcos-Merino et al. (2020) state that education is the right step to achieve sustainability, so it is necessary to educate teachers to achieve a sustainable and long-term change in behavior and attitude to achieve a sustainable future. Through education, it is hoped that they will be able to develop the knowledge, skills, values, and attitudes necessary to create a more sustainable future. The impact of this activity is an increase in human awareness of how to act towards the environment and society, fostering a sense of responsibility and environmental ethics among students. This impact is corroborated by Yilmaz, Yilmaz, & Mumcu., (2022), that through sustainability education, individuals are encouraged to adopt more environmentally friendly and sustainable behaviors in their daily lives, such as waste reduction, efficient energy use, and responsible consumption.

According to Wibowo, et al., (2022), vocational education has become an integral part of many national development policies because of its impact on human resource development, competitiveness, and economic growth, and continues to be one of the most important factors in the growth of a nation. Similarly, Goel and Vijay (2011) explain that vocational education contributes significantly to the economic progress of developing countries through the development and production of human resources that are responsive to the collective demands of industry, society, and the global community. This strengthens the position of vocational education as a form of education that emphasizes developing job skills. Kennelly et al. (2012) and Owens (2013) assert that vocational education graduates can only develop their job skills sustainably if teachers are responsible for facilitating and coordinating learning so that students understand the principles of sustainability, content, and pedagogy. This reinforces the opinion that teachers and schools must develop and expand their curriculum integrated with sustainability education at all levels of education (Chinedu, et al., 2023).

Accounting teachers, as a part of vocational education, are one of the individuals who play an important role in educational activities in schools, it is highly expected to be able to carry out this continuous awareness intervention to their students. However, the results of research by Calero et al. (2019) and Parry & Metzger (2023) inform that teachers are still not optimal in promoting the importance of sustainable development. There are several obstacles related to this, one of which is the low sustainable culture of teachers and the lack of concern of teachers for solving environmental problems, a sense of belonging to the environment, and others. On the contrary, teachers prioritize knowledge over ethical values, positive attitudes towards sustainability, and management of other sustainable attitudes. Therefore, it can be understood that teachers need to understand continuing education holistically to integrate sustainability, namely *sustainability awareness* (SC), to evaluate continuing education projects that include environmental, social, and economic dimensions (Olsson et al., 2019).

The SC concept has been developed by Swedish researchers at the University of Karlstad. This researcher uses SC as a criterion or measure to study the effects of implementing continuing education in schools. They describe SC as a concept that integrates environmental, social, and economic dimensions of sustainability. In addition, the involvement of knowledge aspects about sustainability, attitudes, and behaviors in each of these three dimensions was also

examined." (Olsson et al., 2016). Boeve-de-Pauw et al. in Kalsoom, Q., Khanam, A., & Quraishi, U. (2017) define the concept of SC as a composite concept that unites content in environmental, social, and economic issues, as well as psychological constructions related to knowledge, attitudes, and behaviors related to these issues. Furthermore, this concept developed by Gericke et al. (2019) was studied through a research instrument called the *Sustainability Consciousness Questionnaire* (SCQ), which measures knowledge, attitudes and sustainable behavior for each teacher, as seen in Table 1. There are two versions of such an SCQ, the long and short versions. We employ the first one as this study intends to obtain a more comprehensive portrait of Vocational High School (VHS) accounting teacher's sustainability awareness.

The SCQ was developed to measure overall sustainability awareness and the readiness of current generations regarding sustainability issues. Previous research explained a positive relationship between students' environmental knowledge and environmental awareness (Anđić & Vorkapić, 2019). Low knowledge regarding sustainability awareness can cause students to lack information that is the basis for behaving in a way that does not harm the environment. Similarly, Zeeshan & Qureshi, 2022 stated that a low level of environmental knowledge is a factor that influences a person to ignore the implications of daily behavior on his environment. In addition, overall, the results of sustainability awareness research conducted through the implementation of zero-waste programs and camera science action have a relatively high level of sustainability awareness (Arrifa, 2021; Colás-Bravo, 2024).

