CENTRE FOR CLIMATE CHANGE
AND SUSTAINABILITY EDUCATION

UCL

Climate Change and Sustainable Development (CCSD) Education in Egypt

Policy-relevant evidence from girls and their teachers in under-privileged urban primary schools in Egypt

July 2025

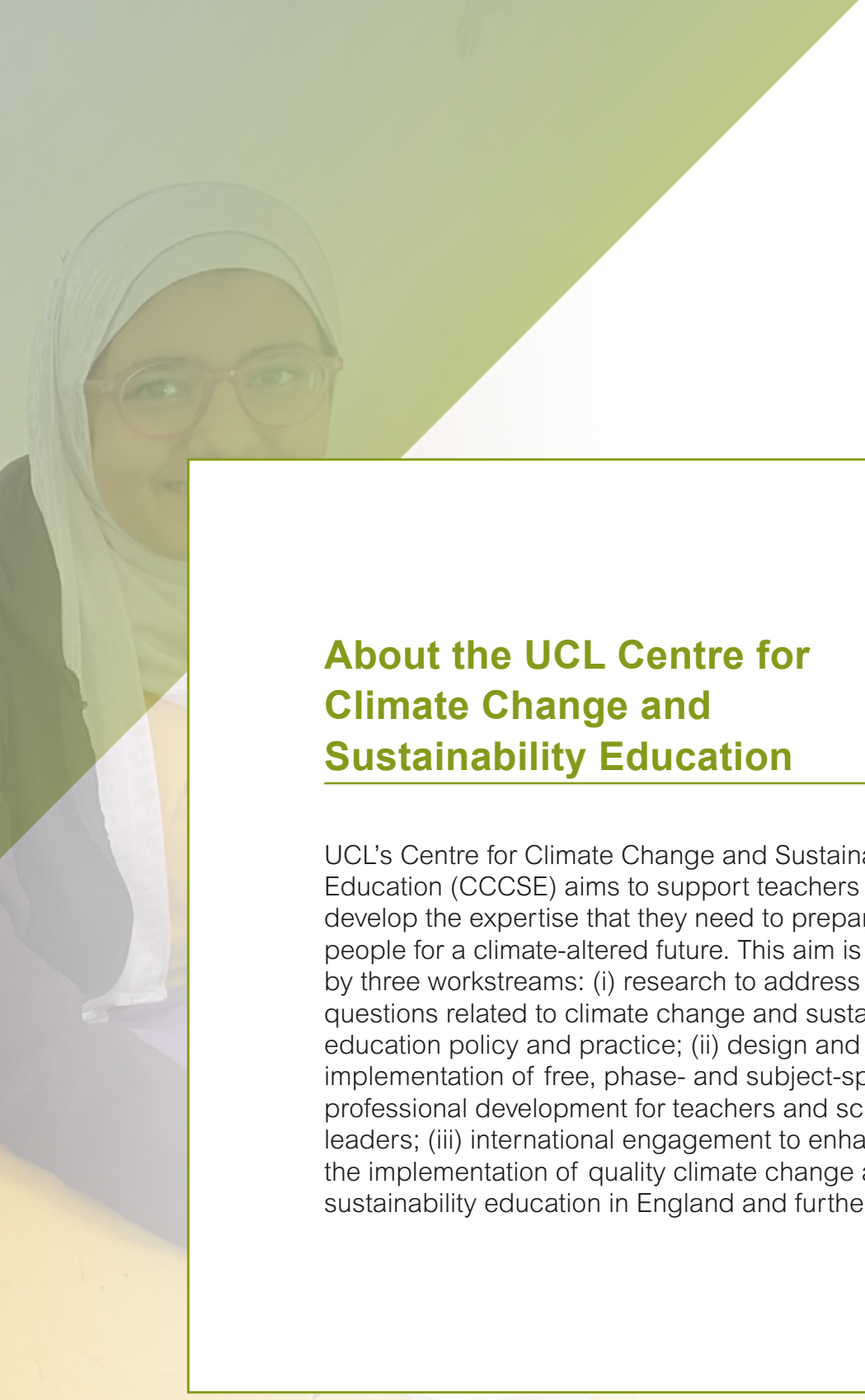
ACKNOWLEDGEMENTS

We would like to thank the girls and teachers in Egypt who participated in this research. We are also very grateful to project partners from the British Council who particularly supported with the design and dissemination of the teacher questionnaire. This research was made possible with funding from the British Academy ODA Challenge-Oriented Research Grants (Award Reference: IOCRG\100200).

