

**Examining the level of Education for Sustainable Development (ESD) in the native
language learning environments of Ireland and India. Creating an educational toolkit
to enhance ESD**

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Introduction to Research

The concept of Education for Sustainable Development (ESD) was introduced by UNESCO (United Nations Educational, Scientific and Cultural Organisation). Through the lens of ESD, education can be seen as the “*key to unlocking progress in all the global development goals*”¹. Thus, in order to create a more sustainable global environment and make every effort to achieve the 2030 UN Sustainable Development Goals, SDGs, education must be enhanced and utilised, particularly education of the youngest members of society, who shall face the most extreme consequences if action is not taken immediately. It is therefore imperative that ESD is accessible to all, particularly young learners.

The United Nations, henceforth referred to as the UN, provides a vast series of educational resources designed to inform not only young people but members of all generations. A simple web search of the SDGs, presents a comprehensive collection of lesson plans, reading lists and games on the topic. It promptly became evident however, that two clearly identifiable obstacles lay in the way of accessing these resources, which were designed to be broadly accessible to all.

As a native Irish speaker, the first obstacle presented itself, while wondering if these plentiful resources were available “*as Gaeilge*” through Irish. This unfortunately is not the case. Each of the UN provided tools are available in the six official languages of the UN, Arabic, Chinese, English, French, Russian, and Spanish, presenting an inherent problem in the accessibility of the valuable collection of educational resources. Estimates collated by the UN, suggest that as many as four billion people or up to 45-50 percent of the population do not have one of these languages as their first language². Ethnologue, a database, providing data on the number of living languages in our world today, notes that

¹*What you need to know about education for sustainable development* (Accessed: September 26) UNESCO. Available at: <https://www.unesco.org/en/sustainable-development/education/need-know>.

²*Multilingual education: A key to quality and inclusive learning* (no date) United Nations. Available at: <https://www.un.org/en/un-chronicle/multilingual-education-key-quality-and-inclusive-learning> (Accessed: September 2026).

there exists over 7,000 languages in our world today³. Many of which are spoken by small communities, often those most severely impacted by the crises caused by the lack of sustainability on our planet.

The second problem presented is, despite the readiness of information online, one must seek this information out, in order to find the UN resources. The presence of the information does not mean that it necessarily reaches those in need of it. Therefore, the educational tools remain inaccessible for those to whom the ultimate consequences of the current lack of sustainability poses the greatest threat, our youngest generations. Although some young individuals may possess a passion for protecting the people, nature and planet surrounding them, the concept of sustainability often remains foreign.

Only four years remain until the targets set by the UN for 2030, must potentially yet again be renewed to reflect a failure of completion. It is hoped that this project may, in a small way, identify a void in the efforts being made to meet these goals and attempt to fill this space, with education, optimism and a more sustainable future.



Fig. 1: The Sustainable Development Goals, as outlined by the United Nations.

³How many languages are there in the world? (no date) *Ethnologue (Free All)*. Available at: <https://www.ethnologue.com/insights/how-many-languages/> (Accessed: September 2026).

This agenda, adopted by all UN member states, “provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.”⁴

The Sustainable Development Goals

The Sustainable Development Goals were adopted by the UN in 2015 at the UN Headquarters in New York. The goals followed a series of previous similar endeavours, most significantly linked to the Millennium Development Goals, MDGs, *“which started a global effort in 2000 to tackle the indignity of poverty”⁵*. The MDGs had a number of successes including decreasing the number of children out of school by more than half since 1990⁶. The current SDGs were created as *“a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity”*. *There exist seventeen interlinked goals, in the recognition that “action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability”⁷*.

It is acknowledged by the UN, that *“countries have committed to prioritize progress for those who're furthest behind...The creativity, knowhow, technology and financial resources from all of society is necessary to achieve the SDGs in every context”⁸*. Therefore, given this

⁴*The 17 goals | sustainable development* (no date) United Nations. Available at: <https://sdgs.un.org/goals> (Accessed: September 2026).

