Enterprise Education and Planetary Sustainability – What can EE do? (Second Edition)

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Contents

1.Introduction

1.1 What's at stake?

We exist on a planet that is facing the immediate consequences and long-term implications of ecological overshoot; indeed, this diagnosis has been made again and again (Meadows et el, 1972[1]; Catton, 1982[2], Raworth, 2012[3], Herrington, 2020[4]; Fanning et al, 2022[5]).

Ecological overshoot occurs when human demands exceed the regenerative capacity of the natural system, in other words when humanity uses more of earth's resources than the planet can regenerate or absorb, including waste such as carbon dioxide from fossil fuels[6]. Ecological overshoot is making itself more visible through recurring extreme weather events, and also interacts with the depletion of natural resources and existing global and social inequalities to create misery and harm for half the world's population (IPCC, 2021, 2022[7]).

Changing any situation *requires changing the conversation.* That is, from the dialogic perspective underpinning this toolkit and research project, reality is constructed through conversations and interactions that people have every day (Bushe and Marshak, 2016a[8]). The dialogic perspective asserts that change happens by working with this reality. Furthermore, change can be catalysed by hosting conversations that foster new possibilities, altering the prevailing narratives that limit new thinking and working with the emergent properties of complex systems (Bushe and Marshak, 2016b[9]). This perspective also supports the idea that shifting from an unsustainable business as usual scenario will require aiming for social tipping points[10] where a transformation of societal priorities brings humanity back on the path of a stabilized world (Herrington, 2020).

In guidance for Higher Education providers, Enterprise and Entrepreneurship Education tends to be discussed in relationship to improving students' employability and career prospects and encouraging start-up, scale up and growth (QAA, 2018). Whilst green entrepreneurship and education for sustainable development are mentioned in the QAA guidance, given what's at stake – steep social decline/collapse, and a liveable planet – these dimensions require focused attention from enterprise educators. Higher Education has a key role in nurturing business practice and values and developing the next generation of entrepreneurs and business leaders to contribute to a shift towards a stabilized world. This toolkit illustrates a practical intervention in regard to how enterprise educators might re-orient their practice in light of this. It describes a process through which educators can influence the conversations they have, gain inspiration for and legitimise change, and make new contacts and partners for developments. By undertaking such as process, enterprise educators can

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[1] Meadows et al (1972), The limits to growth: A report for the Club of Rome's project on the predicament of mankind. Available at: https://www.donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf

[2] Catton (1982), Overshoot: The ecological basis of revolutionary change. Available at: https://www.press.uillinois.edu/books/?id=p009884

[3] Raworth (2012), A Safe and Just Space for Humanity. Available at: https://www.oxfam.org/en/research/safe-and-just-space-humanity

[4] Herrington (2020), Updates to Limits to Growth. Available at: https://mahb.stanford.edu/wp-content/uploads/2021/07/yale-publication-1.pdf?ref=tippingpoint-podcast.com

[5] Fanning et al (2022), The social shortfall and ecological overshoot of nations. Available at: https://www.nature.com/articles/s41893-021-00799-z

[6] For a lay intro see: https://www.overshootday.org/newsroom/media-backgrounder/

[7] See Intergovernmental Panel on Climate Change: https://www.ipcc.ch/report/ar6/wg1/chapter/summary-for-policymakers/ and https://www.ipcc.ch/report/ar6/wg2/chapter/summary-for-policymakers/

[8] Bushe and Marshak (2016), The dialogic mindset: Leading emergent change in a complex world. Available at: https://www.academia.edu/29592117/THE_DIALOGIC_MINDSET_LEADING_EMERGENT_CHANGE_IN_A_COMPLEX_WORLD

[9] Bushe and Marshak (2016b), The Dialogic Organization Development Approach to Transformation and Change. Available at: http://www.gervasebushe.ca/practicing.pdf

[10] See: Professor Tim Lenton, Global Systems Institute: https://www.exeter.ac.uk/research/tippingpoints/

be part of, and help accelerate, a movement towards positive social tipping points. In the following section the background to this toolkit is introduced.

1.2 From planetary sustainability to enterprise education

This toolkit is an output of a research project entitled 'Enterprise Education and Planetary Sustainability: What can EE do?'. The research project involved creating a *dialogic process* to influence Enterprise Education practice towards contributing to a stabilized earth, from whatever starting point or context one is at. This tool kit provides a theoretical underpinning for this approach, practical resources and workshop activities which were piloted at two universities – the University of Huddersfield and the University of Liverpool. The immediate and emerging results show that promoting, recruiting for, delivering and following up from a workshop about changing practice in light of sustainability challenges created new connections, developments in practice and curricula and new possibilities for programming.

This project was not just supported, but rather it was inspired by Enterprise Educators UK (EEUK) and its request for projects that explored *the relationship between EE and planetary sustainability*. The use of this word - planetary - alongside sustainability, draws attention to the enormity of the predicament that is being reckoned with. It inspired us to ask – what might an enterprise educator or an entrepreneurship scholar do if they are not currently involved in sustainability-oriented practice? How might they re-orient themselves and their work? Before we come to address this practical question, this introduction briefly traces a line from the planetary scale sustainability predicament signposted by EEUK and how this is re-shaping models of sustainability thinking, through to policy and then to our work as enterprise educators.

With regards to enterprise and its relationship to planetary sustainability we signpost the nine planetary boundaries[11] articulated by the Stockholm Resilience Centre which identify the interconnected earth processes which regulate the stability of the earth system. Some of these planetary boundaries will feel familiar as concepts. Climate change is one such boundary. Climate change is being driven by human activity that alters the composition of the global atmosphere[12]. Put simply, greenhouse gases (emitted through human activity), stay in the atmosphere surrounding the planet and trap heat, like a blanket, causing the temperature to rise over time[13]. The heating climate is already affecting weather and climate extremes in every region across the globe. At the time of writing this toolkit the news was reporting extreme weather such as flash floods in Spain, Italy, Saudi Arabia, Florida, England; extreme heat in Texas, China and Algeria and forest fires in Canada, Rhodes, Corfu, Palermo. Drought and water scarcity already affects half of the world's population and current use of water to make food and products will influence global water scarcity by 2040[14]. The planetary boundaries show that the safe operating space for humans is diminished by human activity. The other planetary boundaries are stratospheric ozone depletion, loss of biosphere integrity, chemical pollution/release of novel entities, ocean acidification, freshwater and land system change[15]. Six of these nine boundaries have already been transgressed[16] and scientists are making increasingly

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[11] Stockholm Resilience Centre, Planetary Boundaries/Key Publications: https://www.stockholmresilience.org/research/planetary-boundaries.html

[12] Intergovernmental Panel on Climate Change - The Physical Science Basis. Available at: https://www.ipcc.ch/report/ar6/wg1/

[13] NASA – What is the Greenhouse effect? Available at: https://climate.nasa.gov/faq/19/what-is-the-greenhouse-effect/

[14] See: There will be no water in 2040 if we keep doing what we're doing today. Available at: When will the world run out of water? (theworldcounts.com)

[15] Stockholm Resilience Centre, The nine planetary boundaries: https://www.stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html

[16] See Masters (2022), for a creative introduction to this. Available at: https://yaleclimateconnections.org/2022/07/recklessness-defined-breaking-6-of-9-planetary-boundaries-of-safety/

desperate pleas that individuals, institutions and society take action[17]. A major concern is that interacting earth systems (such as the Amazon rain forest, ice sheets, sea ice, perma-frost), reach a global cascade of tipping points where irreversible and potentially abrupt climate change leads to a less habitable, or potentially 'hothouse' state (Lenton et al, 2019[18]). Lenton and colleagues conclude: "The stability and resilience of our planet is in peril. International action – not just words – must reflect this."

That earth's processes and systems have been degenerated to such an extent that it threatens a liveable planet *is* re-shaping globally promoted models of thought which underpin human activity, such as the United Nations Sustainable Development Goals (SDGs). The SDGs have been re-imagined in light of the planetary *un*sustainability of current consumption and development patterns. Instead of the SDGs being presented as having equal weighting (represented in a circle or in a table), the goals on which humanity depends – life on land, life below water, clean water and sanitation, climate actions – are visualised as the foundation for all other goals (represented as the foundational tier of a wedding cake), followed by a social tier, and finally a smaller, economic tier at the top[19].
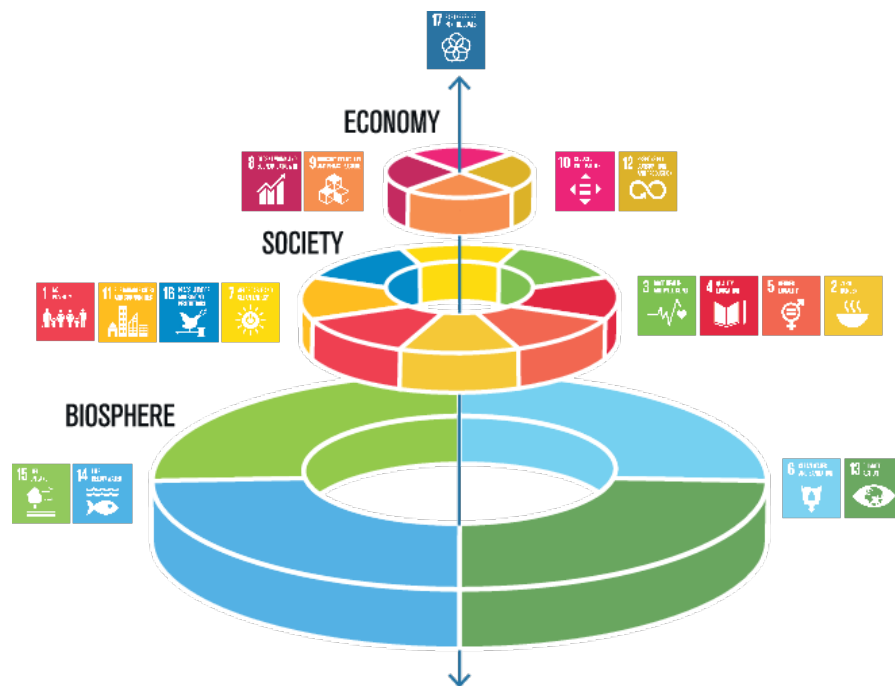
Credit: Azote for Stockholm Resilience Centre, Stockholm University CC BY-ND 3.0.

