

Co-creating sustainable learning communities in a transdisciplinary course

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Abstract

Purpose – The specific purpose of this study is to co-create in partnership learning experiences that are responsive to the needs of local communities by unearthing voices of lived experiences in communities, and uniting them with academic practices of research, teaching and learning. Co-formulating a new transdisciplinary micro-credential with a novel and blended pedagogical approach, using rural digital hubs in the connected hubs network to bring the university to local communities. Micro-credentials are small, accredited courses designed to meet the demands of learners, enterprise and organisations, created by Irish Universities Association partner universities in consultation with enterprise and in this case communities.

Design/methodology/approach – This paper was informed and developed from a transdisciplinary, co-creation and participatory approach. It emphasises the collaborative development of knowledge across disciplines, and stepped into societal boundaries with key principles on the inclusion of the voices of rural communities in the west of Ireland.

Findings – This paper charts the development of this novel partnership work, exploring a critical, digital pedagogy of “problem-posing education” in which learner and teacher hierarchical relationships are replaced by individual and collective learning, nurturing pedagogies of connection, both within and outwith the University.

Research limitations/implications – This conceptual paper starts a conversation on a novel use of technology in a community learning setting using a blended approach that incorporates live in place and live online modes of participation in learning (Beetham *et al.*, 2024). Using sense of community theory (McMillan and Chavis, 1996) to bring increased understanding of equitable interaction and co-creation practices in a designing a community led co-created course.

Practical implications – The authors explore the meaning of belonging and sustainability and the practical challenges of bringing the university to the community using technology available in rural hubs, the group approach helps to overcome the digital divide and supports knowledge exchange and relationship building.

Social implications – The approach values the lived experience of people in communities, supporting knowledge exchange that is equitable, together the authors aim to create shared value through respectful interaction.

Originality/value – This exploratory project brings together a diverse group of people with a common purpose, that of sharing knowledge to support communities to thrive sustainably. Using a novel blended pedagogy featuring rural digital hubs and community as a group participation to co-create a course.

Keywords Co-creation, Place-based pedagogies, Blended learning, Community and landscape, Sense of community, Climate justice

Paper type Conceptual paper



Glossary of acronyms

H5P = HTML5 software plugin;
HEIs = Higher education institutes;
IUA = Irish universities association;
ESD = Education for sustainable development;
STEM = Science engineering technology maths;
SoC = Sense of community;
COI = Community of inquiry;
CELT = Centre for excellence in learning and teaching; and
CUSP = Community and university sustainability partnership.

Introduction

This paper emerged from a one-day conference with the University of Galway, Ireland in November 2023 entitled “What should Higher Education Institutions do about the Planetary Crisis?” (CJUJ, 2024). At this conference, community partners in the Mid-West region identified the need for better engagement between communities and higher education institutes (HEIs) more generally, and specifically with regard to the impact of the climate and ecological emergency.

In the spirit of the approach of a unique partnership, this paper critically reflects on how HEIs engage with communities, accepting that the many problems facing us today cannot be solved by doing things in isolation within university boundaries. This collaboration is a community led, multi-disciplinary group of lecturers including lecturers in sustainability/ education for sustainable development, environmental science, sustainability and strategy and environmental humanities, with an engagement professional, rural development organisation leads and community members. We have been working together following the 2023 event mentioned above to refine our joint understanding of community sustainability, and find ways in which universities and communities can become a nexus to contribute to solutions that are not often easily accessed individually.

We define community as concerned with place, equitable for all positionalities, based on reciprocal relationships as praxis (Shannon *et al.*, 2021). Our community partners propose that rural communities are most impacted by the changes needed to address the climate emergency and additional sustainable development challenges, yet they also hold vital capacities for innovation, resilience and leadership when supported by inclusive and collaborative processes. To address this challenge, we are co-creating a knowledge sharing network and trial a community engagement process using the connected hubs network for sustainable community participation to cocreate a new transdisciplinary micro-credential. The foundational theories of transdisciplinarity (e.g. Nicolescu, 2008) look towards going beyond disciplines, aiming to create new frameworks, concepts or knowledge that are not owned by any single field. Specifically in higher education and pedagogy (e.g. Gibbs, 2017), work on “disciplinary decadence” (Gordan, 2006) pays attention to the openness of ideas and purposes on which disciplines were born and the quest for a genuine postcolonial language in working together, to “common our knowledge” (Clavin *et al.*, 2025: 1) in coming together to work with and for communities. The approach taken supports decolonising processes that ask – whose voices are not heard and whose lived experiences are not presented in the disciplines we study? Walter Mignolo developed the concept of pluriversity (or the pluriverse) and the application of this concept to knowledge production, advocating for the recognition of diverse, non-Western and indigenous ways of knowing, rather than relying solely on the Western “university” canon.

