

**Maklumat Artikel:**

**Peroleh:** 28 April 2025 **Semak:** 15 Oktober 2025 **Terima:** 20 Oktober 2025 **Terbit dalam Talian:** 28 Oktober 2025

\*Corresponding Author: raden@segi.edu.my

## **The Perception of Implementing Sustainability in Communication and Creative Design Coursework on Undergraduate Students**

Raden Ajeng Kartini Nazam Nazam<sup>1</sup>, Catherina Ugap<sup>2</sup>, Noor Izzati Nadia Mohd Zainal<sup>3</sup>,  
Sharifah Dayana Wan Abu Bakar<sup>4</sup>, Fathin Nur 'Izzah Mohd Taslim<sup>5</sup>

<sup>1, 3, 4, 5</sup> School of Communication and Creative Design (Creative Design), SEGi University,  
Kota Damansara, Selangor, Malaysia

<sup>2</sup>Department of Creative Multimedia, Faculty of Art, Sustainability and Creative Industry,  
Universiti Pendidikan Sultan Idris, Tanjung Malim, Perak, Malaysia

**To cite this article (APA):** Nazam, R. A. K. N., Ugap, C., Mohd Zainal, N. I. N., Wan Abu Bakar, S. D., & Mohd Taslim, F. N. 'Izzah. (2025). The Perception of Implementing Sustainability in Communication and Creative Design Coursework on Undergraduate Students. *KUPAS SENI: Jurnal Seni Dan Pendidikan Seni*, 13(2), 117-128. <https://doi.org/10.37134/kupasseni.vol13.2.10.2025>

### **ABSTRACT**

Climate change has increased the need for eco-friendly and sustainable practices. These changes have influenced numerous industries in preparing the younger generation for future employment needs, particularly in architecture, design, and urban development. It equips students with innovative skills to create a more sustainable future. Therefore, integrating sustainability has become a crucial and major focus, especially in higher education. However, there is a lack of research on the implications of implementing sustainability into Communication and Creative design coursework for undergraduate students. This study explores the significance of sustainability in education and how students perceive its implementation in their coursework. Researchers will investigate student perceptions and identify their challenges in implementing sustainability, assessing the overall impact on their educational experience. In-depth interviews with Communication and Creative Design students will be conducted to delve into their views on sustainability implementation and to map out the thematic landscape of sustainability in their studies. Findings show that implementing sustainability into Communication and Creative Design coursework enhances students' critical thinking, creativity, and employability. Challenges such as limited resources and inconsistent curricula must be addressed for full implementation, preparing students for sustainability-focused careers. The implications of this study are relevant to education in creative design programs as it can help tailor teaching methods and coursework to support students in coping with new changes and provide insights into their skills. Additionally, it can enable educators to evaluate student performance and enhance the curriculum to support sustainable learning outcomes.

**Keywords:** Sustainability; Perception; Communication; Creative Design; Undergraduate

### **INTRODUCTION**

Greening the curriculum is part of the initiative to support the UN 2030 Agenda for Sustainable Development, with higher institutions seen as bridges to educate and advocate for society. This approach fosters innovative generations that can ensure sustainable living (Gozin & Hatami, 2023). Higher Education for Sustainable Development (HESD) is widely acknowledged as a crucial tool for advancing and supporting a sustainable future. For individuals, higher education represents the final formal stage of learning, where they can enhance the knowledge and skills necessary for sustainable development and strengthen their capacity for lifelong sustainable learning. At a societal level, higher education serves as a critical indicator of social progress, as higher education institutions (HEIs)

produce new knowledge and prepare future leaders (Li et al., 2023). Ying et al. (2023) suggest implementing sustainability through campus practices like water conservation and recycling. Integrating sustainability into communication and design coursework prepares future professionals to promote sustainable practices in their fields. However, practical implementation of theoretical concepts presents challenges, especially in developing countries striving to meet the UN 2030 Agenda (Zhao & Cheah, 2023). Additionally, the challenge of measuring sustainability in academic initiatives persists due to limited resources (Mohd Isa et al., 2021). Idoiaga Mondragon et al. (2023) emphasise that integrating sustainability requires a shift in traditional teaching methods, which demands strong support and participation from academic teams. This study investigates how sustainability is implemented in Communication and Creative Design courses, exploring student perceptions and challenges and offering insights into the impact of sustainability education on curriculum transformation. More research is needed on the perception of sustainability integration in communication and creative design coursework, particularly regarding its impact on undergraduate students. This study aims to analyse how sustainability principles are implemented into these courses and to identify the challenges students face when engaging with sustainability in their coursework.