Furthermore, in the UK, the government has explained the (human-activity related) causes and impacts of climate change[20], and released various reports and reviews that demand action. The Stern Review (2007[21]), looked at the economics of climate change and concluded it was un-economic to

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[17] United Nations University, A True Paradise – Where we are heading. Available at: https://www.youtube.com/watch?v=o_FtS_HNbkc

[18] Lenton et al (2019), Climate Tipping Points – Too risky to bet against. Available at: https://www.nature.com/articles/d41586-019-03595-0

[19] Stockholm Resilience Centre , SDGs Wedding Cake: https://www.stockholmresilience.org/research/research-news/2016-06-14-the-sdgs-wedding-cake.html

[20] Department for Energy Security and Net Zero (2023). Climate Change Explained. Available at: https://www.gov.uk/guidance/climate-change-explained

[21] (Stern, 2007), Stern Review on The Economics of Climate Change. Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20100407172811/https://www.hm-treasury.gov.uk/stern_review_report.htm

delay action. The UK Government also declared a climate emergency (Hansard, 2019[22]) and acknowledged that the economy is embedded in nature and reliant on it and its limitations (Das Gupta, 2021[23]). It recently re-stated that in a high emissions future the level of global disruption will be so severe that 'normal' economic activity will become very challenging (Skidmore, 2022[24]). There have been recent roll-backs on Net Zero policies[25], prompting political analysts to describe the transformation of climate policy into an election 'wedge issue'[26]. This roll-back has been assessed, by the government's Climate Change Commission, as threatening to raise household bills, damage consumer confidence, jeopardise inward investment and make UK emissions-reductions targets harder to meet[27]. Furthermore they are now the subject of legal challenge on the basis that it goes against the government's own Climate Change Act[28]. These developments aside, the Government still communicates a long term commitment to change and the UK's Environmental Association for Universities and Colleges has previously asserted the need for a clear, cohesive and consistent response to the climate emergency from Further and Higher Education[29].

Connected to our work as educators then, we can refer to guidance from The Department of Education (2022), which released a Sustainability and Climate Change Strategy[30]. This strategy covers all levels of education from Early Years to Higher Education and describes the challenge of climate change as formidable. It says that for children, young people and students at all levels of education to meet this challenge *with determination*, not just despair, means that they must be offered not just the truth about climate change but also hope that they can be *agents of change* (Department for Education, 2022). This education-related document enables us to trace the relationship between planetary sustainability and enterprise education. Transgressing planetary boundaries increases the risk of large scale, abrupt and irreversible environmental changes to the very earth system on which humans depend. As a result there has been various political activity, declarations, reviews and a consideration of what this means for the various spheres of public life, including education. Educators are now called on to be part of a strategy to prepare students for a world impacted by climate change, drive innovation to meet legislative targets and provide opportunities for students to engage practically in the transition to de-carbonise and connect with nature (DfE, 2022).

Of course, we recognise this will not be news to the many colleagues who have been thinking, acting, writing and advocating in relation to sustainability concerns for many years. Indeed, the vital role of Higher Education plays in addressing global challenges and crises has been repeatedly summarised and reinforced (c.f. UNESCO, 2009[31]). However, we also observe from our lived experience that it is possible, in mainstream enterprise education, to be engaged in activities, using start-up tools and resources and participating in conversations which obscure sustainability concerns or potentially work against them. Many of our enterprise education and start-up support models and frameworks *do not* extend to visualising the ecological systems and planetary boundaries in which we are embedded and depend upon. Yet, given the limits of what the planet can sustain, the focus on value

[22] Hansard (2019), Volume 659, Environment and Climate Change - https://hansard.parliament.uk/Commons/2019-05-01/debates/3C133E25-D670-4F2B-B245-33968D0228D2/EnvironmentAndClimateChange
[23] Das Gupta (2021), The Economics of Biodiversity: https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review
[24] Skidmore (2022), Mission Zero: Independent Review of Net Zero: https://www.gov.uk/government/publications/review-of-net-zero
[25] Sunak (2023), PM Speech on Net Zero 20th September 2023: https://www.gov.uk/government/speeches/pm-speech-on-net-zero-20-september-2023
[26] Chatham House (2023), Making climate an election issue risks undermining the UK's international role: https://www.chathamhouse.org/2023/08/making-climate-election-issue-risks-undermining-uks-international-role
[27] Climate Change Commission (2023), CCC assessment on recent announcements and developments on Net Zero.
[28] Leigh Day Legal Services (2023), Chris Packham commences legal challenge against UK Government for abandoning green policies.
[29] EAUC (2020), Climate Commission Higher Education Hub: https://www.eauc.org.uk/climate_commission_higher_education_hub
[30] Department for Education (2022), Sustainability and Climate Change Strategy: https://www.gov.uk/government/publications/sustainability-and-climate-change-strategy
[31] See UNESCO, World Conference on Higher Education. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000189242

creation *for present generations* which ignores the potential consequences *for generations to come* creates a 'tragedy of the commons' which must be addressed (Hummels and Argyrou, 2021[32]).

One practical challenge we perceive – and which the process in this toolkit aims to address - is how an enterprise educator goes about re-orienting their practice, programmes and work focus if they *have not* been involved with sustainability until now. Perhaps there is a sustainability programme or activities in their setting, but it has not reached them or their day job yet. Perhaps there is a specialist role or team in a university which looks at sustainability, but much other practice carries on in a parallel fashion, maintaining business as usual, its values and frames for thinking. This toolkit provides one possible way forward from such a position. Underpinned by theories of emergence and generative change, it describes *a process* to engage others in conversation – and action – to expand the options of what is possible in a given setting. As well as providing a way of thinking about change (as emerging in and through relations and dialogue), this toolkit also offers a practical method (a workshop and activities that facilitate dialogue), and assets (example slides used in the two universities), which may support the adaptation and testing of this process. The process can be used by enterprise educators wishing to start, re-visit and re-energise conversation – and action – about how practice needs to change in light of concerns about planetary un/sustainability. Overall this is a highly practical contribution to the support the momentum - the movement – needed from all educators at this time. Before we introduce the intervention, we briefly address its theoretical underpinning.

2. Theoretical underpinning

The theoretical underpinning for this toolkit is a dialogic perspective on how change happens. Essentially, this perspective says that systems change through a pattern of emergence (Holman, 2013[33]), where change has a certain flow: disruptions break apart the status quo, the system differentiates and surfaces innovations and a new, more complex coherence arises. From a dialogic perspective change emerges in and through relations and dialogue (Bushe and Marshak, 2014[34], 2016b). It comes from bringing diverse people together and asking a generative question: given the challenge we are facing, *what can we do*? These ideas are also elaborated by the Berkana Institute[35], and further described in a blog by Daniel Rose[36] and articulated in the Two Loops Model for Change (illustrated overleaf).