The intended initial audience for the short course is communities therefore working with the advice of the Adult Education Department within the University, a micro-credential is an ideal starting point. In time, this short course could become integrated into other development courses for adult learners and also integrate with community based learning for students on another course. We seek to illustrate how digital and place-based infrastructures can bridge distances, scale participation and foster pedagogies of genuine connection. Knowledge produced in the West has been problematically universalised and recognised as the only legitimate form of knowledge (Moncrieffe, 2004). This innovative, co-creative approach to network building and course design orientates the university as both a knowledge partner and a learning participant, as well as a steward, embedding higher education in the fabric of community life.

Despite growing policy commitments, there remains a significant gap in how communities meaningfully engage with pedagogical approaches to education for sustainable development (ESD) (UNESCO, 2020; Leal Filho *et al.*, 2022). ESD is a learning approach to prime people around the world to manage and find solutions for focussing on planetary and societal health (UNESCO, 2015). ESD is a growing area of interest, in the past it has often been siloed in science engineering technology maths (STEM) education, and is becoming increasingly visible in business education, but community education offerings by universities in this space are still rare. The value of bringing real life community organisations into the classroom to provide meaningful opportunities for education (Billimoria, 1998) has long been recognised, and yet there remains room for innovation in the role of technology to bring education to communities.

University of Galway is ranked as number 1 in Ireland for sustainable development and sustainability is a key value that aims to be integrated at all levels of the organisation (University of Galway, 2025). Implementing and practising the University's "learn, live, lead" model of knowledge sharing with our wider communities is reflected in the University Mission Statement "The University of Galway is for the Public Good" and our co-created Sustainable Communities course acknowledges the importance of sharing knowledge and respecting the lived experience of our communities. ESD and embedding the sustainable development goals (SDGs) in all activities has a strong focus on learner agency, which may be defined as the ability to recognise what one values and has reason to value (Sen, 1999). In this paper, reflecting the importance of shared value we take a Sense of Community approach (McMillan and Chavis, 1986) to build a learning community that highlights the importance of creating the environment to support agency and a shared commitment to support a sense of belonging for all participants, particularly in sustainability learning contexts (Thomas *et al.*, 2020).

Considering the worsening global crises and a heightened expectation for communities to step up to the challenge, universities are orienting their efforts to respond more effectively and appropriately to the climate and ecological emergencies. *The public should own research – be part of it and be able to impact it*, at the 2023 conference community leaders noted the heightened expectation for communities to step up to the challenge and identified many issues and proposed potential solutions. Highlighting the disconnect between HEIs and members of the community one community activist described being unable to reach individuals with scholarly expertise to contribute to an emerging campaign against new fossil fuel exploration in their local community (CJUU, 2024). Overall outcomes from the event called for a public sustainability course to be co-created with communities, which would have longer-term impacts, specifically creating ongoing partnerships working with communities for teaching, learning and socially-engaged research. In response this co-created course is novel in that it responds to a timely and specific call directly from communities to partner with university

staff across disciplines to primarily respond to the climate and biodiversity emergencies while also addressing the challenges associated with other inter-linked crises – geopolitical instability, economic uncertainties, etc. the polycrisis. How universities should and can respond to such polycrises is the focus of much ongoing academic work (e.g. [Stevens, 2024](#)), which also has implications for curriculum, course content, especially in developing live and authentic, active, place based learning opportunities for and with communities. Co-creating this course also supports the need to nurture a space for learners of all backgrounds to feel safe and comfortable yet appropriately challenged to collectively work together to find new solutions where appropriate. This active learning approach encourages ([Ishiyama, 2013](#)) participation and engagement; used with an inquiry-based approach involving critical exploration and problem-solving investigation, has been shown to be successful in many settings ([Justice et al., 2009](#)).

The depth and breadth of sustainability knowledge within the university was identified when working on an SDG mapping project at the University of Galway in 2024. It was recognised that no similar course exists in Ireland and that the appropriate sustainability knowledge exists in the university in discrete ways, e.g. social enterprise, science-community-policy interface, place-based policy approaches; co-creation skills; product life cycle, sustainable tourism and more that together contribute to partnership for the SDGs. The course will be co-designed in partnership with community leaders, informed by their community needs and further developed (in place) with communities, then refined to culminate in a co-created blended micro-credential for other communities across Ireland. In addition to action-based and inquiry-based learning, the process builds on a variety of pedagogical approaches. These include the employment of place-based pedagogies to acknowledge, capture and enhance a sense of place, belonging and identity, engagement with local communities in designing sustainable structures and policies that align with their eco-social values and concerns. Place-based pedagogies and learning in place enhance pedagogies and social modes of connection ([Dillon, 2008](#)) and offer a mechanism for harnessing a collective understanding and support within communities and between communities and HEIs.