In this regard, Marcos-Merino et al. (2020) conducted a study on knowledge about sustainable awareness, sustainable attitudes and sustainable behavior by taking a sample of primary education teachers in Spain. This study indicates a positive relationship between knowledge about sustainable awareness and sustainable attitudes. In contrast, sustainable behavior positively relates to both constructs, so this study recommends teaching sustainability to seek behavior change at the primary education level. Furthermore, in their research, García-Muñio et al. (2024) found that sustainability knowledge does not directly increase readiness for ESD but is one of the strong predictors in teaching sustainability. In addition, this study also highlights the importance of conceptual understanding in building teachers' confidence and competence in sustainability education.

Based on the explanation above, this study aims to explore the knowledge, attitudes, and behaviors toward sustainable awareness, especially in VHS accounting teachers, and to analyze the interdimensional relationship to sustainable awareness. There are several specific goals that the research needs to achieve. Firstly, to describe the sustainable awareness of accounting teachers, including their three constructs in the three dimensions of sustainable awareness (environmental, social, and economic). Secondly, to describe the relationship between continuous consciousness constructs.

METHODS

This research uses a quantitative approach with a survey type of research. The data source for this study is 277 VHS accounting teachers from the institution's

accounting and finance expertise program. Approximately 86.3% are female, with an average age of 30-50 years and 81.6% are from Java. The instrument used in this study is the *Sustainability Consciousness Questionnaire* (SCQ), developed by Gericke et al. in 2019. SCQ consists of 49 items with a Likert scale that includes three dimensions, namely knowledge (16 items), social (14 items), and economics (19 items). These sections reveal what the public knows as essential characteristics of sustainable knowledge, attitudes towards sustainable awareness, and sustainable behaviors, which are then organized into nine sub-sections, as seen in Figure 1 below.

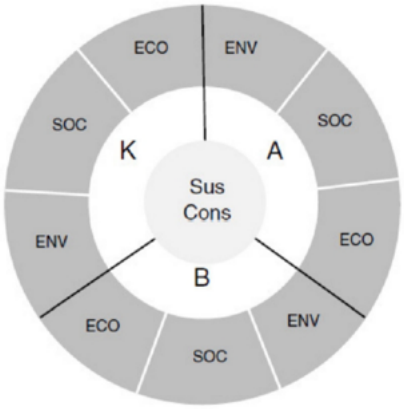

Figure 1. Three parts of sustainability awareness by the items of SCQ (sustainability knowledge – K; sustainability attitude – A; sustainability behavior – B) and nine subsections (in the environmental dimension – ENV; Community dimension – SO; economic dimension – ECO). Source: Gericke, 2019

The data analysis technique used in this study is a descriptive statistical analysis technique to determine the profile of knowledge, attitudes, and behaviors toward the continuous awareness of accounting and finance teachers of institutions. In addition, the Pearson correlation analysis technique was also used to determine the relationship between the research variables.

Table 1. The Data of Continuous Awareness of Accounting Teachers refers to the *Sustainability Consciousness Questionnaire*

Knowledge about sustainable awareness		Weight Factor	Mean	SD
ENV	K7 Sustainable development demands that we humans reduce all sorts of waste.	0.560	3.555	0.532
	K14 Preserving the variety of living creatures is necessary for sustainable development (preserving biological diversity	0.602	3.613	0.489
	K18 Sustainable development requires a shift to renewable natural resources	0.678	3.571	0.497
	K21. For sustainable development, people need to be educated on how to protect themselves against natural disasters.	0.755	3.454	0.517
SOC	K2. Improving people's chances for a long and healthy life contributes to sustainable development.	0.790	3.487	0.502