The Two Loops model encourages us to recognise that at any time there is a dominant but dying system. A new system is created by people that come together and figure out different ways forward. These people become groups, groups become networks and networks become communities of practice which can influence change more systemically. It is possible to use this model to reflect: where are we, our current practice, our institution in this change process? And how can we bridge to what's next, what's after now, rather than holding on to dominant but dying ways of doing and being? In this model the idea of 'composting' recognises that something old is on the way out, but there is still goodness that can be gained from it. An old system needs help on its way out, and new ways of doing need to be created for people to bridge to. As acknowledged before, there will already

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[32] Hummels and Argyrou, 2021), Planetary demands: Re-defining sustainable development and sustainable entrepreneurship. Available at: https://www.sciencedirect.com/science/article/pii/S095965262033849X

[33] Holman (2013), A call to engage. Available at: ODP-V45No1-Holman.pdf (peggyholman.com)

[34] Bushe and Marshak (2014) The dialogic mindset in organisation development. Available at: https://www.emerald.com/insight/content/doi/10.1108/S0897-301620140000022002/full/html

[35] The Berkana Institute, Using emergence to take social innovation to scale. Available at: Pioneering a New Paradigm – Berkana Institute

[36] Rose, Daniel. How change happens. Available at: How change happens. - The Moment

have been outliers and pioneers leading this work. Learn from their practice, join them, bring what already exists into the mainstream.
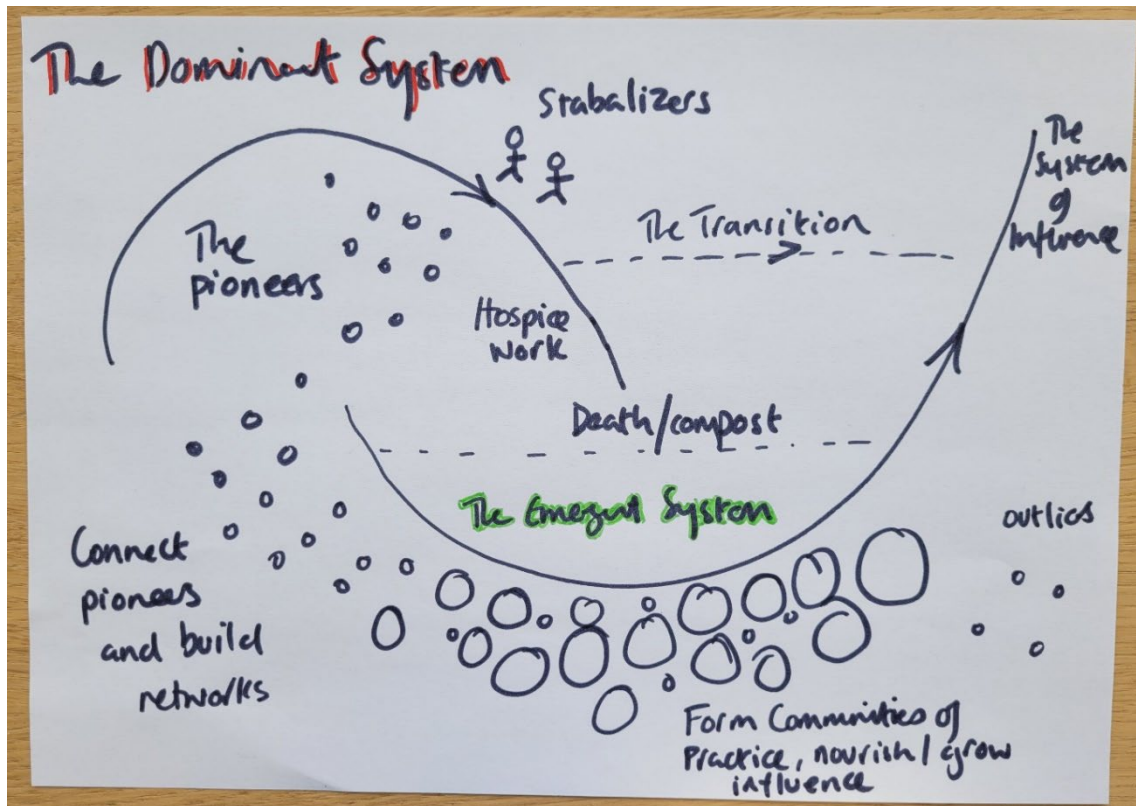
The Two Loops Model – illustration inspired by Daniel Rose: [How change happens. - The Moment](#)

This description of change is a relatable and relevant explanation regarding the process of *why* change happens via recruiting for a workshop, delivering a workshop and following up on subsequent possible actions and collaborations. The experience of this, in relation to dialogic development has been explored more fully elsewhere (Brentnall and Higgins, 2023[37]). But it should also feel familiar to people; it puts words to what enterprise educators have been involved in many times before – bringing people together, inspiring action and finding new and more complex ways of organising. The principles and practice of dialogic development described by various authors (Holman, 2010, 2013; Bushe and Marshak, 2014, 2016, McGerkow 2020), and the idea that change emerges in and through relations and dialogue makes this a *do-able strategy* for others to follow and adapt. Now the theoretical underpinning of the project has been introduced we present the workshop intervention.

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[37] Brentnall C., and Higgins, D. (2023) Enterprise and Entrepreneurship Education in and Age of Climate and Ecological Breakdown – Creating Conversational Action. 3e Conference, Aarhus, Denmark, May 10th – 12th.

3. Workshop Intervention

3.1 Workshop overview

The workshop can be thought of as being in three parts:

 - An introduction, with a short briefing about the climate/ecological context and a focus on connecting people (with each other and the topic)

 - A participatory decision-making process called OPERA (where people work on their Own, then in a Pair, to Explain, Rank and Arrange responses to a question), responding to the question: Given the climate and ecological predicament, what can we do?

 - A future search activity which provided an opportunity for reflection and captured individual ideas which might not have made it on to the OPERA board.

The next section describes the rationale behind the briefing part of the workshop.

3.2 Preparing the briefing

When designing this project it was proposed that we would create a workshop where delegates would receive a briefing about challenges to planetary sustainability and the necessity for ambitious and transformational change and role of EE and related stakeholders.

To inform the briefing part of the workshop, a number of interviews were conducted with various stakeholders in enterprise education, business/start up support, regional enterprise and development, environmental groups, community organisations and researchers. As elaborated more fully elsewhere (Brentnall and Higgins, 2023), every interview brought new insight, but diverging opinions. "People are bored of hearing about carbon" one business manager said, as opposed to one sustainability related academic saying "…people need a basic understanding of the physics of climate change…". One activist advised "people need to connect with the topic emotionally", whilst a climate communicator said "people get overwhelmed easily with the weight of emotion." Where our expert interviews converged was in two areas: approach the briefing from a personal perspective, with a personal story, and second, focus on what's possible.

The strategy of focusing on what's possible fits with a dialogic perspective on change. As opposed to diagnostic development (which elaborates a problem and aims to identify a single strategy which everyone will follow), dialogic development is based on the assumption that adaptive challenges have more than one answer and that change can be led by many people at all levels (Bushe and Marshak, 2014). This perspective on change creates the possibility that enterprise educators who are *not* involved in some strategic initiative or existing sustainability programming can still take action from their own role by creating the conditions through which change can emerge. In addition, regarding the briefing, focusing on sharing personal stories (rather than trying to deliver a scientific style climate briefing), is likely a more attainable approach than expecting enterprise educators to become sufficiently versed in, and confident regarding, the science of planetary sustainability. One option (which we adopted in subsequent dissemination events) is having experts on different dimensions of planetary sustainability speak to your audience for you. The online dissemination events which were part of this research project included Marta Nowicka, a Project Manager from Students Organising for Sustainability[38], Anna Watkins, a bio-materials entrepreneur[39], Professor Tim Lenton, Founding Director of the Global Systems Institute and expert on climate tipping points[40], and

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[38] Students Organising for Sustainability. https://www.sos-uk.org/about

[39] Anna Watkins, Founder, Uncommon Alchemy. https://uk.linkedin.com/in/anna-watkins-1b1075195

[40] Professor Tim Lenton, Founding Director Global Systems Institute. https://geography.exeter.ac.uk/staff/?web_id=Timothy_Lenton

Serxia Lage Arias[41], an Enterprise Educator involved in TrEE, a European project Transforming Enterprise Education in light of sustainability challenges. Assets from these presenters are available online[42] and demonstrate the effectiveness of bringing in expertise to expand and challenge thinking. Now the approach to the briefing has been introduced the process of recruiting for the workshop is described.

3.3 Recruiting/engaging

A crucial dimension of a dialogic perspective is that: *change is a process* not an event (Holman, Devane and Cady, 2007[43]). Indeed, if change is generated dialogically - in and through relations (Bushe and Marshak, 2014, 2016) - then it important to recognise that dialogue starts before the workshop, through the process of recruiting stakeholders. Every email and every conversation encouraging potential stakeholders to attend involves building connections and knowledge. These conversations introduce the question: 'What can EE do?' and encouraged potential attendees to recognise the value their perspective could bring to the conversation. The time involved in this process should not be underestimated. This is (at least) a three month task, not a one month task. Recruiting for the workshop *is part of the change proces*s, where stakeholders share what they are already doing, make a connection with the workshop goal and also suggest other individuals and organisations they thought might be interested in attending.

In dialogic development a principle is to try to 'get the system in the room'. A wide range of stakeholders are needed to offer different perspectives on possible ways forward (Weisbord and Janoff, 2010) and engage in dialogue that builds relationships, resolve conflicts, generate innovations and inspires collaborative actions (Holman, Devane and Cady, 2007). At our workshops we advertised that anyone was welcome (see Appendix 1 for EventBrite text) and then conducted targeted recruitment to stakeholders such as: those from any background interested in enterprise and entrepreneurship education, business and start up support, university staff whose research profile was tagged with enterprise, entrepreneurship and/or sustainability, students and student clubs (enterprise and sustainability), local and regional climate commissioners, sustainability staff from the University and local and regional government, community groups and activists working on environmental projects and campaigns. We started recruitment for our events from October (which took place in late Jan in Huddersfield and early February in Liverpool), and expected a 50% drop out rate, which was accurate (51 recruited in Huddersfield, 26 attended; 32 recruited in Liverpool, 16 attended).