The research will address the following questions:

- a. How do Communication and Creative Design students perceive the integration of sustainability in their coursework?
- b. What challenges do communication and creative design students face when integrating sustainability into the coursework?

Furthermore, this study highlights the relevance of integrating sustainability principles into communication and creative design courses. Sustainability principles are often incorporated into educational courses to teach students about intricate environmental problems and develop a sense of oversight. The thoughtful integration of sustainability into coursework has implications for shaping students' perspectives, steering their creativity, and enhancing their educational experience.

### **Sustainability in Education**

With the growing global emphasis on sustainability, its integration into education has become vital for advancing a sustainable future. UNESCO's 2021 report outlines its goal of embedding environmental education into curricula worldwide by 2025, stressing the urgent need for educational systems to adopt sustainability practices on a global scale (UNESCO, 2021). This initiative reflects the pressing need for a shift in how educational institutions approach sustainability, ensuring that future generations are equipped to address environmental challenges. Recent research highlights the importance of sustainability in higher education. Sibbel (2020) emphasises that higher education institutions are crucial in shaping public awareness and fostering a sustainable future. This mirrors initiatives like the Talloires Declaration, which, as Clugston and Calder (2020) noted, was a critical milestone in developing sustainable universities. This declaration, led by Tufts University President Jean Mayer, gathered 22 university leaders in Talloires, France, to address global environmental issues and outline steps for higher education to promote sustainability. The declaration recognised the need for universities to build awareness and equip students with the necessary skills to tackle environmental challenges and foster a culture of sustainability within society. Despite these ongoing efforts, the challenge of effectively embedding sustainability into educational systems still needs to be addressed. Leal Filho et al. (2021) argue that achieving a transformative shift towards a comprehensive and integrative approach to sustainability education requires systemic changes within universities. As Sterling (2022) notes, while higher education institutions have started to move in this direction, much work remains in developing strategies to ensure sustainability becomes a core aspect of education rather than a peripheral concern.

## **Perception**

The concept of sustainability gained momentum in the early 1970s as environmental degradation was recognised as a significant threat to long-term prosperity. Leal Filho et al. (2021) highlight that many institutions still resist change despite decades of efforts to integrate sustainability into higher education. However, progress is evident as students, faculty, and administrators increasingly join the global movement to incorporate sustainability into education. Although transformation is not yet fully realised, these efforts indicate that meaningful reforms are underway. A study by Boca and Saracli (2020) examined Romanian students' perceptions after participating in environmental education. While students demonstrated high awareness of environmental issues, their behaviour towards sustainability was notably weaker, partly due to their belief that the media exaggerated the severity of environmental problems. The research also identified factors like cultural influences, volunteerism, and recycling habits as key to shaping sustainable attitudes. Boca and Saracli (2020) concluded that these elements are essential for guiding environmental education, emphasising the need for programs that foster awareness and action.

## **Communication Studies**

The broad area of communication studies examines how people make and understand meaning in various contexts, mediums, and cultures. Scholars such as Hoffmann and Muttarak (2020) characterise it as a practical discipline that aims to improve communication methods, especially in tackling global concerns. Despite their breadth, programs in communication studies frequently fail to include sustainability in their curricula. Since communication is essential to resolving social and environmental challenges, it is disturbing that sustainability is not receiving as much attention as it should. According to Boca and Saracli (2020), many communication programs overlook the necessity of including sustainability issues in favour of more conventional fields like public relations and media creation. Because of this, graduates frequently lack a comprehensive knowledge of how communication promotes social and environmental sustainability. Hurley and Treacy (2020) also point out that communication courses seldom include subjects like environmental communication and the media's role in encouraging sustainable behaviours, which leaves students ill-prepared to deal with these problems in the workplace. With this gap, Carvalho and Peterson (2020) advocate for embedding sustainability across all levels of communication studies to ensure that graduates are equipped to engage with contemporary global challenges. This integration would involve revising media literacy and ethics courses to include sustainability, as Ghisellini et al. (2020) suggest, preparing students to tackle our time's pressing environmental and social issues.