Approach to design

Drawing on the theory of sense of community (SoC) ([McMillan and Chavis, 1986](#)), this co-creational approach to course design with community partners is built on shared understanding and a shared conceptualisation of value. SoC supports a community of inquiry (COI) learning approach for effective “presence” and engagement, acting as a meta enquiry framework to develop a learning community in the “classroom” for a learning community in practice, in the landscape, in the west and mid-west region of Ireland. Across a review of the literature on COI, SoC is repeatedly referred to as a highly desirable outcome, associated with perceived learning, based on a common purpose and inquiry, aligning with the three stages of social inquiry ([Brown, 2001](#)), also suggesting that where SoC is established there is less need for social reinforcement ([Garrison and Arbaugh, 2007](#)). It is beyond the scope of this paper to explore further, yet it is suggested that SoC theory has much to contribute to online teaching through the four subconstructs of the foundational community psychology theory of SoC: *Sense of belonging, Shared emotional connection, Influence and needs fulfilment* ([McMillan and Chavis, 1986](#)). Characteristic of a COI is the development of a deep and meaningful collaborative learning experience that is guided by the Practical Inquiry Model where there is an ‘iterative and reciprocal relationship between the personal and shared worlds’ ([Garrison et al., 1999](#), p.98). Reflecting SoC theory which explores the

cognitive component of social capital and the individual's perception of being part of a rewarding community (McMillan and Chavis, 1986).

Early work on distance learning examined how to decrease psychological distance by building community, recognising the importance of spirit, trust, interaction and commonality of learning expectations and goals (Rovai, 2002). More recently the foundational components of online pedagogy are described as beginning with building relationships and community before exploring active learning, learner agency, master learning and the personalisation of the learning process, recognising the importance of social presence for learner satisfaction (Archambault *et al.*, 2022). The application of the COI framework for course design (Garrison, 2017) incorporates three presences: teaching, social and cognitive presence, designed to help increase engagement and build a SoC (Fiock, 2020).

Social presence described in COI describes actions such as encouraging social interaction and social learning online to meet other learners and share professional and personal experiences (Carroll *et al.*, 2025). This social presence closely aligns with *Shared emotional connection* the subdimension of SoC, that is most closely associated with feelings of SoC. The importance of creating a space for social interactivity is key, in an online setting with asynchronous interactions it is particularly important to provide a safe space for participation. Highlighting the importance of the time spent at the beginning of an online course discussing identity sharing, the literature of SoC recognises the importance of identity sharing online and links identity sharing with *Sense of belonging* (Blanchard and Markus, 2004) and the role of SoC for formation of social trust and for participation (Anderson, 2010) in traditional settings.

From its roots in constructivism the cognitive presence of COI describes the importance of having learners reflect on experiences and learning individually and as a group often through the interactive process of frequent assessment and feedback. Engaging learners in reflective activities can support in complex topics and sustainability problems that are challenging to articulate, difficult to address (Phelps, 2005) and require intersectional and multimodal thinking. Identifying the importance of scaffolding learning, moving from lower order to higher order thinking is also essential in terms of maximising on learner engagement and success. The Practical Inquiry Model in which COI is situated explores the knowledge building journey and involves four phases (Sadaf *et al.*, 2021) (Table 1). *Influence* as a subdimension of SoC, can be observed in the process of the learner constructing knowledge by participating, where they could be both influenced by other learners and influence others.

Teaching presence brings together engagement with the content and social interaction that is focused on meeting learning outcomes, this is achieved through design and management of cognitive and social processes (Archambault *et al.*, 2022). Teaching presence considers online design factors, sometimes described as usability factors such as ease of use and clarity of user journey as well as elements of expectation and interaction management (Preece, 2001). The Needs fulfilment elements of SoC would appear to correspond well with teaching presence as teaching presence brings the other elements together to create a fulfilling learner experience and for a SoC to develop it must be based on shared value. This shared value SoC approach of co-creational workshops reflects the increased popularity of the terms co-creation and co-production, which are often used interchangeably. The methodological approach unpacks the use of these terms in the context of a public sustainability course, linking the University and the wider region.

The blended approach to the co-creation of the course is enabled by inviting participants to attend their rural hub in person as a community together to join in the course online. These rural digital hubs can be described as local physical spaces in rural areas that offer a place to work remotely and range in size from small spaces attached to community facilities to larger

Table 1. Four phases of the practical inquiry model and indicative content

Phase	Learner actions
Phase 1. Beginning with triggering or recognising a problem	Learners complete a pre-participation survey. The three themes are introduced at an in person session with each community in their own locality to assist community groups explore their local landscapes to begin to identify their sustainability challenges
Phase 2. Starting the inquiry process, followed by exploration of the problem and seeking the relevant information, often also consisting of sharing and engaging in explanations	Shared readings, lectures and workshops on landscapes of belonging, sustainable economic communities and collective leadership start the knowledge exchange process. Feedback sessions at the end of each workshop support this
Phase 3 Involves integration where the learner constructs meaning from several sources coming up with various possible solutions	Learners share reflections after each lecture and workshop in formats including text, audio or art
Phase 4 Finally, resolution is where the learner applies or defends these solutions	Community groups present their ideas at an in person event. Groups workshop and discuss information shared