This policy briefing summaries key findings from our full research report here (Hargreaves et al., 2025).

BRITISH COUNCIL

To cite this report: Hargreaves, E., Walshe, N., Elhawary, D., Sheldrake, R. and Perry, J. (2025). *Climate change and sustainable development (CCSD) education in Egypt: Policy-relevant evidence from girls and their teachers in under-privileged urban primary schools in Egypt.* Policy Briefing. University College London. London, UK.



About the UCL Centre for Climate Change and Sustainability Education

UCL's Centre for Climate Change and Sustainability Education (CCCSE) aims to support teachers to develop the expertise that they need to prepare young people for a climate-altered future. This aim is achieved by three workstreams: (i) research to address pressing questions related to climate change and sustainability education policy and practice; (ii) design and implementation of free, phase- and subject-specific professional development for teachers and school leaders; (iii) international engagement to enhance the implementation of quality climate change and sustainability education in England and further afield.

1. Introduction

This summary report presents key findings from research exploring the views of disadvantaged girls and their teachers in urban primary schools in Egypt on how the current curriculum, textbooks and teaching methods support their climate change and sustainability education. It focuses on girls' knowledge, understanding and perspectives of climate change, their suggestions for improving teaching to better promote awareness and action and how prepared they feel to confront and engage with the climate crisis.

1.1 Climate Change and Sustainable Development (CCSD) education

Education, particularly formal schooling, is critical for developing the knowledge, skills, values and capabilities that children and young people need in order to live sustainable lives and respond to the challenges of climate change. **Climate Change and Sustainable Development (CCSD)** education seeks to foster a deep understanding of the complex, interconnected, environmental and social challenges that define our time, while also empowering children and young people with the skills and confidence to take meaningful action. Agency and a sense of empowerment can be supported not only through developing a strong knowledge base about these issues, but also by having confidence in one's capacity to act to achieve change and having willingness to act. Collectively, these three dimensions – understanding, confidence in one's influence and willingness to act - have been conceptualised as action competence (Jensen & Schnack, 1997). Evidence suggests that to promote action competence in children and young people, schools should develop participatory, creative and emotionally responsive pedagogical approaches that support children to engage with real-world problems in their local communities (e.g. Monroe et al., 2019; Rushton et al., 2023).

1.2 The Egyptian context

Climate change threatens urban areas in Egypt in extreme ways, with the Intergovernmental Panel on Climate Change ranking the Nile Delta among the three deltas in the world most vulnerable to sea level rise (IPCC, 2023). Egypt has a growing population with many residing in urban areas in the Nile Valley and Delta (Ministry of Environment, 2023). The children living in these cities face the worst aspects of climate change destruction and an uncertain future, a challenge which they need the knowledge, understanding, skills, and agency to confront, starting in their earliest schooling.

The Egyptian Education Sector Plan 2023-2027 calls for quality and equity in primary schooling by integrating climate education into all curricula at primary level:

> *Education plays a key role in realizing the country's core goals of sustainable development …* moving from rote-learning to competency-based learning, preventing discrimination against women, addressing the challenges of globalization, citizenship, climate change, and creating stronger alignment with the pursuit of Sustainable Development Goal 4 (Ministry of Education and Technical Education, 2023, p.21; our emphasis).

As such, policymakers recognise the importance for Egypt of empowering children with knowledge, understanding, skills and agency in relation to both climate change and sustainability.