⁵*Background on the goals* (no date) UNDP. Available at: <https://www.undp.org/sdg-accelerator/background-goals> (Accessed: September 2026).

⁶ Ibid

⁷*Sustainable development goals (sdgs)* (no date) UNDP. Available at: <https://www.undp.org/node/552671> (Accessed: September 2026).

⁸ Ibid

significant opportunity and living in a country with greater technological and financial resources than many others, one must commit individually to attempt to support those in immediate need.

There exists a range of texts examining the subject of sustainable development; the book *“Climate Justice: Hope, Resilience, and the Fight for a Sustainable Future”*⁹ written by former President of Ireland and UN High Commissioner for Human Rights, Mary Robinson, identifies the climate crisis as not alone an environmental crisis, but a crisis for human rights. Reading this book one experiences the harsh realities faced by those, specifically women of indigenous background, impacted unequally by climate change. In 2018, this book highlighted the necessity of this research, in order to provide support for these indigenous communities facing some of the most grievous consequences of a lack of sustainable development in our world. One of the people who Robinson discussed Climate Justice with, was Patricia Cochran, a Yupik scientist from Nome Alaska, who supports indigenous Arctic communities with melting ice and rising sea levels¹⁰. Ms. Cochran, serves as just one example amongst many women interviewed, taking action to support sustainable development in their local communities.

⁹Robinson, M., Urquhart, R. and Palmer, C. (2021) *Climate justice: Hope, resilience, and the fight for a sustainable future*. Tantor Media, Inc.

¹⁰Home. Available at:
<https://www.sierraclub.org/sierra/climate-justice-antidote-for-your-climate-change-paralysis-mary-robinson>
(Accessed: September 2026).

Education for Sustainable Development

Education for Sustainable Development, ESD, may be understood as the response of UNESCO to “*the urgent challenges facing our planet*”¹¹. It endeavours to empower people to live in a manner which supports the environment, society and economy of our world, perhaps optimistically stating that this will in turn “*create a better future for everyone*”¹². UNESCO is the UN agency responsible for the implementation of the “*ESD 2030 Framework*”. In 2021, UN member states committed to the implementation of the UNESCO ESD for 2030 Framework¹³, through the Berlin Declaration on Education to Sustainable Development; Learn for our planet: act for sustainability¹⁴. The framework was recognised in 2022 as a “*powerful strategy to transforming education*” at the UN Transforming Education Summit¹⁵. In line with this framework, government agencies, educators and civil society actors may take action in five key areas:

- Advancing Policy
- Transforming learning environments
- Building capacities of educators
- Empowering and mobilising youth
- Accelerating local level action

UNESCO further identifies the style of learning necessary to effectively acquire knowledge of ESD, advocating for learning that is:

- **Cognitive:** Improving how we think and understand information.
- **Socio-emotional:** Building social skills, empathy and emotional intelligence.

¹¹Education for Sustainable Development (2026) UNESCO. Available at: <https://www.unesco.org/en/sustainable-development/education> (Accessed: September 2026).

¹² Ibid

¹³40th session, Paris, 2019 40 C/23 3 September 2019. Available at: https://www.iau-hesd.net/sites/default/files/documents/unesco_esd2030_framework.pdf (Accessed: September 2026).

¹⁴Unesdoc.unesco.org. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000381229> (Accessed: September 2026).

¹⁵ Ibid

- **Behavioral:** Encouraging positive actions and behaviors.¹⁶

Fundamentally UNESCO note that ESD must be understood as “*a lifelong learning process that is an integral part of a quality education*”¹⁷. UNESCO created a Roadmap¹⁸ for the progression of ESD. Both the Framework and Roadmap find that action must be taken in five key areas: communities, youth, learning environments, educators and policy.

The research undertaken in this Laidlaw Project, attempts to develop a toolkit which may be utilised by youth, taught by educators, in native language community learning environments, consequently impacting policy that is broadly accessible to all.