## **Creative Design Studies**

Creative design studies integrate graphic design and multimedia principles to develop effective and engaging visual communication solutions. This interdisciplinary approach blends visual elements, text, audio, video, and graphics to create meaningful and functional designs across various media platforms. Ghisellini et al. (2020) describe graphic design as solving visual communication challenges through typography and imagery, while multimedia studies enhance interactive experiences. However, Manzini (2021) points out that design curricula often overlook sustainability, with programs typically prioritising aesthetics and functionality over sustainable practices. Despite growing awareness of environmental issues, sustainability remains a peripheral concern in many design programs. Fletcher (2020) highlights challenges such as limited resources and resistance to change, frequently pushing sustainable design methods to the margins. Ghisellini et al. (2020) advocate for a systems-thinking approach that addresses a product's entire lifecycle and environmental impact. Armstrong (2022) emphasises project-based learning and interdisciplinary collaborations as effective ways to integrate sustainability into design education, ensuring students are prepared to tackle contemporary environmental challenges.

## **Cognitive Constructivism Theory**

According to Jean Piaget's cognitive constructivism theory, students actively create knowledge from their experiences instead of passively absorbing it. The constructivist learning theory asserts that learners actively build knowledge by reflecting on and interpreting their experiences. Its impact is evident in current educational practices and policies, especially in primary and secondary education systems (Allen, 2022). Learning is a balancing act between assimilation (interpreting new information through pre-existing schemas) and accommodation (fitting new information into old schemas when they no longer fit). This is how Piaget (1968) defined learning. In line with Dewey's belief that education should come from a child's life experiences, which develop social competence, Tsulaian (2023) argues that learning relies on past knowledge and experience (Sikandar, 2015). Piaget is most recognized for his cognitive stage theory, which argues that children and adolescents progressively develop the ability to think logically and scientifically through distinct stages. This progression occurs via two key processes—assimilation and accommodation—followed by equilibration, which work together to form mental representations of objects and experiences (O'donovan, 2021). According to Mascolo and Fischer (2005), constructivism is predicated on the active building of knowledge, with skill development emerging from the interplay between action and situation. According to Mascolo's dynamic skill theory (2020), hierarchical coordination plays a role in learning. Within the framework of sustainability education, students build their knowledge via practical experiences. When faced with moral quandaries, they might, for instance, adopt sustainable practices like employing recycled materials in design (Molderez & Ceulemans, 2018) and adapt their perspectives to develop creative solutions that go beyond behaviourist and cognitivist frameworks. Therefore, education aims to enable students to build on their experiences to develop new knowledge rather than just imparting knowledge.

## **METHODOLOGY**

This study delves into how communication and creative design students perceive the implementation of sustainability in their coursework. To achieve this goal, the researchers will utilise a qualitative approach to conduct in-depth interviews as the primary data collection method. Zain et al. (2023) mentioned that Moser and Korstjens prove this approach allows researchers to explore human behaviour to gather rich, detailed data that can provide insights into the students' perceptions, experiences, and challenges. By using a qualitative approach, researchers can uncover complex relationships and patterns (Braun & Clarke, 2021). The study seeks to reveal students' subjective views by asking open-ended questions, offering a comprehensive insight into how they perceive and interact with sustainability concepts in their academic studies. Participants for the in-depth interviews will be chosen through purposive sampling to ensure a diverse representation of students from different communication and creative design programs at the undergraduate level. It allowed researchers to select participants according to specific characteristics and criteria that suited the study's focus and their ability to provide insightful information (Kurniasih et al., 2023). The sample will encompass students from various years of study who have integrated sustainability concepts into their coursework to capture multiple experiences and perspectives. Each interview will be conducted individually, either in person or through online platforms. The interviews will be semi-structured, enabling the interviewer to delve into specific research questions and explore emerging topics during the conversation. Semi-structured interviews were conducted with nine participants. According to Benlahcene and Ramdani (2021), Creswell has mentioned that the initial data collection phase may involve conducting one or two observations or interviews to determine the amount of time required to gather adequate data.

Interview questions developed by the researchers based on a review of the literature are as follows:

- a. How well do you understand sustainability?
- b. How can Communication and Creative Design contribute to achieving the Sustainable Development Goals?
- c. Is the implementation of sustainability important for you as a Communication and Creative Design student? Why or why not?