Women and girls experience greater vulnerability to the impacts of climate change than men and boys; and the impacts of climate change can increase existing inequalities (United Nations, 2022). The 2015 Paris Climate Agreement promoted gender equality and empowerment of women and girls as integral to environmental directives; empowering women and girls, including through elevating female voices within decision-making, for example, can help ensure effective policies and initiatives around mitigating and adapting to climate change (International Labour Organization, 2022). There is evidence that many Egyptian adults lack knowledge and understanding about climate change and display elements of climate anxiety (e.g. Elshirbiny & Abrahamse, 2020). However, research to date has not considered extents of awareness and anxiety in children within Egyptian primary schools.

The centralised, nationalised schooling system in Egypt means that all teachers follow the same curriculum through use of a standard textbook for each subject at each grade. However, we do not know how effective these textbooks are in empowering children to understand climate change and sustainability or take climate action (as per the Egyptian government's policy aims: Ministry of Education and Technical Education, 2023), nor what might better facilitate this empowerment. As such, it is essential to gather the perspectives of those who are most closely affected by textbooks but whose voices are among the least represented in Egypt: girls in primary schools and their teachers.

1.3 Research questions

The overarching research question for this project was:

What insights do the voices of Egypt's under-privileged urban girls and their teachers offer into the challenges and opportunities for teaching and learning CCSD within the national curriculum?

To address this, we explored four sub-questions as they relate to CCSD and CCSD education:

- RQ1: What forms of knowledge, awareness and potential for action are articulated by girls and teachers?
- RQ2: How do girls and teachers express their feelings, beliefs and perceived sense of agency?
- RQ3: What suggestions do girls and teachers offer regarding curriculum, textbooks, pedagogy and meeting future educational needs?
- RQ4: In what ways do girls and teachers express their voices, participate in decision making and demonstrate empowerment to act?

2. Methods

Data collection involved the following methods and participants:

- Child interviews (24 girls).
- Child questionnaires (501 girls), which included:

  a. An adapted Self-Perceived Action Competence Survey (SPACS) (Olsson et al., 2020), comprising ten Lickert scale tick-box questions, to explore the girls' action competence.

  b. Eight Sentence Starters to elicit girls' perspectives on specific aspects of CCSD, for example: 'One thing I would like most to learn about how to deal with the impacts of climate change is ...'.

  c. A drawing activity inviting girls to draw a picture illustrating how they felt about the threat of climate change in Egypt.

- Teacher focus groups (24 teachers).
- Teacher questionnaires (738 teachers).

The research was conducted with approval from the UCL Research Ethics Committee (REC 2032). Data were managed in accordance with the UK GDPR and DPA 2018 (Data protection number: Z6364106/2024/07/169).

3. Findings

3.1 Knowledge, awareness and potential for action

KEY FINDINGS

- Many girls conveyed knowledge and awareness of climate change, often focused on local events they had personally experienced, such as extreme weather.
- Girls frequently depicted climate change as a shift from a healthy to a damaged environment, mainly caused by human activities like pollution, with serious consequences including harm to people and nature.
- Almost all girls showed some knowledge of pro-environmental action and a willingness to act, focusing on rubbish collection, recycling; and caring for nature as key practices.
- Girls requested a greater breadth of CCSD-related lessons across all subject areas, so that they could better understand the causes and impacts of climate change and environmental degradation; and how to address them.
- Teachers conveyed awareness of climate change in line with international science, but lacked confidence in taking pro-environmental action.

This study highlights the knowledge, awareness and potential for climate action among Egyptian girls and their teachers. Findings from 501 **girls** in underprivileged urban primary schools in Alexandria align with global research showing that, while many struggled to fully explain the science of climate change, they demonstrated strong awareness of its broader impacts (for example, detrimental impacts on plants, animals and people: Figure 1). Girls described climate change as the degradation of a once clean and beautiful environment, caused by human actions like pollution from factories and cars, leading to harm to people and nature and extreme weather events. However, these impacts were often conflated with broader environmental degradation, particularly pollution of the air, water and land. One girl shared, 'The sea is now so polluted that we can't even go and play in it anymore. People are also throwing rubbish in the parks and that really bothers me when I see it' [Interview].