The Concept

The concept of the project was inspired by the need to create a more sustainable global environment and make every effort to achieve the 2030 UN Sustainable Development Goals. Through consultations, such as discussing the topic with former President Mary Robinson at her annual Climate and Nature Conference, a conclusion was reached. Education is the most valuable resource in our attempts to meet these goals. Thus reviewing the outline proposed by UNESCO to enhance ESD and failing to find support in the native language of the country where this project was undertaken was disheartening.

Having identified two clear absences in the resources provided by the United Nations and UNESCO; language and accessibility, it became apparent what the key to the research should be. This project seeks to fill these voids, beginning the development of an educational toolkit, which may be utilised to inform the youngest generations of our global society, in their native language.

¹⁶UNESCO (2024). *What you need to know about education for sustainable development*. [online] Unesco.org. Available at: <https://www.unesco.org/en/sustainable-development/education/need-know> [Accessed Sept. 2026].

¹⁷ Ibid

¹⁸ Unesco (2020). *Education for Sustainable development: a Roadmap*. *Education for Sustainable development: a Roadmap*. [online] doi:10.54675/yfre1448.

The Approach

The hypothesis utilised was as follows; Learning through a native language enhances understanding and impacts how concepts are put into action. Thus if this is the case, the necessity of the creation of this toolkit is vital.

The research primarily examined the levels of ESD learning in Ireland, through Irish. Exploring how young people are taught what they are taught and how ESD can be further implemented into this system. The research was undertaken as a fundamental first step, in the ultimate completion of a toolkit which may be utilised worldwide. Following examination of Irish ESD learning environments the toolkit began to be developed.

Having previously undertaken research mapping the levels of ESD in undergraduate degree courses at Trinity College Dublin, a similar approach has been utilised in this research to examine existing resources and the manner in which a toolkit could be created.

Results

The primary research undertaken did in fact support the proposed hypothesis. Evidence from UNESCO and others, indicates that learning through a native language significantly increases appreciation of the topic. The Sustainability Directory offers research which highlights that *“Indigenous languages often contain unique knowledge about local ecosystems and sustainable practices.”*¹⁹

The research went further, identifying something unexpected; the link between the biodiversity of our planet and the diversity of linguistics. The UN Environment Programme, UNEP, has a Convention on Biological Diversity. The convention notes that *“Biodiversity is the living foundation of sustainability because it provides the essential ecosystem services—such as clean water, fertile soil, and climate regulation—required to support life and meet human*

¹⁹Ijatuyi, E.J., Lamm, A., Yessoufou, K., Suinyuy, T. and Patrick, H.O. (2025). Integration of indigenous knowledge with scientific knowledge: A systematic review. *Environmental Science & Policy*, [online] 170(104119), p.104119. doi:10.1016/j.envsci.2025.104119.

*needs without depleting future resources*²⁰. Therefore this connection appears invaluable. To delve deeper into the research undertaken, some of the findings regarding this connection are noted.

There exists over 800 indigenous languages in New Guinea, alongside over 13,634 cataloged plant species. Further, the Amazon basin is home to a great diversity of languages and is one of the most biologically diverse areas in the world. It has been found that;

*“These areas of high linguistic diversity sustain traditional ecological practices vital for environmental conservation. This correlation is because each language and culture carries specific practices and knowledge of environmental management to balance and regenerate local ecosystems”*²¹.

In 2020, UNESCO found that over eighty percent of the world’s biodiversity may be found making up indigenous territories²². Therefore, it may be garnered that a significant appreciation for sustainable practice already exists in these territories, yet access to education is frequently limited. Thus highlighting the necessity of creating a more accessible manner in which ESD can be learned and practiced now and in the future.

Ireland itself, proved to be attempting to educate children on the topics of ESD. The Irish government has put in place the ‘*ESD to 2030 National Strategy*’, the second now in existence, it follows the UNESCO Framework on the topic²³. One notable finding was that in 2025, the Department of Education and Youth has delivered €859,000 in ‘*ESD to 2030*’

²⁰www.cbd.int. (n.d.). *Biodiversity is essential for sustainable development and human well-being | Convention on Biological Diversity*. [online] Available at: <https://www.cbd.int/article/biodiversityforSDGs> [Accessed Sept. 2026].