	K8. People who exercise their democratic rights are necessary for sustainable development (for example, they vote in elections, involve themselves in social issues, and express their opinions).	0.680	3.361	0.533
	K9. Reinforcing girls' and women's rights and increasing equality worldwide is necessary for sustainable development.	0.793	3.412	0.494
	K10 Respecting human rights is necessary for sustainable development	0.777	3.597	0.493
	K11. To achieve sustainable development, everyone in the world must have access to good education.	0.758	3.571	0.497
	K15 Having respect for other cultures is necessary for sustainable development.	0.667	3.563	0.515
	K20 For sustainable development, major infectious diseases such as HIV/AIDS and malaria must be stopped	0.740	3.429	0.497
	K12 Sustainable development requires that companies act responsibly towards their employees, customers, and suppliers.	0.698	3.513	0.502
	K16. Sustainable development requires a fair distribution of goods and services among people in the world.	0.666	3.445	0.532
ECO	K17 Wiping out poverty in the world is necessary for sustainable development.	0.748	3.353	0.514
	Sustainable development demands that people understand how the economy functions.	0.728	3.361	0.548
sustainability attitude				
	A5i I think that using more natural resources than we need does *not* threaten the health and well-being of people in the future.	0.734	3.353	0.497
ENV	A10. I think that it is important to take measures against problems that have to do with climate change.	0.663	3.403	0.557
	A19i I think it is OK for each of us to use as much water as we want.	0.700	3.387	0.506
SOC	A2. We who are living now should ensure that people in the future enjoy the same quality of life as we do today.	0.791	3.454	0.500
	A3. I think that companies are responsible for reducing the use of packaging and disposable articles.	0.592	3.487	0.519
ECO	A8 I think that companies in rich countries should give employees in poor nations the same conditions as in rich countries	0.691	3.546	0.500
Sustainability behaviour				
	B1. Where possible, I choose to cycle or walk when I'm going somewhere instead of traveling by motor vehicle.	0.549	3.378	0.504
ENV	B3 I recycle as much as I can.	0.620	3.378	0.567
	B8i I don't think about how my actions may damage the natural environment.	0.666	3.303	0.545
	B4 When I use my computer or phone to chat, text, play games, and so on, I always treat others with respect just like I do in real life	0.799	3.353	0.480
SOC	B5i I often make lifestyle choices that are not good for my health.	0.677	3.420	0.560
	B15 I support an aid organization or neighborhood group	0.656	3.487	0.550

B17 I show equal respect to men and women, boys and girls	0.845	3.387	0.506
B6 I do things that help the poor	0.853	3.445	0,516
B9 I often buy second-hand goods over the internet or at Eco stores (thrift stores or eco-friendly stores)	0.701	3.445	0.548
B11 I avoid buying goods from companies with a bad reputation for safeguarding their employees and the environment	0.427	2.655	0.682
B16 I watch news programs or read newspaper articles related to economics.	0.303	2.983	0.596

RESULTS & DISCUSSION

Based on Figure 1, it can be analyzed that accounting teachers in VHS give the highest scores in the dimension of sustainable knowledge compared to scores on sustainable attitudes and behaviors. The result can be seen in the average score of the sustainable knowledge dimension of 3.44 (the average item is between 3.40 and 3.47). Furthermore, the average score of sustainable attitude was 3.12 (average items between 3.06 and 3.25), and sustainable behavior was 3.13 (average items between 3.06 and 3.20). In the knowledge dimension, even though it is the highest score compared to the other two dimensions, it still shows a score that is not optimal for sustainable knowledge. This result can be seen in the awareness that protecting the environment is not optimal (score 3.40). In this dimension, one of the essential findings is that accounting teachers in VHS still need to increase their awareness about the use of clean water according to needs, which is shown by the acquisition of a score of 2.8 in the K-3 item which asks teachers' awareness to reduce water consumption is needed for sustainable development.