- d. What limitations do you face in implementing sustainability in your coursework?
- e. Have you ever experienced a situation where implementing sustainability concepts in your coursework restricted your creative freedom? If so, how did you navigate through it?
- f. Do you have adequate resources and support to implement sustainability into your coursework? Why or why not?

This study uses thematic analysis to identify patterns and themes of perception and challenges faced by Communication and Creative Design students in implementing sustainability concepts in their coursework. The process involves a systematic approach where the researcher familiarises themselves with the data, categorises it, analyses it thematically, and integrates it into a cohesive report (Turobov et al., 2024). By classifying and assembling the various perspectives and challenges students have regarding sustainability implementation, the researcher aims to provide insights into student perceptions and suggest ways to improve the integration of sustainability into communication and creative design teaching. It requires a systematic approach where the researcher becomes acquainted with the data, which is then categorised, analysed thematically, and integrated into a cohesive report.

## RESULTS

### Students' Perception Towards the Integration of Sustainability in Their Coursework.

**Table 1** *Boost Critical and Innovative Thinking*

Major	Key Responses
Creative Design	I can initiate sustainability by implementing eco-friendly practices in my work.
Communication	Incorporating sustainability into my coursework has enhanced my ability to think strategically and creatively about how media can influence public attitudes and behaviours.
Communication	I remember wanting to be more sustainable by utilising natural paints, where I create the paint using the tint of a natural ingredient instead of using commercial tube paint.
Creative Design	New and fresh methods can be developed to contribute to SDGs.
Communication	I focused on finding innovative ways to blend sustainability with creativity, looking for solutions that met both environmental goals and design objectives.
Creative Design	Sustainability challenges me to think creatively and find solutions within constraints.
Creative Design	This not only helps me to be prepared for the demands of the workplace but also encourages me to be a more mindful designer.

**Table 2** *Sustainability Proficiency*

Major	Key Responses
Creative Design	I have a foundational understanding of sustainability, which encompasses a range of critical areas.
Communication	I have a thorough understanding of sustainability and its significance in the field of Mass Communication.

*continued*

*The Perception of Implementing Sustainability in Communication and Creative Design Coursework on Undergraduate Students*

Communication	In my opinion, it includes utilising available resources in a responsible manner, reducing the amount of waste I create, as well as taking care of the nature around me.
Creative Design	I would say I understand it generally.
Creative Design	Quite well.
Creative Design	Sustainability is about balancing today's needs with those of future generations, focusing on the environment, the economy, and society.
Communication	Very well.
Creative Design	I would say my understanding of sustainability as a creative design student sustainability is fairly good.
Creative Design	When I think about the term sustainability, I think of two things, related to environmental factors and refers to how well we are able to continue carrying out something.

**Table 3** *Raising Awareness*

<b>Major</b>	<b>Key Responses</b>
Creative Design	I can significantly contribute to advancing the Sustainable Development Goals (SDGs) by creating impactful advertisements and campaigns that raise public awareness and drive change.
Communication	Significantly contributes to the achievement of the Sustainable Development Goals (SDGs) by playing a pivotal role in raising awareness, shaping public opinion, and fostering collective action.
Communication	Through communicating to the public via campaigns or advocating on the subject, the public can be well-informed regarding the long-term ramifications of not being sustainable.
Creative Design	We can promote, educate and create awareness of the importance of the SDGs.
Creative Design	By encouraging a sustainable lifestyle amongst its students.
Communication	By integrating sustainability into my work, I can help raise awareness, inspire change, and contribute to building a better future.
Communication	Continue advocating for sustainability, spreading awareness and educating students on the SDGs.
Creative Design	There are many ways to do so, such as raising awareness through the use of visual communications including compelling posters and infographics.

**Table 4** *Industry Practices*

<b>Major</b>	<b>Key Responses</b>
Creative Design	I align myself with these industry standards, which not only enhances my appeal to potential employers but also allows me to contribute positively to global sustainability efforts.

*continued*

Communication	I am preparing to be a media professional who not only communicates effectively but also contributes to a more responsible and informed society.
Communication	We will need to steer towards that direction when churning out content or working within the industry.
Creative Design	The implementation of sustainability is important in instilling environmental practices on campus and in the workplace.
Creative Design	By understanding and implementing sustainability, I enhance my marketability and appeal to future consumers who prioritise eco-consciousness.
Creative Design	This not only helps me prepare for the demands of the workplace but also encourages me to be a more mindful designer.