The most important principle at the recruitment stage is diversity. A diversity of thinking and possible ways forward is more likely to emerge from a process in which there is a diversity of the stakeholders. Prior to the event we provided some background about enterprise, entrepreneurship and related programmes and activities (see Appendix 2). Such information was provided because the goal of the face-to-face time was not to concentrate on where we are now, but rather to facilitate the attendees *to find ways forward*. This approach enabled us to stay very brief with our descriptions about current programming and instead learn with and from attendees what might be different. Before we describe these activities we introduce the first part of the workshop – introductions and connecting.

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[41] Serxia Lage Arias, Enterprise Educator and Member of the TrEE consortium. https://www.researchgate.net/profile/Serxia-Lage-Arias
[42] See EEUK events pages: https://www.enterprise.ac.uk/events/climate-action-for-ent-educators/ and https://www.enterprise.ac.uk/events/climate-tipping-points-and-social-tipping-points/
[43] Holman, Devane and Cady (2007). The Change Handbook. Available at: https://books.google.co.uk/books/about/The_Change_Handbook.html?id=mmip7lgF5UkC&redir_esc=y

3.4 Introduction and connecting

An important dimension of a dialogic approach is to build connections between people. Dialogic authors are interested in social construction and language and assert that, in the face of disruption, people need 'hosts' for change, and experiences which bring them together with *who and what needs to interact* to inspire explorations that lead to positive change and ways forward (Holman, 2013).

Connectivity happened in a number of ways in the workshop. First, such an intervention provides the opportunity to engage sustainability leaders in a University to become aware of, or even involved in, the workshop. For example in the University of Huddersfield, the Deputy Pro-Vice Chancellor, who leads on sustainability, attended the workshop to welcome guests and share some of the University's sustainability actions. In the University of Liverpool a Professor and the leader of the University's Centre for Sustainable Business took part in the whole workshop and then spoke at the end to share the University' actions and provide additional insight based on the session.

Then there was the opportunity to for people in the room to connect with each other, this happened by setting the scene for a convivial atmosphere and supporting people to feel comfortable working with each other. We did this by posting the overall purpose of the workshop, learning assumptions and principles of dialogue on the walls and signposting these as a reminder of what we were drawing on to guide our thinking and acting in the session. These posters were adapted from ideas provided by Weisbord and Janoff (2010), where they describe in detail how to support the conditions, and propose activities for, facilitating dialogue.
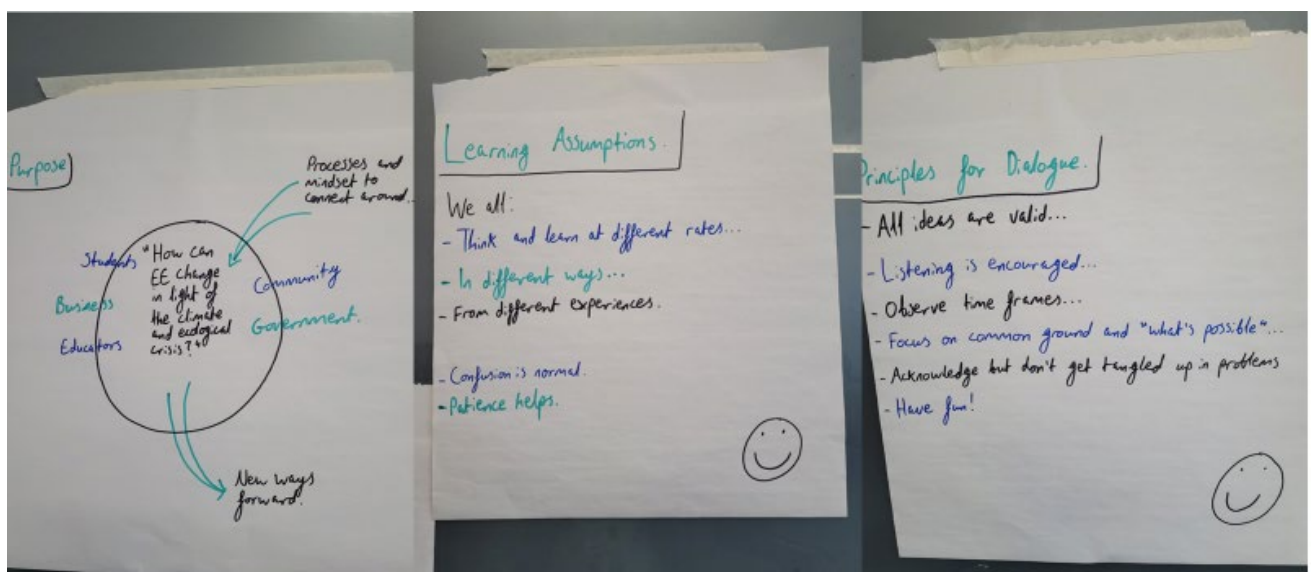
Workshop reminders - Purpose, assumptions and principles, adapted from Weisbord and Janoff (2010).

As discussed in section 3.1, it was originally imagined that the workshop would start with a briefing about the climate and ecological crisis. This is because it has been asserted that an early/key task in enabling change towards sustainability is to facilitate opportunities *for briefing* and dialogue are considered a 'springboard for climate action[44] and supporting a critical mass - positive tipping

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[44] See for example: https://climatenetwork.org/wp-content/uploads/2020/11/facilitative_dialogue_2018_-_a_springboard_for_climate_action.pdf

points[45] - regarding changes in values and behaviours. However, as discussed, as a result of the various and conflicting advice during the research stage of the project, this briefing was kept lite and personal. The personal stories were just that, short articulations of what brought us to the climate and ecological crisis and why we cared. In the case of the University of Huddersfield, Brentnall shared the experience of hearing a radio news special about the release of an IPCC report in August 2021. In the case of the University of Liverpool, Higgins shared the experience of visiting Mount Kilimanjaro in 2022 and seeing and hearing about the changed environment and the impact on wildlife and communities. In both cases the facilitators chose climate related information and concerns that had spoken to them and to which they connected. In Huddersfield this involved briefly sharing the headlines from the IPCC (Intergovernmental Panel on Climate Change) reports and acknowledging the challenge of navigating between the reactions of denial and despair. In Liverpool this involved sharing local data on the climate concerns of people living in the Liverpool City Region and the challenge of navigating between reactions of denial and despair. In both cases this segment concluded by bringing the focus back to 'what's possible?' as a way of helping to find ways forward (see slides 1-5 for University of Huddersfield/Slide Set 1 and slides 1-6 For University of Liverpool).

These introductions were followed with a brief description of the project as a process through which we aimed to emerge changes in our practice and for enterprise education more generally. A high-level introduction to enterprise education and support (and what was provided at the institution), was also provided to set the context. After these introductions were made, attendees were facilitated to meet each other.

Providing an opportunity for project attendees to meet each other aimed to create a convivial atmosphere and to build connections in the group. In Huddersfield this activity involved people creating personal (hand drawn or written) personal avatars (these were given as an arrival task so people also had something to chat about/do together). The avatar format asked them to explain their connection to sustainability and acted as artefacts for introducing themselves to each other in a series of networking rounds. People then placed these Avatars on a flipchart timeline that went around the room to illustrate when people had come to sustainability concerns. In Liverpool flipchart paper labelled with decades were put up around the room and people were encouraged to write words on these to illuminate their connections and emotions to sustainability and related issues over time. In this case conversations developed between people as they added to flipchart and discussed what was being recorded. The pictures below (blurred to maintain anonymity), illustrate the outcome of the process in Huddersfield (Picture 1) and Liverpool (Picture 2).

Picture 2 – Timeline and Avatars – My connection to sustainability… University of Huddersfield

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[45] See Lenton et al (2021), Operationalising Positive Tipping Points. Available at:
https://www.exeter.ac.uk/media/universityofexeter/globalsystemsinstitute/documents/Lenton_et_al_-_Operationalising_positive_tipping_points.pdf
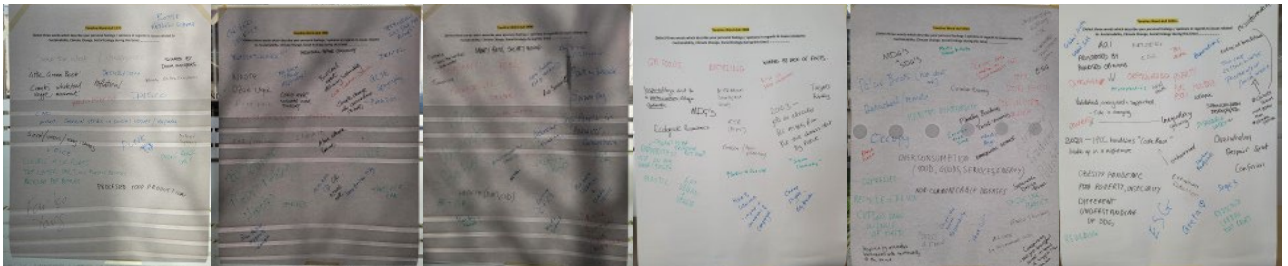
Picture 3 – Timeline – Words and Emotions connecting me to sustainability...University of Liverpool

Linking back to the dialogic perspective, authors tend to emphasise the interdependence of people and how change can be enabled (or constrained) via the quality of relationships and communication (Bushe and Marshak, 2018). This part of the workshop aimed to create connections and conviviality between participants which developed a sense of enthusiasm for 'what is possible.' In the next session the participatory activity 'OPERA' is described which aimed to answer this question.