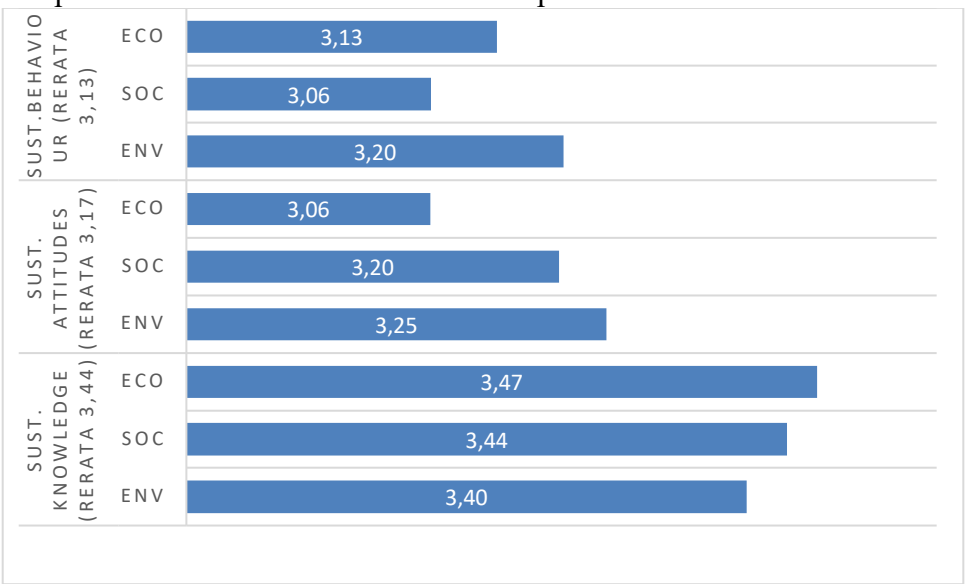

Figure 1. Description of the continuous awareness of accounting teachers in three dimensions: Continuous awareness

On the other hand, teachers already have a good awareness of the importance of preserving various living things/preserving biodiversity for sustainable development (score 3.61). The research supports the finding from Nousheen & Tabassum (2024), which shows that the dimensions of sustainable knowledge and attitudes are higher than those of sustainable behavior. In their study, Nousheen took a sample of 753 public school teachers in Pakistan.

In the dimension of sustainable attitudes, what needs to be considered based on the results of this study is that accounting teachers in VHS are not entirely convinced that sustainable development will affect poverty (score 2.25). However, they realized that people who pollute the soil, air, or water have to pay for the environmental damage they cause. Furthermore, in the dimension of sustainable behavior, accounting teachers in VHS, an interesting thing to observe is that the level of sustainable behavior of teachers is in the range of 3.13 to 3.38 scores. This finding shows that teachers already have an awareness of how to behave in terms of sustainable development.

Based on figure 1 shows that there is an imbalance between sustainable knowledge, sustainable attitudes, and behaviors. This imbalance can have a variety of negative impacts, both for individuals and the institutions where they work. Afroz et al., (2020) explained several consequences that occur to individuals, including knowledge that is not accompanied by appropriate attitudes and behaviors that can cause individuals not to apply sustainability principles in their daily lives. This means that even if a person understands the importance of sustainability, without supportive attitudes and behaviors, that knowledge will have no real impact. This imbalance also affects the institution, in this case, the school. Schools will be constrained in implementing policies. Ferguson, et al., (2021) explained, that if employees have knowledge about sustainability but do not have supportive attitudes and behaviors, the sustainability policies implemented by the institution may not be effective. This can hinder the achievement of the organization's sustainability goals. The long-term effects of this imbalance can hinder innovation and adaptation to market changes that increasingly demand sustainable business practices, thus affecting the performance and competitiveness of institutions in the long run. Therefore, to achieve effective sustainability, individuals and institutions need to strike a balance between knowledge, attitudes, and behaviors. This can be done through comprehensive sustainability education, so that it can help form supportive attitudes and behaviors, and the knowledge gained can be applied in real life in daily actions.