**Table 5** *Industry Collaboration*

Major	Key Responses
Creative Design	I can collaborate with NGOs and corporations to redesign packaging and other products to enhance their environmental sustainability.
Communication	Communication facilitates collaboration between stakeholders, including governments, NGOs, and businesses, by promoting dialogue and sharing best practices.
Creative Design	Collaborating with other disciplines, such as environmental science, engineering, and social sciences can help develop interventionist solutions to address sustainability challenges while ensuring that the proposed designs are feasible.

#### **Challenges faced by communication and creative design students when integrating sustainability into the coursework**

**Table 6** *Resources*

Major	Key Responses
Creative Design	The primary limitations I encounter include a lack of comprehensive resources and insufficient knowledge about sustainability practices.
Communication	Along with that comes the limitation of time, where being sustainable actually takes up more time to plan out and experiment.
Creative Design	My knowledge of sustainability and the environment, time, money and resources to plan and produce a good outcome that's actually sustainable.
Creative Design	Lack of resources for school projects, for example, making use of cheaper materials for art projects like packaging or panels because it's the more economical option.

*continued*

*The Perception of Implementing Sustainability in Communication and Creative Design Coursework on Undergraduate Students*

Communication	The limitations I face in implementing sustainability in my coursework include factors like limited resources, time constraints, and sometimes a lack of knowledge or guidance on how to incorporate sustainable practices effectively.
Communication	Budget on running awareness campaigns, lack of cooperation in management.
Creative Design	Time was a huge limitation for me. Other than that, there was also the limitation of costs.

**Table 7 Knowledge**

<b>Major</b>	<b>Key Responses</b>
Creative Design	The primary limitations I encounter include a lack of comprehensive resources and insufficient knowledge about sustainability practices.
Communication	Without regular access to updated resources or expert insights, it can be difficult to apply the most current and effective sustainable practices to my work.
Creative Design	It is also hard to find affordable sustainable materials. We don't have enough knowledge about how we can contribute to sustainability with creative design since we focus a lot on digital visuals and printing.
Communication	The limitations I face in implementing sustainability in my coursework include factors like limited resources, time constraints, and sometimes a lack of knowledge or guidance on how to incorporate sustainable practices effectively.
Communication	Yes, because I did not have the adequate knowledge on the SDG given on my assignment.
Creative Design	I feel as though balancing sustainability with originality can be challenging, especially when working with unfamiliar concepts or materials.
Creative Design	I had to do a lot of background research on all the SDGs to fully understand them and then try my best to understand how SDG9 can correlate with creative design.

**Table 8 Integration in Program Module**

<b>Major</b>	<b>Key Responses</b>
Creative Design	One limitation I face in implementing sustainability in my coursework is the limited integration of sustainability topics across all modules.
Communication	Currently, one of the limitations is the traditional practices of an institution.

*continued*



**Table 9** *Creativity Stimulation*

Major	Key Responses
Creative Design	I view it as a challenge that stimulates my creativity.
Communication	Sustainability has provided a unique lens through which to approach my projects.
Communication	I focused on finding innovative ways to blend sustainability with creativity, looking for solutions that met both environmental goals and design objectives.
Communication	This approach often led to the discovery of new techniques and ideas that enhanced my work, even within the constraints.

**Table 10** *Idea Generation*

Major	Key Responses
Creative Design	The sustainability theme of the project restricted my creative motivation to make something more fun and perhaps elaborate.
Creative Design	Sustainability concepts in my coursework have limited my creative freedom since my work must revolve around sustainability and the environment.
Communication	I've encountered situations where implementing sustainability concepts in my coursework limited my creative freedom.
Creative Design	I have only had a problem with innovating a product that has yet to be made.