²¹ Culturalsurvival.org. (2024). *The Language of the Earth: How Indigenous Languages Safeguard Biodiversity and Cultivate Possible Futures amid Climate Change*. [online] Available at: <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/language-earth-how-indigenous-languages-safeguard> [Accessed Sept. 2026].

²²Ibid

²³gov.ie. (2018). *National Strategy on Education for Sustainable Development in Ireland*. [online] Available at: <https://www.gov.ie/en/department-of-education/publications/national-strategy-on-education-for-sustainable-development-in-ireland/> [Accessed Sept. 2026].

funding to 390 schools across the country²⁴. Nevertheless, it is notable that although ESD projects have been carried out in Gaeltacht, Irish speaking schools, the resources offered by the Irish Government do not provide adequate if any support through Irish. Again this underscores the necessity of a toolkit for native languages.

A study which took place in Ethiopia in 1994, “introduced mother tongue instruction in primary schooling for the largest ethnic group in the country”. The study found that learning and instruction through a child’s native language increased the probability of being able to read an entire sentence by 40%. The study serves as another significant example of the positive effect of education of children through their mother tongue²⁵.

Furthermore, the toolkit itself must not simply be understood as a mechanism for offering education, yet instead as a manner in which education can be both shared and received, through the creation of a toolkit that is universally accessible. This common form of communication, may in return open pathways, to a sharing of knowledge and perspectives. Through offering knowledge of the SDGs to Indigenous peoples, in turn one will stand to benefit enormously from the diversity of perspectives already possessed, particularly regarding methods of conservation.

Thus, in this way an opportunity for mutual exchange is created. The toolkit in no way will infringe upon previous sustainable practice or encourage change in this regard. Alternatively, education regarding the SDGs is required, not as a replacement to Indigenous ways of knowing, but as a manner in which communities may become empowered to preserve their own knowledge and disseminate unique approaches towards achieving the goals.