The relationship between Continuous Consciousness Constructs

It can be seen from Figure 2 that the variable of the dimension of continuous knowledge affects sustainable attitudes, with a score of 7,488. This relationship means that the higher a person's level of knowledge about sustainability, the more positive their attitude towards sustainable practices will be. In other words, a better knowledge of sustainability increases individual awareness and propensity to support and engage in actions that support sustainability. This model shows that in-depth and comprehensive knowledge of sustainability is essential in shaping a positive attitude toward sustainability. Increased knowledge of sustainability's economic, environmental, and social aspects can significantly increase individuals'

positive attitudes toward sustainability efforts, ultimately supporting more sustainable behavior change. The implications of the results of this study are in line with the results of research by Baena-Morales et al. (2021) and Cebrián et al. (2019), which stated that if an individual has good knowledge about the negative impacts of environmental change, they tend to have a more positive attitude towards efforts to prevent environmental change. Additionally, if someone understands the economic benefits of sustainable business practices, such as energy efficiency and waste reduction, they are more likely to support sustainable business policies and practices (Gulzar et al., 2023).

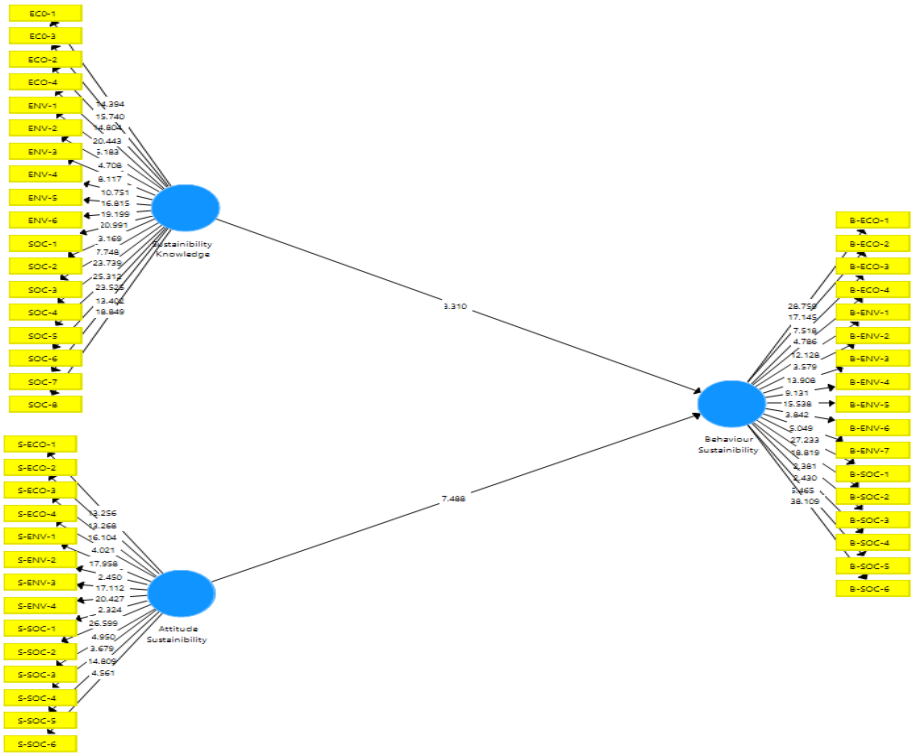

Figure 2. The influence of sustainable knowledge, sustainable attitudes towards sustainable behavior

Furthermore, Figure 2 also informs about the relationship between sustainable attitudes and sustainable behaviors. The figure shows that the dimension of sustainable attitude affects sustainable behavior with a value of 3,310. The relationship infers that individuals' attitudes toward sustainability significantly influence their behavior regarding sustainability. The path coefficient value of 3,310 indicates how strongly sustainability attitudes affect sustainability behavior. The more positive an individual's attitude towards sustainability is, the more likely they are to engage in behaviors that support sustainability.