3.5 OPERA

The 'main' part of the workshop was a participatory decision-making activity – OPERA – where people work on their Own, then in a Pair to Explain, Rank and Arrange ideas in relation to a question. OPERA is an activity developed by Finnish consultancy Innotiimi, now part of ICG, a European change management group[46]. The OPERA process has been documented by practitioners[47], and as a Learning and Development Method for improving workplace democracy and practices in cooperative and fairshare enterprises[48]. Innotiimi created OPERA boards[49], however an OPERA space could be created using masking tape and post it note labels (labelling columns A – F and rows 1 – 4).

From a dialogic perspective, group activities are supposed to facilitate people to respond to *generative questions*, that is, questions that enable them space and freedom to consider new ways forward. The structure of an OPERA is that it has a question at its start/at its heart – every OPERA starts with a question. The act of posing a generative question and facilitating people to respond collectively and collaboratively is a core dimension of dialogic development (Holman, 2023). In this case a question and some suggestions were posed to prompt people's thinking, but leave enough space for them to generate their own responses (see slides 9 for University of Huddersfield/Slide Set 1 and slides 9 for University of Liverpool). In light of the introduction and climate briefing, the question we asked was:

– *Given the climate/ecological crisis, how can and should we/EE change?*

Then we provided some follow up prompts:

 - *What knowledge, tools, frameworks, concepts, behaviours, values, attitudes, skills etc, do students need? Are there activities, training, networks, programmes, that we (our clients/students, us), should do, join or create?*

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[46] See: Who is ICG? - ICG (integratedconsulting.eu)
[47] See Campbell (2016). Available at: How to identify a collective way forward in simple steps (using OPERA process) | We Cultivate Blog (wordpress.com)
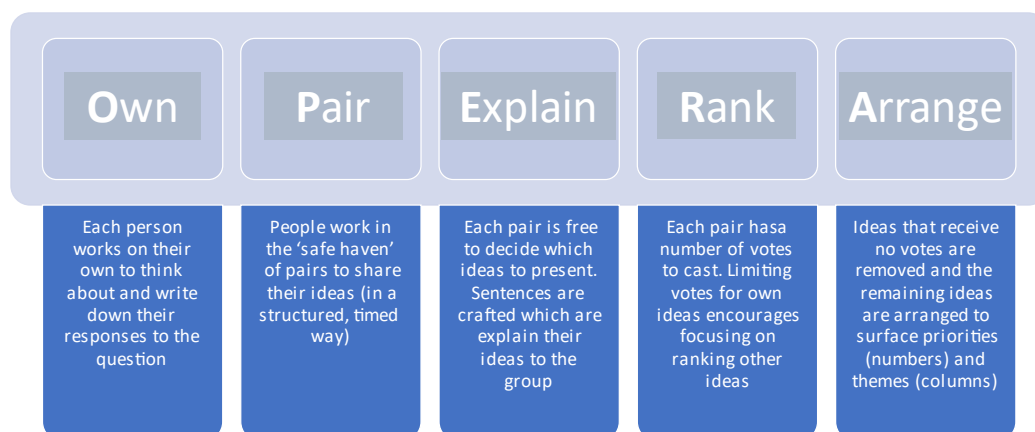[48] See Ridley-Duff, Southcombe and Picken (2017): V3.0-03-FiveLDMethods-Final.pdf (fairshares.coop)
[49] See (ICG Consulting): https://www.integratedconsulting.hu/insights/opera/

It is important to reassure participants that they will all come at this question from their own particular experience and interests. All responses are legitimate and the process will help draw out and synthesise responses.

As people will work in pairs, this organising (putting people in pairs), can be done before the question is posed, so that the flow is not interrupted. A quick way is to put people in pairs is to divide the number of people in the room by two, then explain you will put people into pairs by giving everyone a number and then each pair has to find each other. For example, if there was 30 people you can say 'I'm going to look you in the eye and give you a number, listen out for who has your number, you will find your pair in a minute'. Then you would look at people and give them a number, up to 15, then start at 1 again, and count up to 15. Then encourage people to get up and find their pair. If there is an odd number then you would count out 15 twice and then an extra '1', meaning you would have one group of three and would need to account for this in your timings (for example having 3 minutes of timed sharing and explaining to pairs that once they have shared their can fall into discussion).

When people are organised in pairs the OPERA process follows a numbers of steps, and these are elaborated below:

Own	**P**air	**E**xplain	**R**ank	**A**rrange
Each person works on their own to think about and write down their responses to the question	People work in the 'safe haven' of pairs to share their ideas (in a structured, timed way)	Each pair is free to decide which ideas to present. Sentences are crafted which are explain their ideas to the group	Each pair has a number of votes to cast. Limiting votes for own ideas encourages focusing on ranking other ideas	Ideas that receive no votes are removed and the remaining ideas are arranged to surface priorities (numbers) and themes (columns)

Step 1 - Own:

People spend time (typically five minutes), thinking about the question on their OWN. This is done in silence (as soon as one person starts to speak it narrows everyone else's perception of the question). Ask people to write down the question *and* their responses (they will share them in the next step and writing is important so they can hold on to their thoughts).

Step 2 - PAIR:

People work in PAIRS and share what they have written and thought about. They also decide on a number of ideas to put forward to the rest of the group.

2 a) Sharing is structured by timings (for example, person 1 has five minutes, person 2 has five minutes), and the pairs are encouraged to let each other speak and to only intervene to ask questions and draw out, further understand their partners experience. The idea is that feel more free to share their thoughts fully in the safe haven of pairs.

2 b) Once the pair has shared their ideas, the second part of this step is for the pair to decide which ideas they want to put forward. The number of the group will influence how many ideas you ask

pairs to put forward. The OPERA board (or DIY OPERA matrix), 4 rows and six columns. The OPERA board is pre-labelled A, B, C, D, E and F. Post it notes can be used to mark the rows 1, 2, 3 and 4 (see pictures at the end of this section). That means that there are 24 spaces on the board. With the example of 15 pairs, if pairs were asked to put only 1 idea forward only 15 out of 24 squares would be filled. If pairs were asked to put two ideas forward there would be 30 ideas (so another column could be added). Asking pairs to put forward an unequal number of ideas means that pairs have to listen to each others ideas (for example proposing 1 or 3 ideas forward depending on numbers). But pairs can also be encouraged to blend and synthesise and put forward thew ideas that they feel are most important for the group to hear, which encourages deeper thinking with their decisions. This part of the process just involves the pairs deciding on their ideas to be shared with the rest of the group. For those who decide quickly encourage them to be talking about these ideas whilst waiting for everyone to decide. Typically, the 'decide' part of this step takes about five – 10 minutes.

Step 3 – Explaining

Once every pair has decided on which ideas they are going to share the next step is EXPLAINING. This happens in two parts.

3 a) Each pair must write their ideas down clearly on a piece of A4 paper (landscape orientation). The size of writing must be large enough that people can read from a distance. They must use a marker (not a biro) so the text can be read from a distance. The idea nees to be articulated in a comprehensive enough fashion that people can understand the idea without any further interpretations, additions or editing. If pairs are only proposing one idea (or 3) they must structure their explaination so that they share the speaking. If they are proposing two ideas, then each person will read one idea. See the pictures at the end of this section for illustrations. Once each pair has their written sentences ready then they move on to part two of explaining. This step can take around 10 to 25 minutes (depending on number of ideas as well). The trick is to keep people moving and/or encourage those who finish quickly to add/further develop their ideas if there is more they could say.

3 b) The next part of this step is that people bring their ideas (written on A4 landscape paper) and gather round the OPERA board. People are asked to listen carefully to each idea as they will be voting on ideas in the next step. Each pair reads their ideas (sharing the speaking between each other so everyone's voice is heard) and then the ideas are placed on the board (using masking tape, it doesn't matter where). The groups ideas are made visible on the board. The next steps is ranking the ideas.

Step 4 – Ranking

An important part of the ranking step is to ask a clarifying question to help people choose between ideas. For example, we reminded people about the briefing, what is at stake and the call for urgent and ambitious action. Then explain that each pair has ten votes and they decide how to use them. Ten votes mean that the Pair are encouraged to discuss all the ideas. Restricting the number of votes pairs can put on their own idea, or saying they can't vote for their own ideas means that pairs have to focus on the ideas of others. This is the point where pairs are exploring and comparing ideas and trying to weight up one idea against the other. If there are many people infront of the OPERA board you can encourage people to take a photograph and return to tables to discuss and decide. This step can take between 10 and 20 minutes.

The more ideas there are, the more time is needed for people to weigh up their choices. When people are ready they distribute the votes by drawaing dots on the ideas. When all the dots are

drawn, involve people in adding up the number of votes and writing the result as a number, circled, so people can see which ideas the group has prioritised. The next steps is to arrange the ideas in order of priority and theme.