enterprise or digital hubs (O'Brien *et al.*, 2025). There is significant alignment between institutional learning objectives and the place-based capacities of the national hub network (connected hub network) (Figure 1) as this infrastructure enables the online community aspect of the course. Connected hubs is Ireland's national platform for publicly funded enterprise, digital and community hubs, encompassing more than 390 locations and operating under the remit of the Western Development Commission. Initially developed to support regional economic growth and enable remote and hybrid work, the network has matured into a multifunctional public infrastructure, increasingly positioned to support inclusive innovation, digital transition, sustainability and community-based learning. Such hybrid infrastructures are increasingly recognised as civic intermediaries for sustainability and community learning (Farnell *et al.*, 2021). The connected hubs national hub network strategy (2024–2027) elaborates on a vision of hubs as enablers of policy delivery in areas such as sustainability, rural regeneration and digital transformation. Policies such as Our Rural Future (2021) and Town Centre First (2022) frame these hubs as instruments for reimagining rural and small-town vitality, where education and engagement are central components. This places hubs in an important intermediary role, capable of supporting HEIs and community collaboration beyond traditional outreach models.

Belonging in education is aligned with the concept of inclusion and has been identified as a core theme in academic spaces, such as the European Access Network conference (2025). However, the concept of belonging, sustainability and local communities in the west of Ireland specifically is not as well developed or established yet.

Co-creation has become increasingly practiced in recent years as a concept, method and policy tool (Harvath and Carpenter, 2020; Steinhaus *et al.*, 2018) and the associated co-production of knowledge is seen as an approach for the development of inclusive policy and practice. Co-creation has been increasingly applied to the development of policy for the delivery of public goods linked to health, education, community services and planning (e.g. Alford, 2009; Donetto *et al.*, 2015). It has the potential to remove the boundaries between experts and citizens and to reconfigure participatory placemaking (Ermacora and Bullivant, 2016) as a means of achieving more just outcomes.

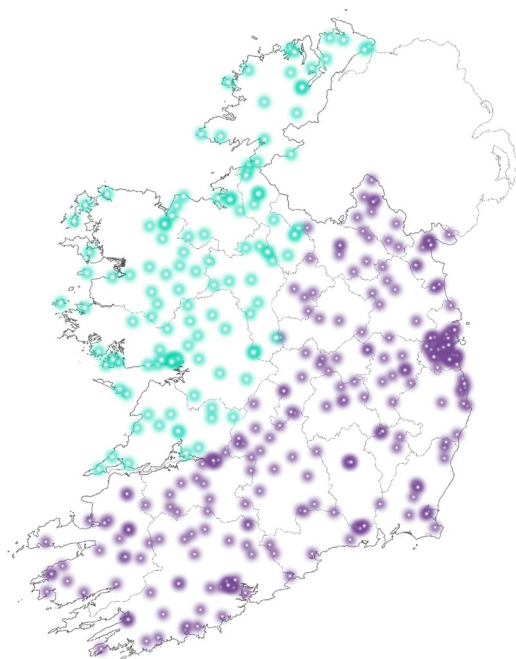


Figure 1. Map of Ireland with location of hubs in the connected hubs network. Green denotes hubs in the western region
Source(s): Connected Hubs

Co-production of policy is relatively well established within the field of health and social care but is beginning to be explored within the built environment professions and place-based policy more broadly (e.g. [Lees, 2023](#)). Recent research in left-behind places in the UK and Ireland has begun to redirect the role of local and regional policy towards empowering and resourcing local change-makers ([Moore-Cherry et al., 2025](#); [Tomaney et al., 2023](#)). Their local knowledge, lived experience, attachments, pride and hope in place make them key agents of local and regional economic development. These shifts have profound implications for both teaching and research in universities, particularly raising wider questions about the purpose and impact of research, the training of professionals; and universities' relationships with both immediate local communities and the wider social and political communities which secure and shape their roles in the region and nationally ([Lees, 2023](#); [Tomaney et al., 2023](#)).

Methodological approach

A multi-disciplinary team from the university was formed from disciplines including the engagement office, environmental science, geography, Irish studies, marketing, management and information systems. Initial meetings between community representatives and university staff were in person and then online with community representatives from umbrella community development organisations Mayo North East and Galway Rural Development who act as conduits to local groups and are leading the call for participation of local communities (Step 1, [Figure 2](#)). The university staff prepare focused workshops to bring to