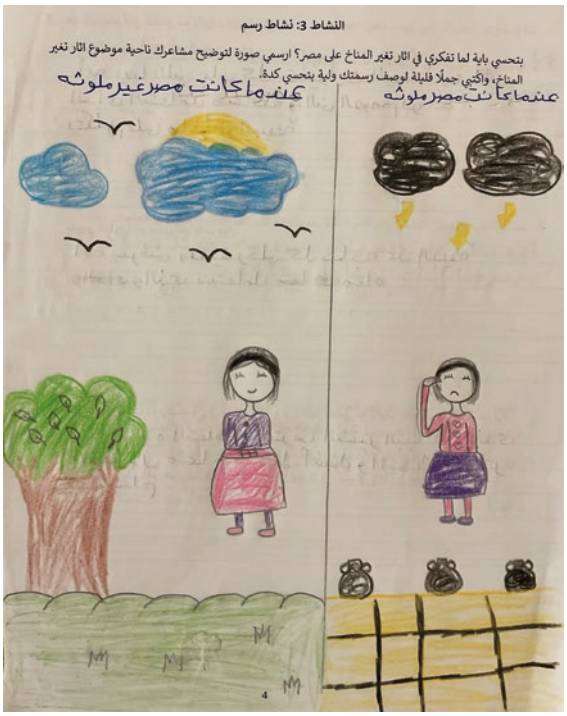


Figure 1. A drawing illustrating a girl's perception of climate change as change from a clean to a polluted environment.

Girls identified key climate mitigation actions, such as avoiding pollution (air, water and land), planting trees and caring for plants, animals and fish. These findings align with international research showing that children often view reducing pollution and tree planting as effective responses, without being able to explain the mechanisms by which these would reduce climate change (e.g., Lee et al., 2020).

Girls generally felt confident in their knowledge of climate action and were eager to learn more so they could take action themselves and inspire others to do the same; for example, one girl wrote, 'I want to understand how the climate changes quickly; and learn lots of information about that. After learning, I would like to benefit others and explain to them the importance of environmental protection' [Sentence Starter 1].

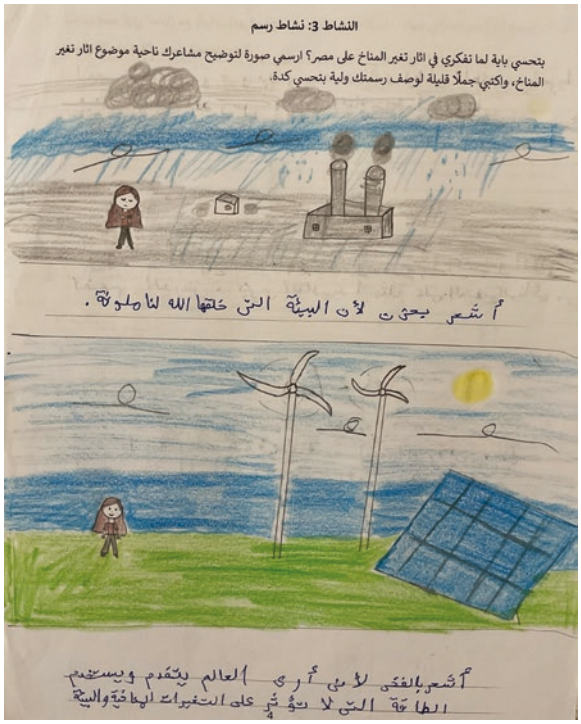


Figure 2. A drawing illustrating a girl's perception of the impact of using clean energy to improve the environment.

Survey results showed that most **teachers** were aware of climate change, with 91% agreeing (selecting *Strongly agree* or *Agree*) that there is clear scientific evidence for global warming [Teacher Questionnaire]. Many felt confident teaching CCSD and reported having meaningful discussions about it in their schools. A small number of teachers expressed doubts; for example, 5% questioned scientific consensus and 19% compared current climate change to past ice ages. While some teachers wanted to take environmental action, many conveyed that they were unsure how to do so.