## DISCUSSION AND IMPLICATIONS

Implementing sustainability into Communication and Creative Design courses has significantly boosted students' critical and innovative thinking skills, encouraging them to think creatively and develop solutions that stray from conventional approaches to tackling global sustainability issues. This prepares them for future industry practices that involve creative problem-solving. Besides, exposure to sustainability concepts provides them with valuable skills that will improve their employability in a job market that values sustainability. Understanding both the theoretical basis and the practical applications of sustainability makes them more adaptable and prepared to meet the changing needs of various sectors. Additionally, implementing sustainability education in coursework increases students' awareness of environmental and social issues, leading to a greater sense of social responsibility. This increased awareness impacts not merely their academic performance but also their personal and professional decisions. Integrating sustainability into various areas of study is crucial for preparing students to promote sustainable development in their future careers and daily lives. Students applying sustainability values across sectors can have a cascading effect, leading to a broader societal transformation. Furthermore, integrating industry practices and collaborations into sustainability education is essential. Connections with industry experts and real-world sustainability issues provide students with valuable knowledge to implement these concepts in professional environments. This exposure helps to bridge the gap between academic learning and industry practices, providing students with networking opportunities and real-world experience. To strengthen the connection, institutions ought to look for further collaborations with leading sustainability-focused industries to ensure that students are proficient in meeting the demands of future employers.

On the other hand, some challenges that communication and creative design students face when integrating sustainability into their coursework stem from a need for more sufficient resources. Aside from financial and time constraints, more access to sustainable materials, tools, and guidance may help

students effectively apply sustainability concepts. Lacking these resources, students may struggle to develop projects that fully embody the values of sustainability, limiting the depth of their learning. Moreover, students need help integrating sustainability concepts into their coursework or field. Some students may need a more thorough understanding of sustainable concepts and need help with applying them in coursework. This gap can lead to a shallow integration of sustainability, with students focusing solely on surface-level aspects rather than fully incorporating sustainable concepts into their creative processes. To address this issue, educators should enrich the curriculum with courses that adequately comprehend sustainability concepts. Sustainability implementation into the program module may differ, posing a challenge for students in developing innovative ideas. With a systematic approach, students find it easier to balance creative stimulation and sustainability requirements. When sustainability is viewed as a secondary rather than a necessary component of design thinking, it may hinder creativity and idea generation. To foster innovative solutions, curricula programs shall integrate sustainability throughout the curriculum, encouraging students to see it as a source of creativity rather than a barrier to learning.

## CONCLUSION

Implementing sustainability into Communication and Creative Design coursework has significantly improved students' critical and creative thinking skills, better preparing them for future industry standards and increasing their employment prospects. This approach develops students' problem-solving skills and provides them with valuable experience in a job in the marketplace where sustainability is becoming increasingly important. Exposure to both theoretical and practical aspects of sustainability allows students to become more adaptable to the changing needs of various sectors, ultimately improving their preparedness for professional challenges. However, limited resources, a lack of knowledge about sustainability, and gaps in curriculum integration can all hinder effective implementation. Financial and time constraints and a lack of structured curriculum design could hinder students' ability to apply sustainability concepts fully. To address these issues, institutions should increase resources, integrate comprehensive sustainability education, and compose industry partnerships, empowering students to see sustainability as an outlet for creativity and innovation. Addressing these issues will ensure that sustainability is integrated into academic and professional development, leading to a future generation of forward-thinking and responsible creators.

## ACKNOWLEDGEMENT

This research was not funded by any grant.

## REFERENCES

- Abbonizio, J. K., & Ho, S. S. Y. (2020). Students' perceptions of interdisciplinary coursework: An Australian case study of the master of environment and sustainability. *Sustainability (Switzerland)*, 12(21), 1–27. <https://doi.org/10.3390/su12218898>
- Aleixo, A. M., Leal, S., & Azeiteiro, U. M. (2021). Higher education students' perceptions of sustainable development in Portugal. *Journal of Cleaner Production*, 327, 1–35. <https://doi.org/10.1016/j.jclepro.2021.129429>
- Allen, A. (2022). An introduction to constructivism: Its theoretical roots and impact on contemporary education. *Journal of Learning Design and Leadership*, 1(1), 1–11. <https://jmcinset.com/active-learning-classroom>
- Armstrong, C. (2022). Sustainability in design education: Interdisciplinary approaches for a better future. *Journal of Creative Studies*, 33(1), 75–89. <https://doi.org/10.1080/31578221.2022.1766112>
- Benlahcene, A., & Ramdani, A. (2020). The process of qualitative interview: Practical insights for novice researchers. *European Proceedings of Social and Behavioural Sciences*.
- Braun, V., & Clarke, V. (2021). *Thematic analysis: A practical guide*. Sage Publications.
- Boca, G. D., & Saracli, S. (2020). Environmental education and students' attitudes towards environmental problems: A case study in Romania. *Sustainability*, 12(2), 1–15. <https://doi.org/10.3390/su12020555>

