



Addressing Sustainability Themes Using Visual Storytelling

Kathryn McSweeney

ATU St Angela's, Lough Gill, Co. Sligo, Ireland
kathryn.mcsweeney@atu.ie

Abstract. This paper explores the use of visual storytelling to address sustainability themes within a Home Economics Professional Master of Education module in an Initial Teacher Education context in Ireland. Firstly, the pre-service teachers engaged in curriculum mapping to identify connections between the Home Economics curriculum and content explicitly related to the Sustainable Development Goals and global systems and issues, such as climate change and sustainable development. In addition, aspects of attitudinal and behavioural change, such as values, dispositions, and actions, were addressed in relation to sustainability. A specific focus was placed on developing a growth mindset, with a particular emphasis on cultivating a sustainability mindset. In alignment with Ireland's Teaching Council recommendations, ample opportunities for both individual and collaborative reflection, as well as engagement with pedagogical literature and research, were provided. The module advanced students' pedagogical expertise and included time for experimentation and exploration of new pedagogies. Narrative pedagogy and visual storytelling were explored through practical applications. The students selected a Sustainable Development Goal (SDG) for study. Once they had a full understanding of the goal, they immersed themselves in the narrative process, creating stories. The sharing of stories and classroom dialogue provided evidence of the students' developed understanding of sustainability issues. Different interpretations led to insightful discussions and engagement, and linking them to personal experiences helped scaffold learning. Different viewpoints and interpretations of experiences were communicated visually using textiles as a medium of expression.

Keywords: Narrative pedagogy, visual storytelling, sustainable development goals, education for sustainable development, arts-based pedagogy, transformative learning, textile education.

1 Introduction

Education for Sustainable Development (ESD) has become a key priority in international and national education policy (Department of Education and Youth, 2022; UNESCO, 2014, 2020), reflecting the urgent need to equip learners with the

knowledge, skills, values, and dispositions required to respond to complex global challenges such as climate change, social inequality, and unsustainable patterns of production and consumption. Framed by the United Nations' Sustainable Development Goals (SDGs), ESD seeks not only to raise awareness of sustainability issues but also to foster critical thinking, systems thinking, and transformative action. Within this context, teacher education plays a pivotal role. Initial Teacher Education (ITE) programmes are uniquely positioned to shape future educators as agents of change (Teaching Council, 2020) who can integrate sustainability meaningfully into the curriculum, pedagogy, and school culture.

In Ireland, this imperative is reflected in national policy and in the Teaching Council's emphasis on reflective, research-informed, and values-based professional practice (Teaching Council, 2020). However, embedding sustainability in ITE requires more than simply including SDG content. It calls for pedagogical approaches that engage pre-service teachers cognitively, emotionally, and creatively, enabling them to connect global issues to their personal experiences and professional identities. Developing a "sustainability mindset" (Fox, 2017; Fox & Wogowitsch, 2021), encompassing attitudes, dispositions, and a sense of agency, is as important as developing subject knowledge. This approach aligns with broader ESD goals that emphasise transformative learning, learner engagement, and the cultivation of ethical and responsible citizenship (UNECE, 2011).

Home Economics, with its focus on food, textiles, family life, consumption, and wellbeing, offers a particularly powerful curricular space for engaging with sustainability. The subject naturally intersects with key SDG themes, including responsible production and consumption, climate action, health and well-being, and social justice. However, there remains a need for innovative pedagogical strategies in ITE that help pre-service teachers move beyond technical or content-driven approaches towards more critical, reflective, and imaginative engagement with sustainability issues.

This paper responds to that need by exploring advanced pedagogy within a Professional Master of Education (PME) module in an Irish ITE context. By integrating curriculum mapping, reflective practice, and creative, textile-based visual narratives linked to specific SDGs, the module sought to deepen pre-service teachers' understanding of sustainability and foster confidence in their pedagogical practice. Through storytelling grounded in real-world sustainability challenges, students were encouraged to connect global systems and issues such as climate change and sustainable development to their own values, experiences, and future classroom practice.