AWARENESS, EDUCATION, AND DIFFERENT WAYS OF THINKING

COLLABORATIVE WORKING

Reframing Business and Enterprise

UNIVERSITY WIDE CURRICULUM AND TRAINING PEDAGOGY

1

How can EE Education include more objective global 'Life Cycle Thinking' tools and more creative storytelling tools to communicate sustainability Impact

WE NEED TO WORK COLLABORATIVELY ACROSS BORDERS AND DISCIPLINES TO BREAK DOWN BARRIERS, CONCENTRATING ON COMMON PROBLEMS, NOT OUR DIFFERENCES — 12

Frame enterprise as having a purpose beyond financial gain and growth for growth's sake, introducing alternative models such as doughnut economics.

Short Sustainability training for ALL students across uni. (Similar to current academic integrity training requirement). So all students are on the 'Planetary page' (Levelling) ②

2

All students learn to use a new-business sustainability evaluation toolkit so that they understand the social and environmental impact of the idea, as well as the financial sustainability – based on UN Sustainability goals.

Use less competition in Enterprise Education, and help students develop good business practice in their own time. ④

CHALLENGE STUDENTS BUSINESS PRIORITY TO MOVE AWAY FROM EXISTING WAY OF THINKING ABOUT DESIGN, MATERIALS AND RESOURCES. E.g. Removing our current Reliance on fossil fuels when there ARE viable Alternatives. 4

Teach in the ways you want graduates to become, preparing them for real-world sustainability work, and life. ⑦

3

Understand that climate/ecological crisis is complex and we need to teach the subject through the lens of systems thinking 10

Universities to connect locally and internally to collaborate on sustainability issues ③

Educate potential entrepreneurs to: - work with existing companies - helping them with their 'Green Transition' (B2B) ⑤ - introducing new thinking/approaches to material usage/sourcing, product design/life cycle, processing, marketing. Companies do not have the knowledge/capacity

Training to fact check the overwhelming amount of information to identify greenwashing and avoid contributing to greenwashing practices

4

ENCOURAGE AWARENESS AND USE OF WORLDWIDE, MEASURABLE SUSTAINABILITY METRICS SUCH AS SDGs (SUSTAINABLE DEVELOPMENT GOALS) TO AVOID VAGUENESS AND GREENWASHING

How can we reduce consumption in the rich countries such that emerging and poor countries can have more 'local' sustainable activities /economy?

Avoid pushing the word "sustainable", instead, lead by examples which normalise (good) business.

WORK WITH STAFF TO BUILD KNOWLEDGE + SKILLS IN RELATION TO SUSTAINABLE E.E. THIS RECOGNISES THE IMPORTANCE OF TRICKLE DOWN: HE STAFF → HE Students → END USERS/ STAKEHOLDERS (e.g. School pupils)

Engage all students to recognise the impact they can have on their immediate worlds i.e uni campus & local communities... ③ • Food, Services, community fridge, campus, waste disposal

Make EE into SEE – add sustainability to all the curriculum. Include an understanding of climate + nature crisis. Ask "how does this enterprise contribute to a fairer, more sustainable world?" throughout. 8

2. practically integrate sustainability into wider challenge or start a business by creating business plans ②

"It's not what we say, It's what we do!" Empower students to take action & create value in their immediate worlds & local communities. "24 hours with the global goals" "pop ups"

Develop the processes and procedures including terminology, metrics and assumptions to move from denial, deflection and decision to proactive optimism and sharing 4

Picture 3 – OPERA outcomes, Univerity of Huddersfield.

Step 5 – Arranging

At the beginning of this step any ideas with no votes are removed and placed at the side of the OPERA board. Pay homage to these ideas and explain there is always overlap in an OPERA and it may be that other similar ideas were expressed at more length and that removing these ideas is just about focussing the process (but we still have these ideas for another day, or to add nuance to an exisitng idea).
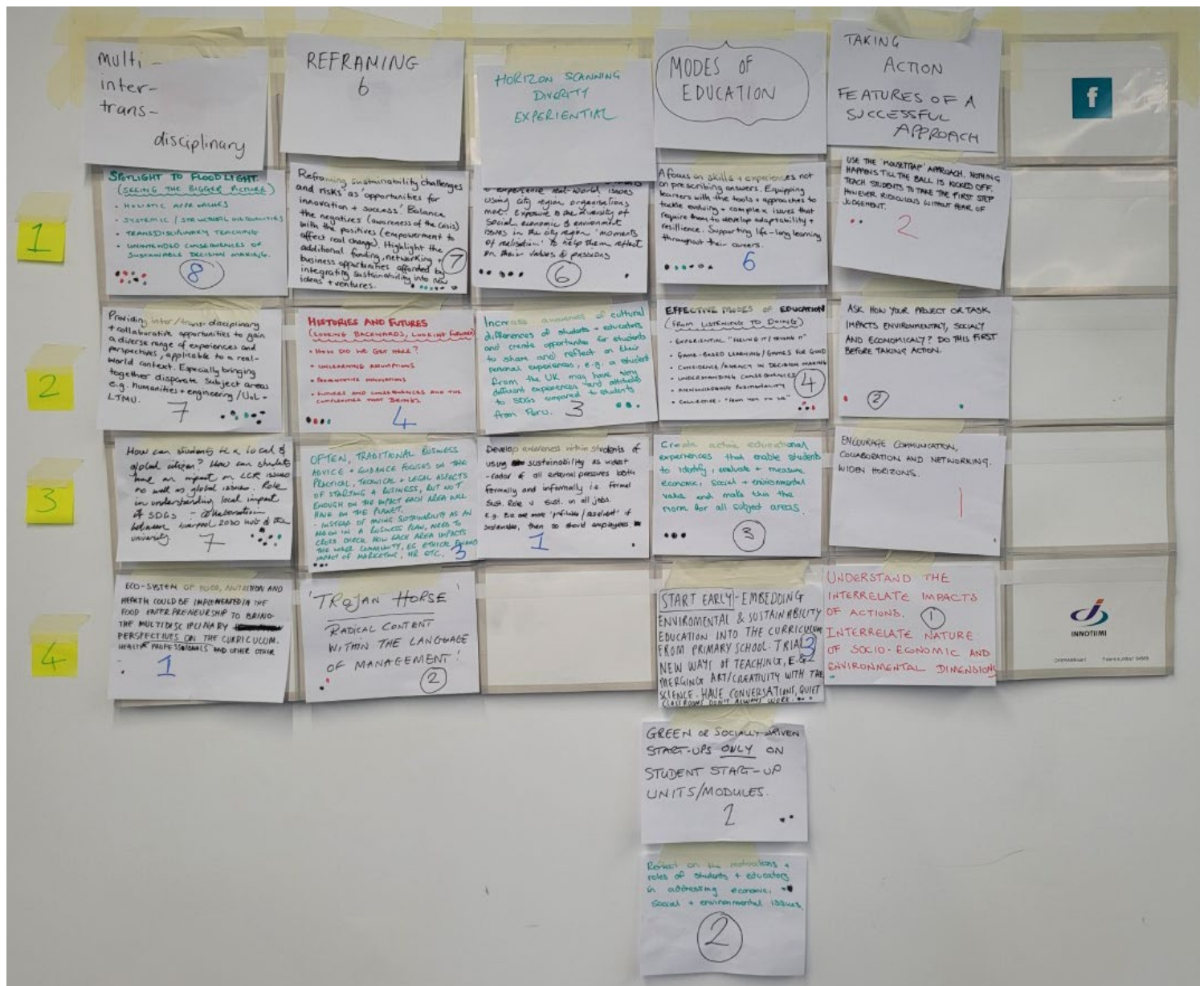
Picture 4 - OPERA outcomes, Univesity of Liverpool.

Now the task of the facilitator is to involve the group in re-arranging the remaining ideas. To get this process going, pairs need to identify the idea with the most votes (the idea the group prioritised), this will go in the top left hand box (A1). The group re-directs the re-arrangement of the board by

saying the idea's current position and then directing where it needs to end up (usually someone will understand or you model this by saying 'D4 to A1', and ask someone to say it so you as facilitator respond and moves the idea). Then ask 'Which is the idea with the next number of votes?' (identify the idea). Then ask 'Is it the same theme as the first idea, or does it need a new column?' This process continues until ideas are distributed under existing themes or a new column is started for a new theme.

When all ideas are distributed the final task is to label the themes. Ask people to call out words of labels for each heading. Ask other group members to write these down. Involve the group as much as possible in this process so you are focussed on facilitating and pairs/the group are focussed on comparing ideas, directing/re-directing ideas on the board and labelling the columns as themes. The group can see that in a relativelty short space of time, through considering a generative question which focuses on what's possible, a range of ideas can be surfaced which show what enterprise education can do.

The outcome of the OPERA process is shown in the following pictures 3 and picture 4 (and steps correspond to slides 9-17 for both universities). As a follow on and reflection, the final activity in the workshop was a Future Search.

3.5 Future searching

Whilst the OPERA was a collaborative methodology to facilitate participation in a collective process of surfacing and prioritising ideas, the final part of the workshop acted as a reflection point and an opportunity to capture ideas that didn't make the OPERA board.