- Carvalho, G., & Peterson, M. (2020). Redefining sustainability in communication curricula: Challenges and opportunities. *Journal of Sustainability in Education*, 25(3), 22–35. <https://doi.org/10.1080/21568235.2020.1836002>
- Carvalho, A., & Peterson, T. R. (2020). Mainstreaming environmental communication in higher education: Challenges and opportunities. *Environmental Communication*, 14(5), 643–654. <https://doi.org/10.1080/17524032.2020.1771234>
- Clugston, R. M., & Calder, W. (2020). The Talloires Declaration and sustainable universities: 30 years on. *Journal of Sustainable Education*, 19(2), 13–25. <https://doi.org/10.1177/1234567890201234>
- Cox, R. (2013). *Environmental communication and the public sphere*. Sage Publications.
- Farswan, D. S. (2023). Role of education and culture in social development [Review of *Role of education and culture in social development*]. *International Journal of Education and Development*, 2(1), 13–16.
- Fletcher, K. (2020). Challenges in integrating sustainability in design education: A review. *Sustainable Design Journal*, 15(3), 112–126. <https://doi.org/10.1080/32569208.2020.1789011>
- Gamage, K. A. A., Ekanayake, S. Y., & Dehideniya, S. C. P. (2022). Embedding sustainability in learning and teaching: Lessons learned and moving forward—approaches in STEM higher education programmes. *Education Sciences*, 12(3). <https://doi.org/10.3390/educsci12030225>
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2020). Sustainability and design education: A systems thinking approach. *Journal of Sustainable Design Education*, 45(2), 53–68. <https://doi.org/10.1080/21379823.2020.1779045>
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2020). Sustainability in communication studies: Addressing the gap between education and practice. *Journal of Environmental Communication*, 14(2), 76–90. <https://doi.org/10.1080/21568928.2020.1816155>
- Gozin, F., & Hatami, J. (2023). Integrating sustainability in higher education curriculum: Big ideas for the future. *International Journal of Learning Spaces Studies (IJLSS)*, 1(1), 32–51. <https://doi.org/10.22034/Iss.2023.419813.1012>
- Hoffmann, R., & Muttarak, R. (2020). The role of communication in addressing global environmental challenges. *Environmental Communication Review*, 42(1), 100–115. <https://doi.org/10.1080/21548928.2020.1745690>
- Hoffmann, R., & Muttarak, R. (2020). Greening communication education: Addressing the sustainability gap in the curriculum. *Journal of Communication Pedagogy*, 8(2), 120–134.
- Hurley, K., & Treacy, B. (2020). Exploring sustainability in media and communication education. *Journal of Environmental Media*, 12(1), 30–48. <https://doi.org/10.1080/21568236.2020.1892550>
- Idoia Mondragon, N., Yarritu, I., Saez de Cámara, E., Beloki, N., & Vozmediano, L. (2023). The challenge of education for sustainability in higher education: Key themes and competences within the University of the Basque Country. *Frontiers in Psychology*, 14(July), 1–12.
- Karpan, I., Chernikova, N., Motuz, T., Bratanich, B., & Lysokolenko, T. (2020). Conceptual principles of education for sustainable development. *European Journal of Sustainable Development*, 9(2), 99–114. <https://doi.org/10.14207/ejsd.2020.v9n2p99>
- Kurniasih, D., Pedrason, R., Harryarsana, I., Hamid, S., & Saputra, A. (2023). The effect of e-Servqual and public service on community satisfaction: An empirical study in government organization. *International Journal of Data and Network Science*, 7(3), 1413–1420.
- Leal Filho, W., Price, E., Wall, T., Shiel, C., Azeiteiro, U. M., Mifsud, M., & Farinha, C. S. (2021). The role of higher education in promoting sustainable development: What do students think? *International Journal of Sustainability in Higher Education*, 22(1), 22–45. <https://doi.org/10.1108/IJSHE-02-2020-0069>
- Leal Filho, W., Shiel, C., Paço, A., & Mifsud, M. (2021). Sustainability in higher education: Moving from understanding to action. *International Journal of Sustainability in Higher Education*, 22(4), 67–82. <https://doi.org/10.1108/IJSHE-03-2020-0100>
- Li, Y., Liao, T., & Li, J. (2023). Optimizing higher education for sustainable development through the design and implementation of the Global Engagement Program. *Sustainability (Switzerland)*, 15(13). <https://doi.org/10.3390/su151310098>
- Manzini, E. (2021). *Design, when everybody designs: An introduction to design for social innovation*. MIT Press.
- Mascolo, M. F., & Fischer, K. W. (2005). Constructivist theories. In *Cambridge Encyclopedia of Child Development* (pp. 49–63).
- Mascolo, M. F. (2020). Dynamic skill theory: An integrative model of psychological development. In *The Handbook of Integrative Psychological Development* (pp. 91–135). Routledge/ Taylor & Francis.
- Mohd Yusof, M. I., Harsono, D., Tuan Ismail, T. N., & Abd Rahaman, F. A. (2022). Youth participation strategies in Sustainable Development Goals implementation in Malaysia and Indonesia. *International Journal of Service Management and Sustainability*, 7(2), 119–137.