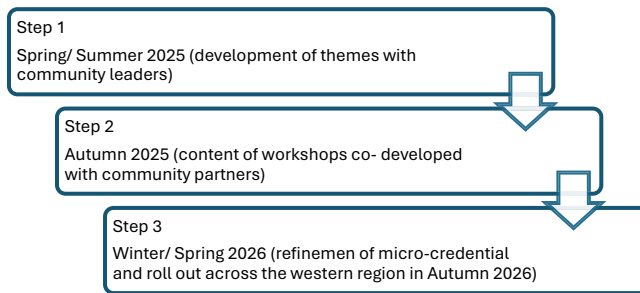


Figure 2. Timeline of the co-creative course development process

communities to co-create the course (Step 2, [Figure 2](#)). The co-creation workshops are delivered in a blended format, with the online element taking place in rural digital hubs. The wider literature agrees that despite the prevalence of technology significant challenges in the digital divide with remain, especially in relation to access, digital skills and educational outcomes ([Tang et al., 2025](#)). Lower household income, older age groups and rural locations were identified as important elements that negatively impact the digital divide on educational outcomes ([Afzal et al., 2023](#)). In response, we conceptualise the physical spaces in rural hubs and the people who work in these hubs as potential technology resource centres. Reflecting the original intention of this teaching approach of being inclusive of all regardless of access to broadband or technology or confidence with the use of technology.

The use of rural digital hubs for workshops in the community enable us to bring the university to each locality. Using rural hubs in both the co-creation process and the future roll-out of the final co-created course means that there is the potential to scale to a much greater geographical spread, than would have been possible if researchers or participants continually have to travel to meet in person. It provides a space for participants in their community to come together to meet face-to-face to enjoy a blended (e.g. [Kerres and Witt, 2003](#)) experience of the online workshops and supports the sustainability ethos of the course.

In the final step, themes and topics will be identified for inclusion in the micro-credential, led by and presented by the community groups in the University on a final co-creation event (Step 3, [Figure 2](#)). The approach gives all involved the opportunity to test the boundaries of this novel pedagogy and gain feedback on what work best. Conducting initial face to face meetings help develop feelings of sense of community and trust between participants. To overcome potential barriers in digital literacy, the face to face interactions made it possible to assess confidence with technology and requirements for any alternative or preferred format for the community participants. hubs Balancing the need for simplicity and clarity in the use of technology and enabling supportive interaction time was a key requirement of the approach.

The methodological approach values the lived experience of communities and emphasises knowledge sharing that respects community voice. We explore ways in which knowledge exchange can foster novel relationships and create new opportunities for co-creation in research and education.

Themes for engagement

The three main themes agreed together with community partners are: landscapes of belonging, collective leadership and sustainable economic communities. In this context

collective leadership is essential, emphasising shared responsibility, collaboration and inclusive decision-making. By valuing diverse voices and fostering trust, communities can address challenges collaboratively, ensuring that development reflects local needs and values. Such leadership not only strengthens social cohesion but also enhances the community's capacity to adapt, innovate and sustain its cultural and social fabric.

Landscapes of belonging

The physical environment in which we live traditionally underpins the cultural identity, natural heritage, economic livelihoods and social well-being in rural communities. Our landscapes not only support vital economic sectors, agriculture, forestry, tourism and fisheries that frequently form the bedrock of Irish local economies, but they are a shared resource that underpins local culture as well as physical, intellectual and emotional wellbeing of individuals and communities. However, this intimate connection is increasingly under threat as noted by [Robinson \(2019\)](#), [Nairn \(2023, 2022, 2020\)](#), [Cronin \(2020, 2021\)](#) and [Dochartaigh \(2021\)](#) amongst others: landscape homogenisation, demographic and social decline, loss of local heritage and history along with ecological degradation is undermining the relational values and place-based attachments that have long-anchored the identity of rural communities. This shift has weakened the connection communities have to nature and their local area, making them feel incapable of influencing their environment and culturally powerless to enact change ([Cronin, 2023](#)). As a result, many feel emotionally and socially disconnected from nature and the very communities in which they live. [Lekic et al. \(2018: P175\)](#) demonstrates the complexity of landscape citing [Claval \(2005\)](#) "For rural inhabitants, 'landscapes appeared both as an expression of the farming systems and as the material basis of social, cultural, and political units' and the importance of place attachment [Palang et al. \(2006\)](#) "The significance of rural landscape is reflected in the achievement of place attachment, strengthening the identity of a community, and improving its resilience". This highlights how landscapes have long been the foundation of community identity, local economies and socio-cultural bonds.

The landscape plays a key role in shaping rural life and culture, with the Irish language historically serving as a vital lens through which the human connection to the natural world is understood, described and valued. [Fielding \(2021\)](#) described the importance of protecting multilingual identities which can support learners intercultural engagement and understanding, mirroring the update to the subdimension of membership in the theory of SoC to sense of belonging to be more inclusive ([McMillan, 1996](#)). This highlights the importance of language (s) to intercultural understanding and feelings of belonging. The Irish language encapsulates a unique way of perceiving and interacting with the landscape, preserving place-based knowledge and cultural identity that is deeply embedded in rural environments. The loss of the language thus risks severing vital connections between people and their natural surroundings ([Ó Giollagáin and Mac Donnacha, 2016](#)) and it is also known that regions that suffer language loss are also deeply associated to areas of biodiversity loss. The rich vocabulary and placenames in Irish contain a culturally-specific repository of eco-social knowledge and also signify a relational geography and deep emotional connection to the environment. However, when ecological diversity and people's emotional ties to the land decline, along with the decline of the Irish language, it leads to a profound sense of societal disconnection as noted by [Cronin \(2019\)](#). The slow erosion and "slow violence" ([Nixon, 2013](#)) of environmental threats are rooted in systemic injustices and structural inequalities. Global damage such as climate change and biodiversity loss is normalised over time. These globally problems land in places, and state authorities strive to solve these interconnected global problems through policy, regulation and practice. [Tuan \(1975\)](#) asserts that a sense of