This research addresses key sustainability challenges in education, for example, how to move from awareness to action (Ubuntu Network, 2019), foster mindset and behavioural change (Fox, 2017, 2019; Fox & Wogowitsch, 2021), and prepare teachers to engage learners with complex, emotionally charged global issues in meaningful ways. The study contributes to the growing body of ESD literature by demonstrating how creative, arts-based pedagogies in ITE can support transformative learning and help position future teachers as active contributors to a more sustainable and just society.

2 Methods

A qualitative, interpretivist research design situated within a constructivist paradigm was chosen for this study. The research was conducted within a postgraduate PME programme in Ireland, specifically as part of an advanced pedagogy module. It involved the design, implementation and evaluation of the impact of a pedagogical innovation. The selected innovation involved curriculum mapping, reflective practice, and creative, textile-based visual storytelling linked to the SDGs. The art-based research (Leavy, 2019; Rose, 2023) sought to enhance students' understanding of, and motivation to embed, ESD and global citizenship within Home Economics education.

Initially, students engaged in curriculum mapping activities to identify explicit connections between the Home Economics curriculum and the SDGs, with particular emphasis on global systems and issues such as climate change and sustainable development. See Figure 1.



Fig. 1. Mapping global citizenship and ESD curriculum links (McSweeney, 2025)

Attitudinal and behavioural dimensions of sustainability, including values, dispositions, and actions, were explicitly addressed, with a focus on cultivating a sustainability mindset (Fox, 2017, 2019; Fox & Wogowitsch, 2021; McSweeney, 2025). It was emphasised during the module that teachers can support “rethinking” by helping learners develop

awareness of the impact of their actions and their underlying “operating system” (Reardon, 2010), that is, a set of beliefs, attitudes, and assumptions about how the world works or reality and which is formed and reshaped through life experiences.

Students were then introduced to visual storytelling as a learning approach (McSweeney, 2025; Sharples, 2019). A participatory process was adopted. According to Rose (2023, p. 350), using visual materials in a participatory research project facilitates “discussion about the topic at hand.” Participatory methods prioritise the processes involved in a project. Additionally, opportunities for individual and collaborative reflection using the Hatton and Smith (1995) model (Hatton & Smith, 1995; Voulgari & Koutrouba, 2026), as well as dialogue and engagement with pedagogical literature, were embedded throughout the module. The module assessment involved a poster presentation, with many students choosing to research themes related to global citizenship and sustainability.

Arts-based research was a key component of this study as it is “particularly effective at reaching aspects of human experience that conventional methods find difficult because art has particular levels of effects” (Rose, 2023, p. 334), and responses may be “visceral, emotional, and psychological before it is intellectual” (Leavy, 2019, p. 3). The development of textile ‘visual’ art was a key component of this study as visual art encourages “reflection and change in its audiences” (Ward & Shortt, 2020, p. 2). It develops “initial awareness” and “the expression of identity and potential dialogue” (Rose, 2023, p. 335). Using a visual approach helped “illuminate phenomena” that are “difficult to articulate through other representational forms” (Tian, 2023, p. 4).

Craft-art literature features pictorial textile craft art in the form of story cloths (Manay, 2016). Single scenes and narrative sequences are presented using embroidery or appliqué, and they communicate personal and collective experiences of conflict, injustice, marginalisation, memory, and resilience. Conflict Textiles (CAIN, 2021) is a curated collection of arpilleras, tapestries and quilts that illustrates this approach. The pieces were sewn by women who communicated visually about political repression and human rights abuses.

This study draws on research and experimental work carried out over a five-year period (2020–2025). The sample comprised PME students with prior teaching qualifications obtained through a Bachelor of Arts teaching programme. Over a five-year period, PME students experimented with visual storytelling approaches that were continually refined, with insights gained each year informing subsequent iterations of the project. Approximately 60 students per year completed a school placement as part of the PME programme, during which a small number experimented with visual storytelling in the Home Economics classroom. During school placement, the student teachers supported pupils in developing a conceptual understanding of the SDGs and guided them through a narrative immersion process in which they created stories exploring sustainability issues that mattered to them. These narratives were subsequently communicated visually using textiles as a medium of expression.