3.2 Feelings, beliefs and perceived sense of agency in relation to CCSD

KEY FINDINGS

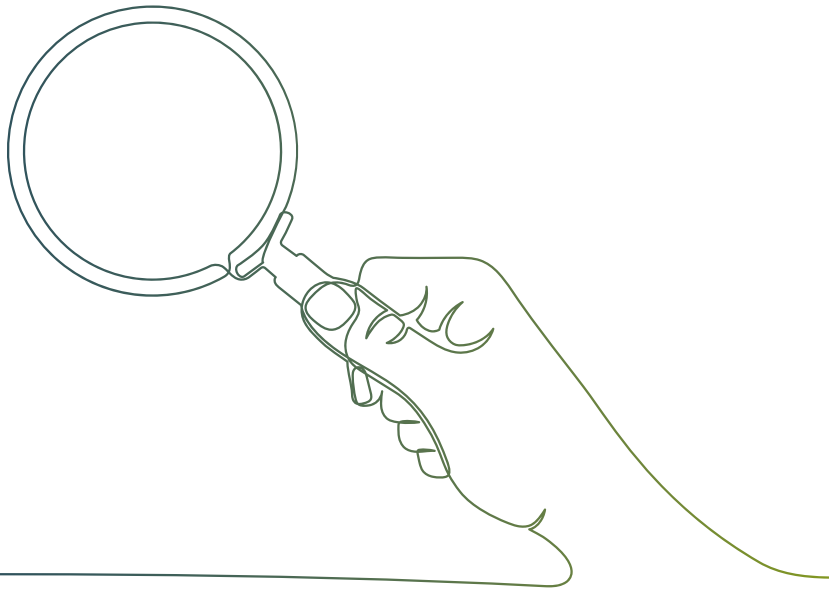
- Climate change emerged as a deeply emotional issue for many girls, who expressed feelings of sadness, fear, desperation, powerlessness and anger. These emotions were linked to concerns over environmental degradation and an uncertain future for Egypt.
- Girls often drew upon personal experiences of the impacts of climate change, as well as feelings of national pride, when expressing a sense of environmental responsibility and ecological agency. For example, their direct encounters of extreme weather or the polluted sea appeared to play a central role in shaping their attitudes and motivations.
- Almost all teachers worried about climate change, with many indicating that environmental protection was important to them. However, fewer believed their students shared this sense of importance, suggesting a disconnect between teachers' and girls' perceptions of the girls' engagement and awareness.

Global research shows that young people often experience negative emotions about climate change, such as worry, sadness, anger and powerlessness (e.g., Walshe et al., 2025). Similarly, the **girls** in our study expressed strong emotions, including fear, sadness, anger and helplessness (e.g. Figure 3). One girl wrote, 'I feel hopeless in improving the environment'; another shared, 'I feel afraid, confused and stranded,' while a third said, 'I feel annoyed because people don't cooperate to improve the environment' [Sentence Starter 4]. Despite these feelings, their emotional responses appeared to fuel a strong motivation to take climate action.

Figure 3. A drawing illustrating a girl's anger about a polluted landscape and extreme weather patterns.

The girls in our study believed they were better equipped than boys to understand, advocate for and act on climate change, attributing this to being inherently cleaner, more knowledgeable, and more effective at learning and persuading others. One participant reflected, 'I feel that girls, who were looked down upon in the past, are capable of changing the world' [Sentence Starter 2]. Girls also expressed pride in their country, Egypt, which encouraged them to feel environmental responsibility and ecological empowerment.

A significant majority of **teachers** (73%) reported worrying *All the time* or *A lot* about Egypt's environmental future; several described intense emotional and physiological reactions to climate change, including feelings of being 'suffocated', having 'shortness of breath' and facing states of 'turmoil,' 'disturbance' and 'psychological instability' [Teacher Questionnaire]. However, teachers seemed to question the depth of their students' engagement, expressing doubt that the girls were genuinely interested in, or concerned about, climate change and sustainable development.