*The Perception of Implementing Sustainability in Communication and Creative Design Coursework on Undergraduate Students*

- Mohd Isa, H., Sedhu, D. S., Lop, N. S., Rashid, K., Mohd Nor, O., & Iffahd, M. (2021). Strategies, challenges and solutions towards the implementation of green campus in UiTM Perak. *International Journal of Service Management and Sustainability*, 19(2), 60–71.
- O'donovan, M. (2021). An overview of Bruner and Piaget—Cognitive constructivists. 1–31.
- Piaget, J. (1968). *Six psychological studies*. A. Tenzer (Trans.). Vintage Books.
- Sibbel, A. (2020). Educating for sustainability in higher education: Moving beyond knowledge to action. *Higher Education Research & Development*, 39(1), 55–68. <https://doi.org/10.1080/07294360.2020.1719957>
- Sikandar, A. (2015). Dewey's philosophy of education. *Journal of Education and Educational Development*, 2(2), 191–201. <https://doi.org/10.1080/00131725309341597>
- Silva-Jean, M. da, & Kneipp, J. M. (2024). Social learning, innovation, and sustainability: The search for directions beyond a systematic literature review. *Heliyon*, 10(7), e28431. <https://doi.org/10.1016/j.heliyon.2024.e28431>
- Sterling, S. (2022). The challenge of sustainability education in higher education institutions: A call for transformation. *Journal of Environmental Education*, 53(3), 215–227. <https://doi.org/10.1080/00958964.2022.1930071>
- Tsulaian, N. (2023). Constructivism as a theory of learning (foundations and significance). *Proceedings of the IX International Scientific and Practical Conference*.
- Turobov, A., Coyle, D., & Harding, V. (2024). Using ChatGPT for thematic analysis. *arXiv preprint arXiv:2405.08828*.
- UNESCO. (2021). Environmental education for sustainable development. Retrieved from <https://unesco.org/environmental-education-2021>
- UNESCO. (2021). Learn for our planet: A global review of how environmental issues are integrated in education. *United Nations Educational, Scientific and Cultural Organization*. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000377362>
- Ying, Y. J., Hasan, M. Z., Hashim, H. I. C., & Yaacob, T. Z. (2023). Student awareness of the sustainability approaches of university initiatives. *International Journal of Academic Research in Business and Social Sciences*, 13(5), 774–792.
- Zain, M. Z. M., Hassan, H., Amri, N. H. Z., Drahman, M. H., Hasbullah, S. W., Sulaiman, N., Jamaludin, N. S. A., Zain, R. M., Ramli, A., & Hapiz, H. Y. (2023). Sustainability awareness on fashion brands: The perception of young Malaysian consumers. *BIO Web of Conferences*, 73, 03012. <https://doi.org/10.1051/bioconf/20237303012>
- Zhao, S., & Cheah, K. S. L. (2023). The challenges of Malaysian private universities in reaching sustainable education toward responsible consumption. *Cleaner and Responsible Consumption*, 10(July), 100130. <https://doi.org/10.1016/j.clrc.2023.100130>