place contributes to a sense of who we are. The Irish language is deeply rooted in the physical landscape of Ireland, often acting as a carrier of knowledge, history and mythology. As an ecological language/*An Gaeilge mar theanga éiceolaíoch* – it does not put the individual person at the centre; it connects things together – it is holistic and opens up a channel into people and place and sustainable ways of being and knowing (CCAP, 2023). To maintain strong, vibrant rural communities, it is crucial to preserve not only the variety of the landscape but also explore the role of language in the meaningful relationships people have with both the land and their cultural heritage.

Collective leadership

The importance of developing collective leadership is well recognised as important for fostering sustainable development and community resilience, as demonstrated in development strategies such as *Our Rural Future*. Collective leadership in rural communities emphasises shared responsibility, collaboration and inclusive decision-making among local residents and social partners (Jørgensen, *et al.*, 2020). This approach works best in the setting (i.e. community) in which the activities will take place to allow for reflection on standard practices, while raising challenging questions (Raelin, 2017). Unlike traditional top-down approaches, collective leadership fosters a sense of ownership and empowerment by valuing diverse voices and skills within the community. To reignite and foster this leadership, it is essential to build trust, encourage open communication and create supportive spaces where all members feel their contributions are valued.

At the heart of collective leadership is capacity-building through education and skill development. Using shared lived experience and empirical evidence to support community members to engage confidently in decision-making processes. This form of leadership builds on social capital and trust, which are well-documented drivers of community resilience and adaptive capacity in rural contexts (Emery and Flora, 2006). In addition, nurturing strong social networks and partnerships with external organisations can provide necessary resources and expertise. This approach is especially important in rural areas, where resources may be limited but social bonds may be strong. By finding the appropriate processes and guidelines to support working together, community members can identify common goals, pool resources and implement sustainable development initiatives that reflect local needs and values. Collective leadership not only strengthens social cohesion but also enhances the community's capacity to adapt, innovate and thrive in the face of economic and environmental challenges. In this way, it plays a critical role in driving holistic and resilient rural community development. Rural digital hubs can provide a neutral space for diverse members of communities to meet, to discover a joint understanding of collective leadership. They offer a ready-made national infrastructure to anchor academic-community partnerships, offering physical space, digital tools and convening power and networks of trust and practical knowledge. In this sense, they could be described as a natural extension point for universities seeking to embed their teaching and research within community priorities.

Sustainable economic communities

Increasing urbanisation means that most of the world's greenhouse gas emissions and energy consumption are created in urban areas (Lynn *et al.*, 2024). Balancing that out, sustainable economic rural communities are vital for maintaining vibrant, resilient regions that support both current and future generations. Reflecting the cultural and spiritual significance of place and landscape, communities need to remain capable of providing employment, preserving cultural heritage, protecting the natural environment and ensuring that rural areas remain

attractive and liveable (Ciampa *et al.*, 2025). However, many rural communities face challenges such as population decline, limited job opportunities and the erosion of traditional industries, therefore rural areas resilience capacity needs to be enhanced (Li *et al.*, 2019). Economic success is generally linked with large enterprises, to avail of various traditional educational pedagogies in HEIs, on the other hand smaller, rural or social enterprise has received much less attention. To achieve sustainable rural economies, a multi-faceted approach is needed—one that invests in local enterprise, encourages innovation, supports sustainable agriculture and land use and enhances infrastructure such as broadband and transport (Yin *et al.*, 2022).

When smaller enterprises start engaging on sustainability issues with low-risk activities, this can often lead to more radical innovation and improvements (Klewitz and Hansen, 2014). There has been a slow uptake in sustainability education in small enterprise, with a lack of local relevant agencies to tailor to their needs (Mitchell *et al.*, 2019). Community-led development, access to education and skills training and strong local governance are also essential. Importantly, strategies must be place-based and tailored to the unique assets, needs and identities of each rural area. By empowering communities to shape their own futures, we can create rural economies that are not only viable, but also socially and environmentally sustainable. Sustainable economies emerge when local enterprises are embedded in landscapes of belonging and guided by inclusive community leadership (OECD, 2020; Scoones, 2020;).