3.3 Curriculum, textbooks and pedagogical approaches

KEY FINDINGS

- Girls requested more engaging CCSD lessons using participatory methods that let them take active roles; they also wanted teachers to be kinder and more attentive to their individual learning needs.
- To better understand and engage with CCSD, girls requested textbooks with simpler explanations, more colourful illustrations and storytelling.
- Most teachers valued the CCSD content in the current curriculum but wanted it expanded across all subjects. However, they also criticised the curriculum's overall density, which limited the time available for CCSD.
- Only 36% of teachers reported that they had participated in any training or professional development related to CCSD; teachers strongly articulated a desire for more training to support their teaching in this area.

Girls called for CCSD to be integrated across all subjects, with a strong scientific foundation and participatory, emotionally responsive teaching. They advocated for moving beyond traditional, didactic pedagogical methods toward emotionally responsive and enquiry-based approaches which afforded opportunities to take practical action; one girl requested, 'Teach us how to discover things we haven't learnt,' and another, 'I like the teacher to allow anyone who wants to, to teach the lesson.' Girls provided a wealth of further suggestions for making textbooks more engaging, for example through storytelling, experiments, images and arts-based learning. Additionally, they emphasized the importance of kind, respectful and emotionally attuned teachers who are 'funny', 'patient', 'calm', 'smiley', 'polite', 'encouraging', 'good-natured', 'friendly', 'joyful', and 'aware of the girls' feelings' [responses to Sentence Starter 7].

Some **teachers** praised the curriculum for its modern approach and environmental focus; for example, 'The new curriculum is undoubtedly an excellent and advanced one, keeping pace with the times. It's wonderful that we are teaching girls how to protect the environment' [Teacher Focus Group]. However, they also noted that CCSD content is mostly limited to science, social studies and English textbooks. They expressed a desire to integrate CCSD across all subjects, yet felt constrained by limited time and a test-focused system, which hindered deeper engagement with students' affective responses and the development of emotional resilience. Relatively few teachers (36%) reported that they had participated in any training or professional development related to CCSD and two thirds of the teachers (68%) reported having taken the initiative to teach themselves about CCSD. Most teachers agreed that they would like more training (where 81% selected *Strongly agree* or *Agree*) [Teacher Questionnaire].

3.4 Voice, participation and empowerment to act

KEY FINDINGS

- Teachers generally felt confident teaching about climate change but reported feeling less empowered to take action themselves.
- Only a quarter of teachers believed their students frequently understood how to respond to climate change and just one third thought girls were already taking action, contrasting sharply with the girls' own strong sense of capability and empowerment.
- Most girls believed they could make a difference through climate action, with even more expressing a willingness to act, such as keeping the environment clean, caring for nature and advising others how to do so.
- Girls felt especially empowered to act on climate issues, describing themselves – in relation to their male counterparts - as more knowledgeable, curious and persuasive in advocating for change.
- Girls found it empowering to take part in this research, as it gave them a platform to express their genuine views and be heard.

Despite coming from under-privileged communities, the girls articulated a strong sense of agency, with a belief in their capacity to act to achieve change. Most girls believed that their actions could influence what happened in the future and expressed an overwhelming willingness to take climate action; for example, 97% conveyed agreement with 'I know how one should take action at school in order to deal with the impacts of climate change' [SPACS]. These findings, therefore, provide evidence to suggest that inclusive teaching of CCSD in primary school could act as a catalyst for enabling girls to exercise their right to participate in decisions that affect their lives and communities (Save the Children, 2021; UNICEF, 1989). Given the vital role of girls' education in mitigating climate change (Kwauk & Winthrop, 2021) and the 2015 Paris Agreement's emphasis on gender equality in environmental policy, the demonstrated action competence of our female participants signals a promising trajectory for CCSD efforts in Egypt.

A final finding was that the girls found participation in the research empowering, with the process itself enhancing their commitment to climate action and their sense of agency. One participant shared that, 'I felt happy because someone came in and asked me about my feelings. I felt so happy that I was about to cry out of joy', while another conveyed, 'This is an opportunity which I won't have again. I wrote down what I want - my suggestions - and was happy. This is an unforgettable day and I'm extremely happy' [Sentence Starter 8]. As such, girls in our research expressed a strong desire to be CCSD agents, highlighting the need for inclusive classrooms and curricula that amplify their voices, empower their engagement and connect them with environmental initiatives.