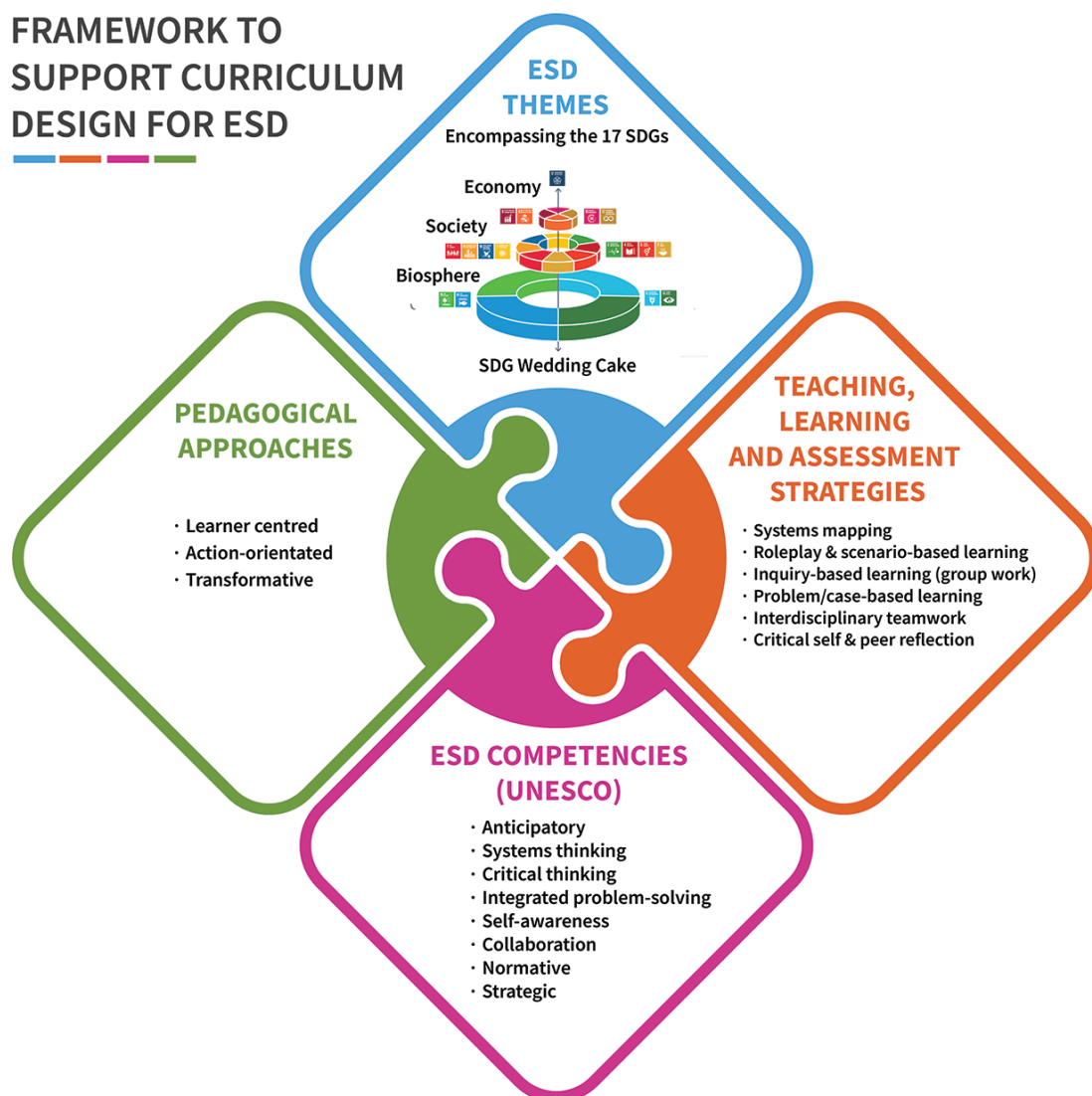
²⁴Education for Sustainable Development Newsletter. (n.d.). [online] Available at: <https://oide.ie/wp-content/uploads/2025/12/ESD-Newsletter-Issue-21.pdf> [Accessed Sept. 2026].

²⁵Ramachandran, R. (2017) ‘Language use in education and Human Capital Formation: Evidence from the Ethiopian Educational Reform’, *World Development*, 98, pp. 195–213. doi:10.1016/j.worlddev.2017.04.029.

The Toolkit

The toolkit shall be created for young learners. Those between the ages of four and eight, although not restricted to this. It became evident that the toolkit must be one which circumvents the barrier of language. Taking these factors into account a pictorial guide to the SDGs and ESD would prove the most effective.

Thus ideation for the toolkit commenced with study of the approach taken by Trinity College Dublin, TCD. Illustrated below, is the TCD Framework to support Curriculum Design for ESD.



Created by the Centre for Academic Practice, Trinity College Dublin. V4.
SDGs Wedding Cake CC BY-ND 3.0 by Azote for Stockholm Resilience Centre, Stockholm University (edited). Graphics licenced from SLdesign, Adobe Stock (edited).

Figure 1: ESD Curriculum Design Framework

Within this framework key ESD competencies are identified. It may be noted also that ESD Themes are in use in place of SDG themes, in order to align with the SDG Wedding Cake vision. This vision encourages a move away from a sectoral approach to ESD, in the belief that society and economies are dependent upon a functional biosphere. The SDG Wedding Cake was created by Rockstrom and Sukhdev in 2016 and consists of three layers; Economy, Society and Biosphere.

The seventeen SDGs are interconnected and interdependent within the three tiered wedding cake, individual goals are placed in each section: Biosphere (SDGs 6, 13, 14, 15) , Society (SDGs 1, 2, 3, 4, 5, 7, 11, 16)) and the Economy ((SDGs, 8, 9, 10, 12) with SDG17, Partnerships, crosscutting each tier.