In the instrument developed by Gerikle et al. (2019), sustainable attitudes in this study are measured through indicators such as economic attitudes (S-ECO), environmental attitudes (S-ENV), and social attitudes (S-SOC) towards sustainability, reflecting a person's views and tendencies to support and engage in good practices that support sustainability, in this case including economic,

environmental, and social attitudes towards sustainability. Furthermore, sustainable behavior, which is measured by economic behavior indicators (B-ECO), environmental behavior (B-ENV), and social behavior (B-SOC) towards sustainability, is a real action taken by individuals who support sustainability in the economic, environmental, and social fields.

Based on the *theory of planned behavior* developed by Ajzen (1999), human behavior is determined by the intention to perform the behavior, which is influenced by three main components: attitudes towards behavior, subjective norms, and perceived behavior control. In this study, attitude towards sustainability is a positive attitude towards sustainability, such as appreciating the importance of protecting the environment and increasing individual intentions to behave sustainably. While subjective norms are social pressures and the influence of people around them, such as family and friends who also support sustainability, can reinforce this intention, and behavioral control is perceived as the individual's belief that they are capable of implementing sustainable actions, such as recycling or the use of renewable energy, reinforcing the relationship between intention and behavior.

This study's pathway coefficient of 3,310 showed that positive attitudes toward sustainability significantly improved sustainability behaviors. This finding is consistent with the SDGs, where a positive attitude towards a particular action will increase intentions and behaviors that support those actions. Furthermore, if reviewed from the Value-Belief-Norm (VBN) Theory developed by Stern et al. (1999), pro-environmental behavior is believed to be influenced by a series of values, beliefs, and norms internalized by individuals. In this context, values are fundamental individual values, such as concern for the environment and social justice, that encourage individuals to adopt a positive attitude toward sustainability (Raman et al., 2023). Beliefs are the beliefs that individual actions significantly impact the environment and global sustainability, and personal norms are internalized norms that encourage individuals to act according to their attitudes and values. According to VBN, a positive attitude towards sustainability (*attitude sustainability*) is formed by a person's fundamental values and beliefs (Onel, 2024). This attitude then creates strong personal norms to behave sustainably (Saleem et al., 2023). This relationship is shown by a score on a path coefficient of 3,310, which shows the strength of this relationship, where positive attitudes towards sustainability result in behaviors that support sustainability. This study's findings support the findings of Olmos-Gómez et al. (2019) and Colás-Bravo (2018), who explain that values strongly support the formation of norms in a community.

CONCLUSION

The conclusions of this study show that attitudes towards sustainability significantly affect sustainability behavior, which is in line with the predictions of SDGs and VBN. The SDGs explain how attitudes affect intentions and behaviors, while VBNs provide a framework of values and norms that underlie these attitudes. Combining these two theories strengthens our understanding of the importance of developing a positive attitude toward sustainability to encourage behaviors that support sustainability. Education and interventions that emphasize sustainability

values, increase confidence in individual impact and reinforce social norms can effectively shape sustainable behaviors.

ACKNOWLEDGEMENT

We would like to thank LPPM Universitas Sebelas Maret (UNS) for supporting the research grant. LPPM UNS funds this article with a Research Assignment Agreement Number 194.2/UN27.22/PT.01.03/2024 entitled The Integration Sustainability Education into The Accounting Curriculum in Indonesia.

REFERENCES

Afroz, N., & Ilham, Z. (2020). Assessment of knowledge, attitude and practice of University Students towards Sustainable Development Goals (SDGs). *The Journal of Indonesia Sustainable Development Planning*, *1*(1), 31-44.

Anđić, D., & Vorkapić, S. T. (2017). Teacher education for sustainability: The awareness and responsibility for sustainability problems. *Journal of Teacher Education for Sustainability*, *19*(2), 121-137.

Arrifa, F. H. (2021). Pengaruh Proyek Zero Waste School Terhadap Kesadaran Berkelanjutan dan Keterampilan Berpikir Kritis Siswa SMA. Universitas Pendidikan Indonesia.

Baena-Morales, S., Ferriz-Valero, A., Campillo-Sánchez, J., & González-Víllora, S. (2021). Sustainability awareness of in-service physical education teachers. *Education Sciences*, *11*(12), 798.