3 Data Collection and Analysis

Multiple qualitative data sources were collected to support triangulation and strengthen confidence in the findings. These included PME students' research posters examining the use of visual storytelling and narrative pedagogy in supporting sustainability learning; student-created artefacts from both PME and post-primary (lower secondary) students, including textile-based visual narratives and accompanying story texts; lesson plans and resources illustrating the use of visual storytelling; and research field notes and reflexive memos. The latter provided documentary evidence of pedagogical decisions, notes pertaining to classroom interactions, and emerging insights.

The data analysis was guided by Braun and Clarke's six-phase framework (Braun & Clarke, 2022). The initial familiarisation phase involved repeated reading of student reflections and narratives. Open coding was used to identify meaningful units related to understanding of sustainability, values and dispositions, and pedagogical confidence. Codes were iteratively reviewed and organised into broader themes that captured patterns across the data. Additionally, principles of visual methodologies (Banks, 2011; Bland & Sharma-Brymer, 2012; Glaw et al., 2017; Pauwels, 2012; Rose, 2023) were applied in the analysis of textile artefacts. These methods were used to interpret images alongside narratives, leading to the identification of multiple layers of meaning through the evocation of "emotions, memories and ideas" (Glaw et al., 2017, p. 1). This approach enhanced both the validity and depth of the study by generating richer data that captured forms of meaning beyond what verbal and written methods alone can provide.

4 Findings

PME student teachers' reflections offered insight into their perceptions of the pedagogical approaches used in the module. They consistently valued learning that was active, sensory, and experiential. Practical engagement enhanced interest, motivation, and depth of understanding. Students strongly valued connections between theory and real-world application, especially relevance to future teaching and everyday life. They identified teacher educator enthusiasm, energy, and commitment as highly motivating and influential in their engagement. Students highlighted learning that deepened their awareness of sustainability, values and attitudes. Visual storytelling was experienced as a powerful, creative approach that gives learners ownership of their learning through lived experience and artistic expression. Students identified gains in critical thinking, communication, reflection, creativity, and confidence to implement strategies in their own teaching. Learning was strengthened through discussion, sharing experiences, and learning from peers.

Sample textile artefacts and outcomes illustrating the effectiveness of visual storytelling as a pedagogical approach completed by university students, include *A Tale of Two Cities* (Table 1; Figure 2), *But a Vision of Reality* (Table 2; Figure 3), *Up in the AIR* (Table 3; Figure 4), a unit of learning (Table 4; Figure 5) created by a PME student for a group of second-year (lower secondary) students at a school in the north-west of Ireland, and a sample first-year (lower secondary) student textile and related narrative

(Table 5; Figure 6). The examples demonstrate how visual storytelling, when integrated with the SDGs, can effectively inspire learners to create both creative and practical textile responses to real-world global issues. For further information on project outcomes, see *Global Citizenship in the Home Economics Classroom: A Guide for Teachers* (McSweeney, 2025).

Table 1. A Tale of Two Cities Narrative (Meghan McHugh)

This textile piece is inspired by my research poster, “A Tale of Two Cities,” which explores the differences between sustainable and unsustainable urban living through SDG 11: Sustainable Cities and Communities. The design was inspired by the Yin and Yang symbol to represent the balance/current imbalance between sustainability and overconsumption in today’s urban communities. The darker side (Yin) depicts an unsustainable city: cars dominate the roads, artificial lights burn through the night, and the environment is dark, passive and remains unchanged. Yet, even here, the moon, stars, and a distant planet (the Yin dot) give a glimmer of hope and possibility for change. The lighter side (Yang) illustrates a vision of a sustainable city: bicycles replace cars, greenery and flowers flourish, and children play outside, kicking a ball (the Yang dot), embodying joy, health, and community. The semi-circular patterns, created using the Sashiko embroidery method, were used here to symbolise the cyclical nature of urban transformation and resilience ... This textile project invites viewers to think more deeply and reflect on the choices we make as individuals and as a collective, and on how these choices shape the style of living we choose and what we are building towards. Each small action we can take, individually and as a community, is like a stitch in a fabric and can influence a larger tapestry of positive change.