4. Opportunities for Climate Change and Sustainability Development Education in Egypt

The United Nations (UN) Committee on the Rights of the Child has published authoritative guidance on children's rights and the environment with a particular focus on climate change, which articulates the right to education that is 'transformative, inclusive, child-centred, child-friendly and empowering' (UN, 2023, p.9). This research provides insights from disadvantaged primary school girls and their teachers in Egypt which echo the UN's guidance, with significant implications and opportunities for policymakers, curriculum and textbook developers and teachers.

1. Strengthen CCSD education within science and embed across all subjects within the curriculum

Girls requested a greater breadth of CCSD-related lessons across all subject areas, so that they could better understand the causes and consequences of climate change. Taking a multidisciplinary approach would allow children and young people to explore the scientific causes and impacts of climate change, as well as providing opportunities to engage with issues of climate justice and promoting greater awareness of green careers. Broader inclusion in the national curriculum, reflected in textbooks and supported by subject-specific teacher professional development, would ensure consistent, equitable learning experiences and empower students to respond effectively to environmental challenges.

2. Support girls' emotional wellbeing through participatory pedagogies

Girls reported experiencing a range of emotions in relation to climate change, including anxiety, sadness, and anger. Embedding emotionally responsive, participatory pedagogies can foster resilience and agency, while shifting to learner-centred approaches with real-life, hands-on activities has the potential to enhance engagement and confidence. Textbooks should support this by including storytelling, experiments, images and arts-based learning, helping students process emotions constructively through active learning that also facilitates climate action.

3. Develop girls' agency by providing meaningful opportunities for engagement, action and impact

Within our data, girls conveyed that they wanted to take more action on CCSD but lacked meaningful opportunities to do so. Activities that foster agency, such as school-based and local community projects - including raising others' awareness - could enhance learning and feelings of empowerment; however, opportunities to engage with these in the formal curriculum remain limited. As such, supported by textbooks, teachers should expand inclusive, curriculum-aligned opportunities for engagement with CCSD, to ensure all children and young people are empowered to participate in shaping more sustainable futures.

4. Cultivate girls' emerging identities as climate action advocates to enhance their agency and influence

Throughout our research, girls articulated a clear desire to be agents of change for CCSD, underpinned by a desire to serve and protect their country. As such, teachers should create inclusive, engaging classrooms that offer platforms for girls to voice their ideas and ensure their contributions shape future lessons, fostering empowerment and sustained engagement in climate and sustainability education; and encouraging participation in environmental volunteering and green careers. Further, policymakers and textbook developers should leverage girls' strong identification as climate action advocates by involving them in future curriculum, textbook and pedagogy research; and linking them to relevant organisations who are attending to these issues.

5. Provide all teachers with professional development related to CCSD

The research revealed significant gaps in CCSD professional development for teachers in Egypt, with most teachers reporting existing training being self-taught, thereby limiting reach and consistency. To expand teachers' capacity to teach the complex, interdisciplinary knowledge and skills associated with CCSD, structured, curriculum-aligned opportunities for professional development are needed for teachers. This should include subject-specific training which explores emotionally responsive and creative pedagogical approaches (including for in-service and pre-service teachers), and access to diverse, high-quality textbook resources, as well as networks of supportive local or national organisations.

5. References

Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and be(com)ing a knowing researcher. *International journal of transgender health*, *24*(1), 1-6. https://www.tandfonline.com/doi/full/10.1080/26895269.2022.2129597

Elshirbiny, H., & Abrahamse, W. (2020). Public risk perception of climate change in Egypt: a mixed methods study of predictors and implications. *Journal of Environmental Studies and Sciences, 10,* 242-254. https://link.springer.com/article/10.1007/s13412-020-00617-6

Edwards, R. C., Perry, J., & Walshe, N. (2025) Socioeconomic variation in emotional and behavioural engagement with the climate crisis in England: Perspectives for education. *Behavioral Sciences, 15*(4), 407. https://www.mdpi.com/2076-328X/15/4/407