Calero, M.; Mayoral, O.; Ull, M.A.; Vilches, A. La educación para la sostenibilidad en la formación del profesorado de ciencias experimentales en Secundaria. Ens. Cienc. 2019, 37, 157–175.

Cebrián, G., Pascual, D., & Moraleda, Á. (2019). Perception of sustainability competencies amongst Spanish pre-service secondary school teachers. *International Journal of Sustainability in Higher Education*, *20*(7), 1171-1190.

Colás-Bravo, P., Magnoler, P., & Conde-Jiménez, J. (2018). Identification of levels of sustainable consciousness of teachers in training through an e-portfolio. *Sustainability*, *10*(10), 3700.

Ferguson, T., Roofe, C., & Cook, L. D. (2021). Teachers' perspectives on sustainable development: the implications for education for sustainable development. *Environmental Education Research*, *27*(9), 1343-1359.

García-Muñio, P., Agullo-Torres, A. M., Del Campo-Gomis, F. J., & Arias-Navarro, I. (2024). Environmental Consciousness of High School Teachers and Their Opinion about the Importance of Environmental Education for Sustainability: Differences on Sociodemographic Factors. *Journal of Sustainability Research*, *6*(2).

Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2019). The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development. *Sustainable Development*, *27*(1), 35-49.

Gulzar, Y., Eksili, N., Caylak, P. C., & Mir, M. S. (2023). Sustainability consciousness research trends: A bibliometric analysis. *Sustainability*, *15*(24), 16773.

Kalsoom, Q., Khanam, A., & Quraishi, U. (2017). Sustainability consciousness of pre-service teachers in Pakistan. *International Journal of Sustainability in Higher Education*, *18*(7), 1090-1107.

Marcos-Merino, J. M., Corbacho-Cuello, I., & Hernández-Barco, M. (2020). Analysis of sustainability knowingness, attitudes and behavior of a Spanish pre-service primary teachers sample. *Sustainability*, *12*(18), 7445.

Nousheen, A., & Tabassum, F. (2024). Assessing students' sustainability consciousness in relation to their perceived teaching styles: an exploratory study in Pakistani context. *International Journal of Sustainability in Higher Education*.

Olmos-Gómez, M. D. C., Estrada-Vidal, L. I., Ruiz-Garzón, F., López-Cordero, R., & Mohamed-Mohand, L. (2019). Making future teachers more aware of issues related to sustainability: An assessment of best practices. *Sustainability*, *11*(24), 7222.

Olsson, D. (2018). *Student sustainability consciousness: Investigating effects of education for sustainable development in Sweden and Beyond* (Doctoral dissertation, Karlstads universitet).

Onel, N. (2024). Transforming consumption: The role of values, beliefs, and norms in promoting four types of sustainable behavior. *Journal of Consumer Behaviour*, *23*(2), 491-513.

Parry, S., & Metzger, E. (2023). Barriers to learning for sustainability: a teacher perspective. *Sustainable Earth Reviews*, *6*(1), 2.

Raman, F. I., Hutagalung, F. D., & Rahman, M. N. A. (2023). Sustainability consciousness among pre-service teachers at the Institute of Teacher Education Malaysia: Expert review and exploratory factor analysis. *Geografia-Malaysian Journal of Society and Space*, *19*(4), 105-118.

Saleem, A., Aslam, S., Sang, G., Dare, P. S., & Zhang, T. (2023). Education for sustainable development and sustainability consciousness: Evidence from Malaysian universities. *International Journal of Sustainability in Higher Education*, *24*(1), 193-211.

Yilmaz, B., Yilmaz, Z., & Mumcu, E. (2022). Investigation of teachers' views on the environmental education and sustainable consciousness. *Journal of European Education*, *12*(1-2), 1-16.

Zeeshan, M., & Qureshi, N. (2022). Exploring the perceptions and practices of pre-service teachers for environmental consciousness in Punjab. *Journal on Innovation and Sustainability RISUS*, *13*(2), 124-134.