The Future Search methodology has been written about extensively and can be a very in-depth process lasting for days (Weisbord and Janoff, 2010). In this case we borrowed the principle and language of Future Search, where people imagine the future and provide concrete examples of what that looks like and used this as a final/reflection activity. People were invited to do this activity in an Open Space way (Holman, Devance and Cady, 2007). This means they could move around, return to their initial group, as their pair or even approach someone they chatted with earlier and wish to pick up with or work by themselves.

Using Future Search as a reflection meant that people could consolidate their own thoughts, but also highlight aspects that were particularly important to them, that might not have made it onto the OPERA board through the process of negotiating and synthesising. For example, in Huddersfield, one Future Search involved 'Giving Nature a seat at the table of every decision-making situation', a simple yet powerful image that hadn't made it on to the OPERA board.
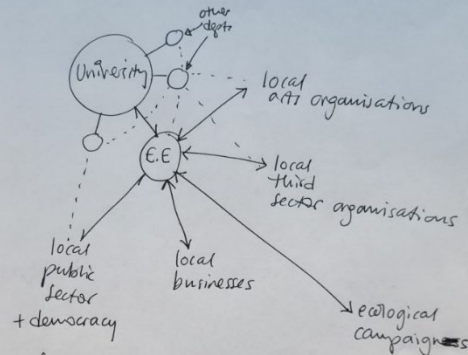
Contributions to this element of the workshop are shown on Picture set 5 and Picture set 6.

In 2 years time...

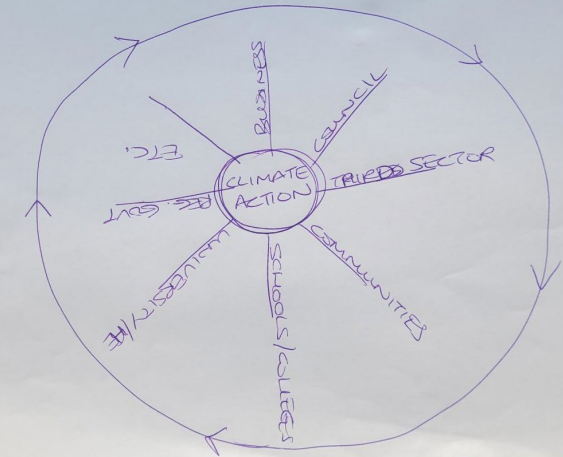Nature has a seat at the table in every decision-making situation.

→ Have someone in room to represent the interests of the natural world.

→ Perhaps through creating tools for use by students/ teachers/ business leaders etc.

Future Search

Media / groups could be formed to update the students on the current position / news about sustainability.

Climate experts and education experts collaborating to make curriculums that enable the students to understand the greenwashing happening across the industries.

Future Search

University — other depts
E.E

→ local arts organisations
→ local third sector organisations
→ ecological campaigns

local public sector + democracy
local businesses

What?
Entrepreneurs are learning through real-world practical involvement - helping to address local challenges / opportunities / needs → improving and strengthening local action on climate change, protecting nature and sustainable economy.

How? - Listening to, engaging with partners.
- Developing trust, relationships, communication
- Measuring impact, sharing learning.

Future Search.

Small / Sustainable tech / computing

The right to repair

Inspire change.

Longevity / heirlooms

Avoid keeping up with the Joneses / trends

Only upgrade as a last resort.

CLIMATE ACTION
BUSINESS — COUNCIL
ETC — THIRD SECTOR
LAS/FE/LAS/SEC
UNIVERSITY/FE — COMMUNITIES
SCHOOLS/COLLEGES

Developed an open to all course / module, that can be embedded institution-wide, bringing in areas of knowledge & expertise from today's connections to showcase different elements of the sector.
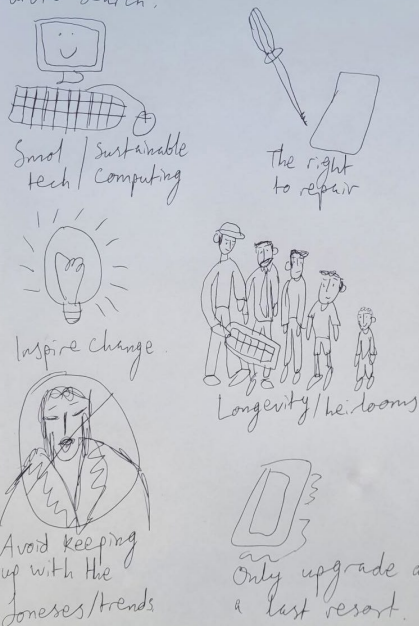**Aim:** produce carbon literate graduates into labour market

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1. Create → AND DELIVER a Systems Thinking module for Sustainability

2. CREATE A KIRKLEES DOUGHNUT

3. CLOSELY INTEGRATE WITH KCC (EE + STUDENTS)

Picture/s 5 – Future Search examples, University of Huddersfield.

Working in the way we want.

- Educators to and Cross collaborate
- Inter disciplinary
- Partner with Employers, increase commercial awareness
- Provide real world opportunities.
- Provide accessibility to the SDG's

- Deliver local and Global opportunities.

- Students are openly holding organisations to account

- Recognition + acknowledgement of what needs to change — and change has begun...

- Cross-disciplinary programmes that are solution focused where people have equal agency to create change.

- Crisis averted ... peace and love across the world ♡

FUTURE SEARCH

- BETTER DISTRIBUTION OF WEALTH + OPPORTUNITIES

- BETTER EMPHASIS OF PLANET OVER PROFIT.

- END GOD POVERTY ONCE AND FOR ALL

- BETTER DISTRIBUTION + ACCESS TO RESOURCE TO EMPOWER ALL COMMUNITIES TO THRIVE.

- BETTER USE OF SOCIAL MEDIA + INFLUENCE TO IMPROVE EDUCATION + AWARENESS.

- EARLIER IMBEDDING OF SUSTAINABILITY + LIFE SKILLS IN SCHOOLS.

FUTURE SEARCH.

* NEW FORMAL RELATIONSHIPS
* INNOVATION IS KEY PROVEN + EMBEDDED
* INTERNAL COMMUNICATIONS SHARING + ADDING FURTHER VALUE + IMPACT ACROSS ALL SILOS.

* EXTERNAL COMMS BEING BOLD POSITION UoL AT HIGHEST THOUGHT-LEADERSHIP

* PEER TESTIMONIALS + AWARDS. /3RD PARTY

* CASE STUDIES OF TANGIBLE SUCCESSES

* DEMONSTRATION OF COLLABORATION - ESPECIALLY PRIVATE SECTOR

* ACTING AS KEY LCR SUST LEADER POLITICALLY

* NATIONAL + GLOBAL EXEMPLAR!

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2 YEARS TIME
CHANGED BEHAVIOUR, LESS SELF INTEREST AND MORE AWARENESS OF COMMUNITY, SOCIAL CONTRACT + ENVIRONMENT

CONCRETE EXAMPLES
SOLUTIONS BEING GENERATED, NANOTECH CHANGING PLASTICS, ADVANCES IN UNDERSTANDING UNINTENDED CONSEQUENCES

HOW WE DID IT
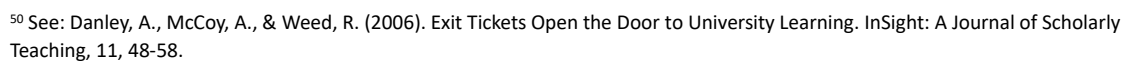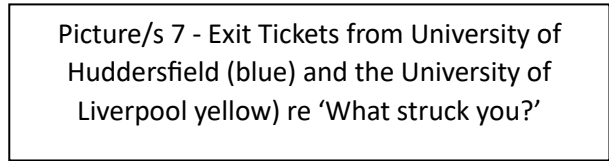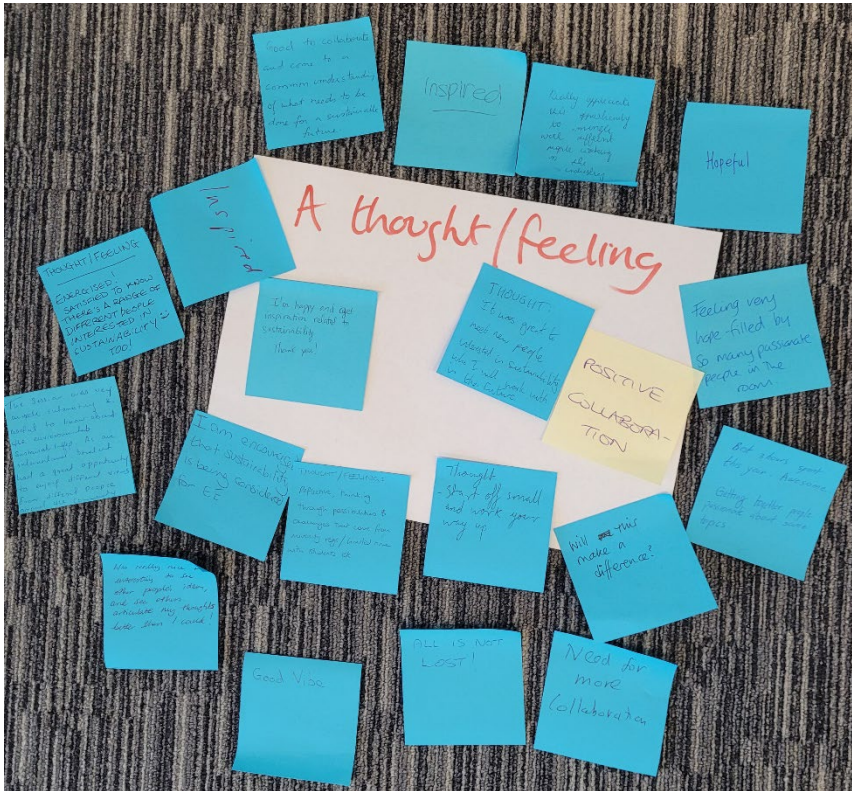ASKING AWKWARD QUESTIONS & NOT GIVING IN. TENACITY.