Fig. 2. A Tale of Two Cities (Meghan McHugh)

Table 2. But a Vision of Reality (Heather Dorman-Smith)

Inspired by SDG 15 Life on Land, my design begins with the sea, extends to the land, and reaches into the sky. I used an environmental motif and included two dragonflies, as I wanted something flying. I included a wildflower meadow here and some pieces of natural-dyed fabric. The fabric is tea dyed. To me, biodiversity is not a closed system; it is all interrelated. For that reason, I left the edges fraying.



Fig. 3. But a Vision of Reality (Heather Dorman-Smith)

Table 3. Up in the AIR- The fragile future of UN SDGs (Janice Raine-Conick)

My textile piece depicts the three SDG goals related to health [SDG 3], education [SDG 4], and responsible consumption and production [SDG 12] as balloons floating above the clouds. The symbol on each balloon indicates the relevant goal: a heart for health, a book and mortarboard for education, and a dress for consumption and production. The balloon strings have triangles attached, which represent Maslow's hierarchy of needs.

The piece demonstrates the fragility of human goals and how easily they can be abandoned. At present, there is so much that is wrong in our world: wars, famine, lack of educational opportunities, inequality in health care, overconsumption, under provision, and people trying to escape. We've let go of the balloon strings, but in doing so, does that represent escape to a brighter future? The piece is constructed

from three pieces of denim fabric mounted on an old, battered linen table napkin. The fabric choice highlights the resilience and sustainability of both denim and linen, with the old fabric serving as the foundation and support for the new. The fabric pieces are held together with a Japanese stitch known as Boro stitching, and the sky's stitch style is a form of Sashiko stitching, both dating to the early 17th century and developed in Japan, used to make simple yet beautiful repairs to worn-out work garments.



Fig. 4. Up in the AIR - The fragile future of UN SDGs (Janice Raine-Conick)

Table 4. School-Based Example of a Unit of Learning incorporating the SDGs (Beth Herron)

The initial motivation for the project was the UN Sustainable Development Goals, which served as the starting point for the students' stories. Students chose one of the goals as the theme for their home economics textile-based assessment piece (Classroom Based Assessment 1), which requires students to produce a textile item for an individual or the home. Students chose a theme and sketched a design that conveyed their idea. They then used technology to research their chosen theme and create a mood board showcasing it, along with their ideas and materials. Students engaged with the theory behind their issues. They began to consider why and how their chosen issue specifically affects individuals, communities, and the wider global society. This was achieved using the Issue Tree (Oxfam, 2015, p. 13). Students identified their area of concern, represented by the tree's trunk. The students, then, through dialogue and reflection on their own experiences, identified the root causes of the

issues. The tree's roots represented the causes, and the branches, the effects. Lastly, the students suggested solutions they could implement to mitigate the issue they had chosen, as shown by the leaves they wrote and added to the issue tree. At the same time, students completed a portfolio of learning experiences throughout the project. The portfolio documented the steps the students took to create their textile piece, along with their rationale and learning experiences. The portfolio included a section for students to reflect weekly on their progress and another for collecting feedback from their peers on their work.



Fig. 5. Classroom-Based Assessment Examples with SDG Themes (Beth Herron)

Table 5. Climate Change (Rachel Doyle)

I placed an island and a cloud into the heart because I think it's important for us to love our Irish island and to protect the earth. Climate change is like a dark cloud, but every cloud has a silver lining, and we can help by playing our part.



Fig. 6. Climate Change (Rachel Doyle)

5 Discussion

The PME student teachers provided rich insight into the effectiveness of pedagogical approaches used in the module. They highlighted the effectiveness of experiential, narrative, and visual pedagogies. Students consistently valued hands-on, interactive learning, noting that engaging with live samples, props, and practical activities enhanced their interest, motivation, and understanding. This finding aligns with established principles of experiential learning (Ranken et al., 2024; Shivaramu et al., 2025) and supports previous research showing that active, sensory engagement promotes deeper learning.