Government policy in Ireland through the National Remote Work Strategy has encouraged people to move and work in rural areas with relocation grants and tax incentives (Government of Ireland, 2021). That same policy supports the development of rural hubs reflecting the contention that these spaces can have an important role in supporting younger digital natives in an effort to counteract out migrations and extensive commuting patterns (Bosworth *et al.*, 2023). More recently qualitative research in rural hubs in Ireland has indicated that rural hubs can support the achievement of both work and social goals and under supportive conditions can contribute to both personal and wider community value (O'Brien *et al.*, 2025).

Together the three themes attempt to explore what has been, what is and what could be, through the concept of landscapes of belonging that underpins the profound connection between rural communities and their natural surroundings. The symbiotic relationship between landscape of belonging, education and collective leadership forms the bedrock of resilient rural communities. Preserving the natural environment, nurturing cultural identities and fostering inclusive educational and leadership practices are crucial steps towards ensuring the economic vitality and sustainability of rural areas. Education and co-created learning act as the cross-cutting enabler, ensuring that each dimension reinforces the others in practice.

Modes of participation in learning

Reflecting the ethos of this project at each of the steps (Figure 2), the COI model aims to value the experience of all equally and give learners an opportunity to learn both from course instructors and from their peers in an equitable social presence. The approach to the teaching presence aims to provide an easy-to-use positive learning space that accepts that each person is beginning their journey from a different place, meaning that it is intended that the accessibility of class material and response expectations will be broad and accommodating for all, regardless of level of digital literacy. The cognitive presence for the course is developed by inviting frequent self-reflective feedback in a format that suits each learner, with key group tasks for the final assignment.

Each of the four modes of participation in learning (Beetham *et al.*, 2024) are represented in this blended course (Figure 3). Extensive pre-planning is conducted with community partners to develop themes and processes before the first in person presentation which is (*Live in Place*) where faculty initially visit each community to explain the co-creation process and receive feedback on personal digital and local needs. At the end of the course communities, faculty and interested parties will meet together for community presentations. Before and after the live online sessions participants will have access to all videos and readings facilitating (*Async Online*) participation in learning, access supported by the course and hubs. The (*Live Online*) in hub sessions will enable communities join together online from their local hub and will help to bring the Higher Education Institution to the community and also help link communities to each other to share discussions and knowledge exchange.

Every effort is made to prepare for the workshops by carrying out a needs assessment with each person in the communities who intend to take part. They will be asked to complete a short questionnaire online or over the phone asking them about their digital experience, their understanding of sustainability and their expectations for the course. The results of this step will shape the initial in person meeting with each community group and the approach to knowledge sharing and participation in the next steps.

The approach will focus on making contact time as interactive as possible, Figure 4 before each workshop a video on the topic and some optional readings will be shared with participants from each community. During the online workshops in local rural digital hubs, communities will be invited to meet early for tea and conversation before joining the workshop online and receiving an introduction to the workshop task. When the task is completed, groups will rejoin the main group to discuss their experience and share their knowledge. After the workshops each person will be asked to add to their reflective diary, complete their part in the final contribution and will be invited to share any resources they feel are appropriate with the wider group. The outputs from these workshops, the reflective diary and final report/presentation from communities will contribute to the micro-credential. The final meeting will give communities, community partners and HEI staff the opportunity to discuss topics of interest.

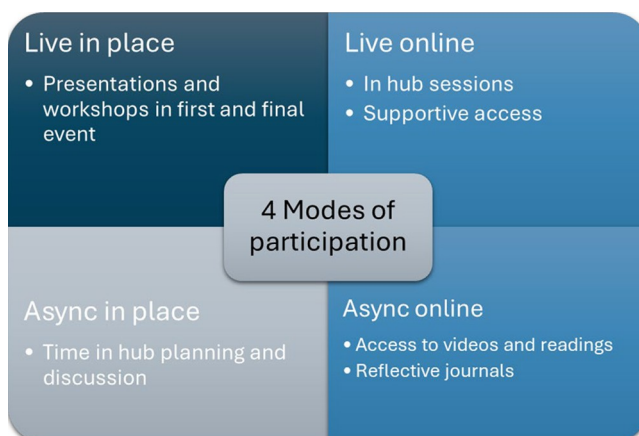


Figure 3. Modes of participation in learning

Source(s): Adapted from Beetham *et al.*, 2024

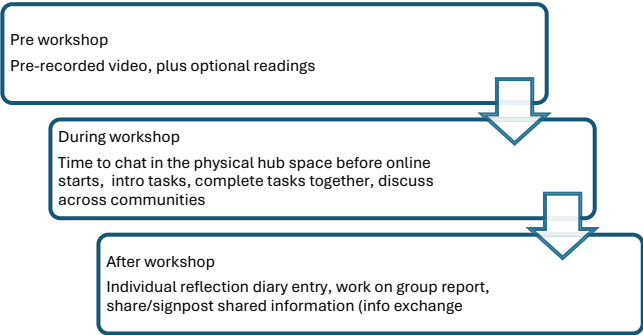


Figure 4. Workshop structure
Source(s): Author’s own work

Operationalising learning design

The planned learning design uses a plugin for existing publishing systems called H5P, this can be used to create, share and reuse HTML5 content and applications to create rich and interactive content such as presentations, games and quizzes. A flipped classroom design will be used to share an (interactive) video in advance with optional additional reading. It is anticipated that there will be a different lecturer each week and consistency will be maintained using a template (for faculty to create content) and regular online meeting times/links in hubs. In addition, each community group will have their own facilitator/mentor to support their work, with clear guidelines shared about expectations and where to go for assistance. Each week learners will be asked to write an individual reflection and together create the steps of their final assignment.