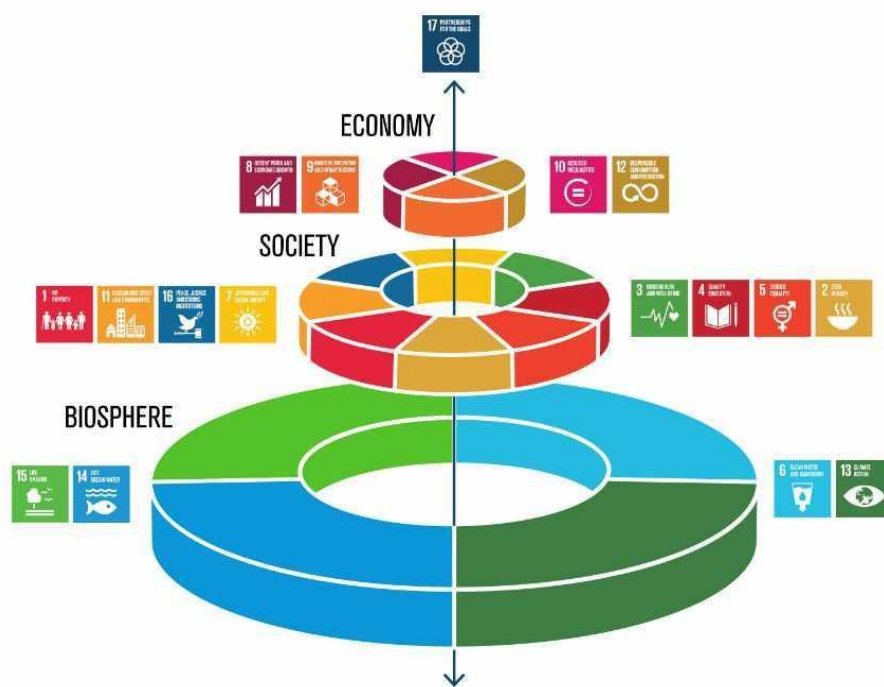


Figure 2: The SDGs Wedding Cake

In order to ensure that students become capable and informed actors of change, certain pedagogical approaches must be put in place. The approaches are as follows;

- **Learner Orientated:**
 - *“Learner-centred pedagogy sees students as autonomous learners and emphasizes the active development of knowledge rather than its mere transfer and/or passive learning experiences. The learners’ prior knowledge as well as their experiences in the social context are the starting points for stimulating learning processes in which the learners construct their own knowledge base. Learner centred approaches require learners to reflect on their own knowledge and learning processes in order to manage and monitor them. Educators should stimulate and support those reflections. Learner-centred approaches change the role of an educator to one of being a facilitator of learning processes (instead of being an expert who only transfers structured knowledge) (Barth, 2015)”²⁶*
- **Action Orientated:**
 - *"In action-oriented learning, learners engage in action and reflect on their experiences in terms of the intended learning process and personal development. The experience might come from a project (in-service learning), an internship, the facilitation of a workshop, the implementation of a campaign, etc. Action-learning refers to Kolb’s theory of the experiential learning cycle with the following stages: 1. Having a concrete experience, 2. Observing and reflecting, 3. Forming abstract concepts for generalization and 4. Applying them in new situations (Kolb, 1984). Action-learning increases knowledge acquisition, competency values clarification by linking abstract concepts to personal experience and the learner’s life. The role of the educator*

²⁶Forde, C., Rooney, P., Byrne, N., Shé, C., Mcavinia, C., Gallagher, J., Roche, C., Hodgers, J., **O’Hora, A.**, Urbaniuk, K. and Rees, I. (n.d.). *HEA Teaching and Learning Conference December 2025 Leading Change Together: Building the Future of Teaching and Learning in Higher Education Mapping and building capacity in education for sustainable development in Trinity College Dublin Find Out More*. [online] Available at: https://hub.teachingandlearning.ie/wp-content/uploads/2025/12/Mapping_and_building_capacity_in_education_for_sustainable_development_in_Trinity_College_Dublin1.pdf [Accessed 2026].