Hargreaves, E., Elhawary, D., Walshe, N., Sheldrake, R. and Perry, J. (2025). *Climate change and sustainable development education in Egypt: Policy-relevant evidence from girls and their teachers in under-privileged urban primary schools in Egypt.* University College London. London, UK. Available at https://discovery.ucl.ac.uk/id/eprint/10210589/

International Labour Organization. (2022). *Just transition: An essential pathway to achieving gender equality and social justice*. Geneva: International Labour Organization. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_860569.pdf

International Panel on Climate Change. (2023). Summary for Policymakers. In J. Romero & H. Lee (Eds.), *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 1–34). Geneva: IPCC. https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf

Jensen, B. B., & Schnack, K. (1997). The Action Competence Approach in Environmental Education. *Environmental Education Research, 3*(2), 163-178. https://www.tandfonline.com/doi/abs/10.1080/1350462970030205

Kwauk, C., & Winthrop, R. (2021). *Unleashing the creativity of teachers and students to combat climate change: An opportunity for global leadership.* Brookings. https://www.brookings.edu/articles/unleashing-the-creativity-of-teachers-and-students-to-combat-climate-change-an-opportunity-for-global-leadership/

Lee, K., Gjersoe, N., O'Neill, S., & Barnett, J. (2020). Youth perceptions of climate change: A narrative synthesis. *Wiley Interdisciplinary Reviews: Climate Change, 11*(3), e641. https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wcc.641

Ministry of Environment. (2023). *Egypt's Second Updated Nationally Determined Contributions.* Cairo: Ministry of Environment.

Ministry of Education and Technical Education. (2023). *The Education Sector Plan for Egypt 2023-2027*. Cairo: MOETE. https://www.globalpartnership.org/content/education-sector-plan-2023-2027-egypt

Monroe, M., Plate, R., Oxarart, A., Bowers, A., & Chaves, W. (2019). Identifying effective climate change education strategies: a systematic review of the research. *Environmental Education Research, 25*(6), 791-812. https://www.tandfonline.com/doi/full/10.1080/13504622.2017.1360842

Olsson, D., Gericke, N., Sass, W., & Boeve-de Pauw, J. (2020). Self-perceived action competence for sustainability: the theoretical grounding and empirical validation of a novel research instrument. *Environmental Education Research, 26*(5), 741-760. https://www.tandfonline.com/doi/full/10.1080/13504622.2020.1736991

Rushton, E., Sharp, S., & Walshe, N. (2023). *Global priorities for enhancing school-based climate change and sustainability education*. London: British Council. https://www.britishcouncil.org/sites/default/files/british_council_schools_connect_climate_research_report.pdf

Save the Children. (2021). *Lead Like a Girl: Ensuring adolescent girls' meaningful participation in decision-making processes*. London: Save the Children. https://resourcecentre.savethechildren.net/document/lead-girl-ensuring-adolescent-girls-meaningful-participation-decision-making-processes

United Nations. (2022). *Dimensions and examples of the gender-differentiated impacts of climate change, the role of women as agents of change and opportunities for women.* Bonn: United Nations. https://unfccc.int/documents/494455

United Nations. (2023). *CRC/C/GC/26: General comment No. 26 (2023) on children's rights and the environment with a special focus on climate change*. https://www.ohchr.org/en/documents/general-comments-and-recommendations/crccgc26-general-comment-no-26-2023-childrens-rights

UNICEF. (1989). *Convention on the Rights of the Child*. https://www.unicef.org/child-rights-convention

Walshe, N., Perry, J., & Healy, G. (2025) Student perspectives on climate change and sustainability education: experiences and expectations of ages 11-14 in England. *UCL Open Environment*. https://doi.org/10.14324/ucloepreprints.283.v1

UCL Centre for Climate Change and Sustainability Education
Institute of Education
University College London
20 Bedford Way
London
WC1H 0AL

ucl.ac.uk/ioe/departments-and-centres/centres/ucl-centre-climate-change-and-sustainability-education

climateeducation@ucl.ac.uk

@ucl-cccse.bksy.social