A strong theme emerging from the data is the relevance of learning to real-world contexts and classroom practice. PME students appreciated examples and strategies that could be directly applied during school placement and in future teaching, demonstrating that linking pedagogy to authentic tasks increases the perceived value and applicability of learning. Teacher enthusiasm and passion were repeatedly highlighted as key motivators. Students reported that the teacher educator's energy and engagement inspired them to participate actively and explore new ideas, supporting the literature on the impact of role modelling and teacher presence. Bandura's social learning theory suggests that students will imitate 'the behaviour of a role model' if they have the capacity and motivation to reproduce it (Bates, 2019, p. 52).

Visual storytelling emerged as particularly powerful in fostering creativity, student voice, and personal engagement. By allowing learners to express themselves through storytelling, textiles, or other media, students could connect learning to their own lives and interests. Similarly, Tian (2023, pp. 4-5) argues that the art-making process is a "meaning-making process", a transformative tool and a "starting point for activism". This method promoted critical thinking, communication, and reflection, highlighting

its potential as a tool for both cognitive and affective development. Peer discussion and collaboration further reinforced these outcomes, emphasising the social dimension of learning (Gannar & Kilani, 2025; White, 2025).

Finally, the combination of creative expression using textile and mixed media, skill development, and reflection demonstrates that these pedagogical approaches not only enhance immediate learning outcomes but also contribute to professional growth and confidence among PME students. Participants reported feeling better prepared to implement these strategies in their own classrooms, suggesting that the module strengthened teacher identity and readiness.

6 Conclusion

The findings of this study indicate that experiential, narrative, and visual pedagogies, when integrated with real-world relevance, sustainability principles, and the SDGs, can effectively engage PME student teachers and inspire them to create meaningful, creative, and practical learning experiences in the classroom. Hands-on activities, live examples, and narrative approaches foster deep learning, motivation, and higher-order skills, while collaborative and reflective practices enhance peer learning and professional confidence.

Overall, this study underscores the value of combining active, student-centred methods with authentic and socially relevant content in teacher education. By doing so, teacher educators can equip future teachers with the pedagogical tools, ethical and environmental awareness, and creative confidence necessary to inspire their own students and address contemporary social and global challenges in the classroom.