Risk assessment

The methodology for providing an online course to communities in hubs in the university context has not been tried before to our knowledge. There are a lot of areas where misunderstandings could occur, this is why expectation management is very important. The people who take part need to be open to trying out new things and have some familiarity with technology or some assistance on a personal level as well as course assistance. That said, every effort will be made to enable participation of “non-traditional” learners, including options for giving online reflective submissions as voice notes if that is appropriate for the learner at their own choice. With such a potential for diversity in participants care will be needed to set ground rules for equitable and respectful participation. Identifying ways that learners can support each other to share knowledge and learn will be very important. Carefully managed triggers and simple exercises that can contribute to the overall learning outcomes will be most important, our scaffolding needs to be appropriate for each of the different types of learners. The expertise of the teaching staff on the project should help too.

Quality assurance

Group work brings distinct challenges, to successfully co-create the course among a diverse group of people who bring their experiences and knowledge from across multiple disciplines, colleges and educational backgrounds will require meaningful effort to work successfully. Clear learning outcomes and rubrics that offer guidance and can be used in a

flexible manner to support the co-creation work. We aim to create an environment of trust by being responsive and communicating in ways that enable us to share knowledge and co-create together successfully. Reflecting guidelines for blended online and hybrid programmes (QQI, 2023) we set out our approach in Table 2 below, to work to the highest standards to bring transparency to the processes and equity of access to information for all involved.

Conclusion

This cocreational approach responds directly to community partners' call for deeper and more equitable engagement between rural communities and HEIs in the context of the climate and ecological emergency. What has emerged is not simply a course design, but a model of engagement that integrates three interdependent themes: landscapes of belonging, collective leadership and sustainable economic communities. Together, these themes provide a framework for re-imagining how HEIs and communities can co-create knowledge, strengthen resilience and embed sustainability in ways that respect cultural identity and place. The specific challenge identified by our community partners identifies a mismatch between universities, policymakers and communities in their understanding of community sustainability.

Communities are critical of the engagement by universities and of policy makers who tend to design with a one-size-fits-all approach without recognising the unique value of place. Our community partners propose that rural communities are most impacted by the changes needed to address the climate emergency and additional sustainable development challenges, yet they also hold vital knowledge, capacities for innovation, resilience and leadership when supported by inclusive and collaborative processes. Ultimately, rural communities identify the need for more interaction with the university focused on the development of a sustainable community mindset that includes skills for collective leadership and sustainable economic innovation that is respectful of local ecological, cultural

Table 2. Quality assurance guidelines to support co-creation

Strategy, management and implementation plans	Careful expectation management and very clear documentation, instructions and planning will be put in place especially in relation to leadership roles and responsibilities
Policies, regulations and administrative processes	All policies used will reflect the best policies standards and will be fit for purpose taking into account the part time nature of the course. Always supporting safe online participation
Finances, infrastructure and resources	Every effort will be made to support learner accessibility and participation online and in hubs. It is hoped to provide the course for 'free' or at very low cost to the participants
Staff training, professional development and institutional support	The use of templates and structures to make teacher participation as seamless as possible as well as support from the engagement office and the Ryan institute and also CELT* and CUSP** the sustainability office and adult learning as needed
Strategic collaborations and partnerships	The process is built on a creative commons concept with collaborations and partnerships and agreeing who has responsibility for each element
Approvals and validation	It will not be part of a formal qualification at this time. Instead it is oriented to provide practical support for communities on their sustainability journey and will be iterative to accommodate changing needs

Note(s): *Centre for excellence in learning and teaching **the community and university sustainability partnership

and social needs. The use of rural hubs for workshops in the community will enable us to bring the university to each locality and provide a location for the community to come together to meet face-to-face to enjoy a blended experience of the online workshops. This means that the model and associated workshops have the potential to scale to a much greater geographical spread, enhancing pedagogies of connection within the region.

This paper presents a model of how communities can meaningfully engage with pedagogical approaches to ESD. Looking forward, the co-created outputs, such as course design and network model we have developed demonstrates how HEIs can function as agents of sustainable futures: by cultivating collective leadership, facilitating belonging and advancing locally rooted yet globally relevant expressions of sustainable economic innovation. In doing so, universities can extend beyond outreach towards genuine partnership and stewardship, assuring that ESD is not only delivered to communities but co-created with them.

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