*is to create a learning environment that prompts learners' experiences and reflexive thought processes."*²⁷

- Transformative:
 - *"Transformative learning can best be defined by its aims and principles, rather than by any concrete teaching or learning strategy. It aims at empowering learners to question and change the ways they see and think about the world in order to deepen their understanding of it (Slavich and Zimbardo, 2012; Mezirow, 2000). The educator is a facilitator who empowers and challenges learners to alter their worldviews. The related concept of transgressive learning (Lotz-Sisitka et al., 2015) goes one step further: It underlines that learning in ESD has to overcome the status quo and prepare the learner for disruptive thinking and the co-creation of new knowledge."*²⁸

As an intern on this project, the outline developed during my research with TCD, is one which shall be implemented in the ultimate creation of the toolkit. The toolkit will utilise these pedagogical approaches in teaching children through their mother tongue. The composition of the toolkit will allow it to be effectively adapted and utilised worldwide, enabling our youngest generation to strive for a more sustainable world in a manner accessible to them.

Challenges

One may expect challenges upon the completion and implementation of the toolkit. Primarily the technological advancements of the contemporary world must be considered. Artificial Intelligence AI tools have become capable of translating and adapting language resources. Yet indigenous languages are frequently known solely by community members,

²⁷Ibid

²⁸Forde, C., Rooney, P., Byrne, N., Shé, C., Mcavinia, C., Gallagher, J., Roche, C., Hodgers, J., **O'Hora, A.**, Urbaniuk, K. and Rees, I. (n.d.). *HEA Teaching and Learning Conference December 2025 Leading Change Together: Building the Future of Teaching and Learning in Higher Education Mapping and building capacity in education for sustainable development in Trinity College Dublin Find Out More*. [online] Available at: https://hub.teachingandlearning.ie/wp-content/uploads/2025/12/Mapping_and_building_capacity_in_education_for_sustainable_development_in_Trinity_College_Dublin1.pdf [Accessed 2026].

thus AI cannot be depended upon as a translation tool in this circumstance. The possibility of the adaptation of some resources through AI must be acknowledged as a potentially useful possibility. Despite this, the nature of indigenous languages means ultimately that the creation of a physical toolkit and learning resource created manually remains necessary.

A further challenge which must be considered, is the impactful implementation of the toolkit. It has been mentioned that in the world today there is no paucity of resources, instead the accessibility of these resources may be seen as somewhat insufficient. It is hoped that the thoughtful testing of the toolkit in native speaking environments, before final dissemination, will allow for it to be created in the most accessible manner possible.

The Future of the Project

Having examined the importance of learning through a person's native language, the necessity of an ESD toolkit has been consolidated. The toolkit shall continue to be developed in the coming year. The toolkit shall first be put in practice in an Irish language learning environment. Following this and potential modifications. It will be put into practice in the Benegal region of India. Examining regions of the world, where children are frequently educated through a language different from their native tongue, the Irish Gaeltacht and the Bengal region of India, where children are predominantly educated through the English language, may be considered similar in this sense. Neither Gaeilge (Irish) nor Bengali are official UN languages, and do not receive formal dissemination of educational material. Putting the toolkit into practice in both of these differing learning environments, will pave the way for final examination of the toolkit and its efficacy in native speaking regions. The culmination of this research, toolkit development and in-field application is to create a tested adaptable educational toolkit suitable for worldwide implementation.

Conclusions

The challenges of independently researching an independently chosen topic were not nonexistent. Learning to adapt to unexpected findings and differing outcomes to those expected, ultimately supported the research project. The topic of the research and potential toolkit, was a long held idea, which has evolved and changed over this period of research. The opportunity to develop the resources and test their applicability in practice next summer, is undeniably exhilarating.

The research effectively confirmed the hypothesis, it was discovered that learning through native languages indubitably enhances the educational outcomes. Following further research the necessity of creating an ESD toolkit and making it accessible to all those making up our youngest generation was clear. It must be hoped that this research and toolkit will, with effort, contribute in some small part to a more sustainable future for our earth and all those who call it home.

Signed by Dr. Cuisle Forde, Associate Professor in the Discipline of Physiotherapy

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