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References

1. Banks, M. (2011). Reading Pictures. In *Visual Methods in Social Research* (pp. 2-12). Sage Publications Limited.

2. Bates, B. (2019). *Learning theories simplified* (2nd edn). Sage.
3. Bland, D., & Sharma-Brymer, V. (2012). Imagination in school children's choice of their learning environment: An Australian study. *International Journal of Educational Research*, 56, 75–88.
4. Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage.
5. CAIN (2021). *Conflict Textiles* [Conflict Archive on the Internet at Ulster University, Northern Ireland]. <https://cain.ulster.ac.uk/conflicttextiles>
6. Department of Education and Youth. (2022). *2nd National Strategy on Education for Sustainable Development—ESD to 2030*. Government.ie. <https://www.gov.ie/en/department-of-education/publications/2nd-national-strategy-on-education-for-sustainable-development-esd-to-2030/>
7. Fox, A. (2017). Changing mindsets. *Coaching Connected Learning across Borders*. <https://annefox.eu/2017/09/08/changing-mindsets>
8. Fox, A. (2019). *Green pedagogy deconstructed*. Coaching Connected Learning across Borders. <https://annefox.eu/2019/02/13/green-pedagogy-deconstructed>
9. Fox, A., & Wogowitsch, C. (2021). *Green pedagogy: Using confrontation and provocation to promote sustainability skills*. Teacher Education in the 21st Century: Emerging Skills for a Changing World. <https://www.intechopen.com/online-first/green-pedagogy-using-confrontation-and-provocation-to-promote-sustainability-skills>
10. Gannar, S., & Kilani, C. (2025). Contextualized Learning and Social Constructivism: Implementing a Project-Based Approach in Information Systems Development Education. *Journal of Science Learning*, 8(1), 15–24. <https://doi.org/10.17509/jslv8i1.72667>
11. Glaw, X., Inder, K., Kable, A., & Hazelton, M. (2017). Visual Methodologies in Qualitative Research: Auto Photography and Photo Elicitation Applied to Mental Health Research. *International Journal of Qualitative Methods*, 16, 1–8. <https://doi.org/10.1177/1609406917748215>
12. Hatton, N., & Smith, D. (1995). Reflection in Teacher Education: Towards Definition and Implementation. *Teaching and Teacher Education*, 11(41), 33–49.
13. Leavy, P. (2019). Introduction to arts-based research. In *Handbook of Arts-Based Research* (pp. 3–21). Guilford Press.
14. Mannay, D. (2016). *Visual, Narrative and Creative Research Methods Application, reflection and ethics*. Routledge.
15. McSweeney, K. (2025). *Global Citizenship in the Home Economics Classroom: A Guide for Teachers*. Ubuntu Network. <https://ubuntu.ie/resources/exemplars-of-practice/>
16. Oxfam. (2015). *Global Citizenship in the Classroom: A Guide for Teachers*. oxfam.org.uk/education. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/620105/edu-global-citizenship-teacher-guide-091115-en.pdf;sequence=9>
17. Pauwels, L. (2012). An Integrated Conceptual Framework for Visual Social Research. In *The SAGE Handbook of Visual Research Methods* (pp. 3–23). Sage Publications Limited.
18. Ranken, E., Wyse, D., & Manyukhina, Y. (2024). The effect of experiential learning on academic achievement of children aged 4–14: A rapid evidence assessment. *The Curriculum Journal*, 36(3), 417–434. <https://doi.org/10.1002/curj.304>
19. Reardon, P. (2010). *Life coaching activities and powerful questions A life coaching activities workbook*. CoachPhyllis.Com Inc.
20. Rose, G. (2023). *Visual Methodologies: An Introduction to Researching with Visual Methodologies* (5th edn). Sage.
21. Sharples, M. (2019). *Practical Pedagogy: 40 New Ways to Teach and learn*. Routledge.

22. Shivaramu, H. T., Aveen, K. P., & Vullal, V. N. (2025). The role of experiential learning in improving academic performance and student satisfaction in engineering education. *Discover Education*, 4(545), 1–10. <https://doi.org/10.1007/s44217-025-01019-y>
23. Teaching Council. (2020, October). *Céim: Standards for initial teacher education in accordance with section 38 of the Teaching Council Acts, 2001-2015*. Teaching Council. <https://www.teachingcouncil.ie/en/news-events/latest-news/ceim-standards-for-initial-teacher-education.pdf>
24. Tian, M. (2023). *Arts-Based Research Methods for Educational Researchers*. Routledge.
25. Ubuntu Network. (2019). *Guidelines for Development Education on School Placement: A Guide for Student Teachers on the Inclusion of Development Education in School Placement*. Ubuntu Network. <https://ubuntu.ie/wp-content/uploads/2022/07/RESOURCES-Guidelines-for-GCE-on-School-Placement-for-print.pdf>
26. UNECE. (2011). *Learning for the Future Competences in Education for Sustainable Development*. United Nations Economic Commission for Europe Strategy for Education for Sustainable Development.
27. UNESCO. (2014). *UNESCO roadmap for implementing the Global Action Programme on Education for Sustainable Development; 2014*. 37.
28. UNESCO. (2020). *ESD for sustainable development: A roadmap*. UNESCO. <https://doi.org/10.54675/YFRE1448>
29. Voulgari, R., & Koutrouba, K. (2026). The level of teachers' reflection: A systematic literature review. *International Journal of Instruction*, 19(1), 1–16. <https://doi.org/10.29333/iji.2026.1911a>
30. Ward, J., & Shortt, H. (2020). Using arts-based methods of research: A critical introduction to the development of arts-based research. In *Using Arts-Based Research Methods: Creative Approaches for Researching Business, Organisation and Humanities* (pp.1-13). Palgrave Macmillan.
31. White, S. (2025). Is there more to learning than social constructivism? *Journal of Learning Development in Higher Education*, (37), 1–9. <https://doi.org/10.47408/jldhe.vi37.1777>

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