FUTURE SEARCH.

In two years time I would like sustainability to become more embedded within module content. That it is not seen as 'Sustainable business' but just a part of doing business.

Networking - building this network.
- keeping discussion open
- learning from each other.
- developing 'best practice' in conjunction with industry / particularly local businesses.
- understanding the challenges faced by each other.

20

4. New ways forward

In this section we illustrate what has come out of the workshops so far, focussing on immediate reactions and emerging results, which have helped generate new ways forward in terms of practice and thinking.

4.1 Immediate results

In terms of immediate results, we collected Exit Tickets[50] to capture reactions to the experience. We asked for reactions about 'what struck' attendees and also asked for a 'thought or a feeling' at the end of the sessions. Pictures 7 and 8 show the responses.

Picture/s 7 - Exit Tickets from University of Huddersfield (blue) and the University of Liverpool yellow) re 'What struck you?'

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[50] See: Danley, A., McCoy, A., & Weed, R. (2006). Exit Tickets Open the Door to University Learning. InSight: A Journal of Scholarly Teaching, 11, 48-58.

Picture/s 8 - Exit Tickets from University of Huddersfield (blue) and the University of Liverpool (yellow) re 'A thought/feeling''
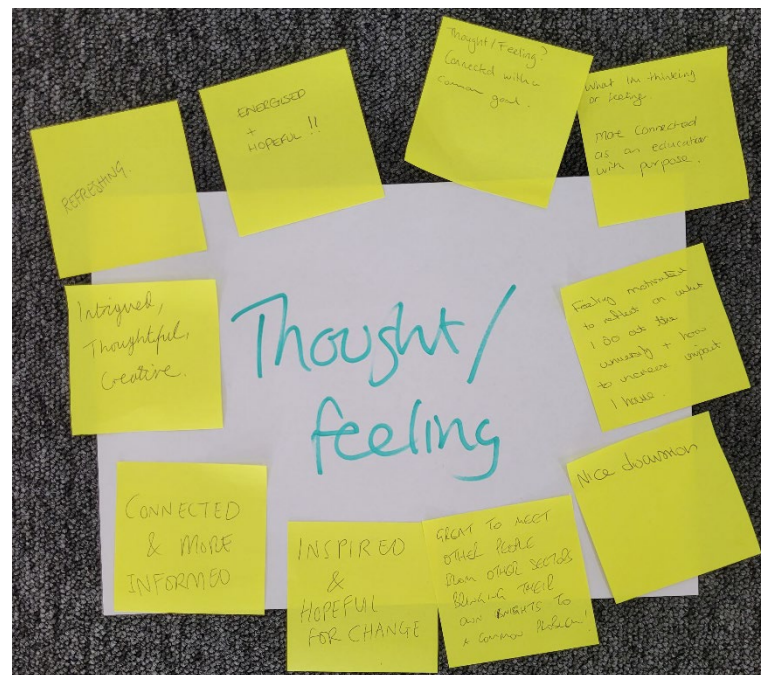
From a dialogic perspective, and the goal of being 'hosts for change', the general sense of enthusiasm and appreciation of collaboration suggests that in these workshops we experienced how dialogic change methods "demonstrate how quickly people can have a voice" and how this "fuels enthusiastic participation" (Holman, Devane and Cady, 2007, p.7).

In both the universities the workshop had created a focal point for generative dialogue and opportunities to follow up with interested participants about their ideas and possible new ways forward. These emergent results are shared in the following section.

4.2 Emerging results

We share the emergent results under three themes: new internal connections, new external connections and new programming and practices.

4.2.1 New internal connections

The project provided a reason to connect with academics, support staff and university research centres around a shared concern about un/sustainability. In Liverpool a new connection with the Centre for Sustainable Business was developed. In Huddersfield, a new connection with SURGE (the Centre for Sustainability, Responsibility, Governance and Ethics) was developed. These new connections have the possibility of influencing practice and programming (see below). In addition, other university stakeholders connected through the workshop, for example a post-graduate researcher in Huddersfield with a sustainability-related business idea connected with start-up support, and in Liverpool support services delivering a sustainability challenge connected with the academics.

4.2.2 New external connections

The workshop provided a reason and a focal point to connect with local sustainability-related organisations, local and regional government officers and business/circular support experts and other community groups and activists. New opportunities emerged from these connections. In Huddersfield the possibility of hosting the annual schools eco-conference is being explored and invitations were received to showcase the project at Yorkshire Sustainability Week. In Liverpool an opportunity to speak at a policy related 'Entrepreneurship Development Workshop' took place in June 2023.

4.2.3 New programming and practice

The project and workshop aimed to empower practitioners and scholars to consider how EE might change in light of un/sustainability challenges. In the University of Liverpool this resulted in a new inter-disciplinary module – Philosophy, Ethics and Morality – validated by the University in June 2023. At the University of Huddersfield this resulted in new joint work with Dr John Lever to bring business re-design (using principles from Doughnut Economics) to the Enterprise Team programme and being captured for the EE community (through a new ISBE conference paper). Various tools, frameworks and practices (collected through the engagement and dissemination activity and are listed at the back of the toolkit), have been integrated in practice. For example in Huddersfield, an input on 'Business Planning' in a venture creation module was adapted to 'Business Planning in Turbulent Times' and students were introduced to future scenario building and PESTLE.

5. Concluding reflection

The main objective of this research project and toolkit is to enable enterprise education community leadership to contribute to the step change needed at all levels of society in light of the unsustainability of business as usual. This toolkit provides a replicable workshop process that facilitates inter-disciplinary dialogue and creates connections to generate new possibilities for action. Neither author was involved in sustainability related enterprise and entrepreneurship scholarship or support before this project. Yet this process – convening a workshop of stakeholders from in and outside a university who are interested in enterprise and sustainability and asking, '*What can we do*?' - has generated ways forward. As Peggy Holman (2016) says, dialogic work invites people into spaces of 'not knowing' through which they can move into new possibilities. This process, of connecting, convening and co-planning is a highly practical yet manageable contribution to support the momentum towards – *and the movement needed for* - planetary sustainability.

6. Dialogic development literature

Below are a number of key texts with regards to the dialogic perspective underpinning this project:

Bushe, G. R., & Marshak, R. J. (2014). The dialogic mindset in organization development. In Research in organizational change and development (Vol. 22, pp. 55-97). Emerald Group Publishing Limited.

Bushe, G. R., & Marshak, R. J. (2016a). The dialogic mindset: Leading emergent change in a complex world. Organization development journal, 34(1).

Bushe, G.R. & Marshak, R.J. (2016b) The Dialogic Organization Development Approach to Transformation and Change. In Rothwell, W. Stravros, J., & Sullivan R. (eds.) Practicing Organization Development 4th Ed. (407-418). San Francisco, Wiley.

Holman, P. (2010). Engaging emergence: Turning upheaval into opportunity. Berrett-Koehler Publishers.

Holman, P. (2013). A Call to Engage. Advances in Dialogic OD, 45(1), 18.

Holman, P. (2016), How Chaos Catalyses Emergence with Peggy Holman. The Association of the Tree of Life. Available at: https://www.youtube.com/watch?v=HpgNHnbYjwA&t=767s

Holman, P. (2023). Emergent Design for Generative Change: Dialogic Theory at Work. *Organization Development Review*, *55*(1).

Holman, P., Devane, T., & Cady, S. (2007). The change handbook: The definitive resource on today's best methods for engaging whole systems. Berrett-Koehler Publishers.

McGerkow, M. (2020). Hosting Generative Change: Creating Containers for Creativity and Commitment. BMI Series in Dialogic Organisation Development.

Rose, D. (n.d.a). How Change Happens, The Moment. Available at: https://www.themoment.is/how-change-happens/

Weisbord, M., & Janoff, S. (2010). Future search: Getting the whole system in the room for vision, commitment, and action. Berrett-Koehler Publishers.

Wheatley, M., & Frieze, D. (2006). Using emergence to take social innovation to scale. *The Berkana Institute*, *9*(3), 147-197.

7. Appendices

7.1 Eventbrite text to promote the event

About this event

Enterprise Education and Planetary Sustainability – What can EE do?

This workshop, part of a research project supported by Enterprise Educators UK, aims to energise dialogue - and action - about how people in the field of enterprise and entrepreneurship education (staff and academics engaged in supporting student and graduate start-ups, and developing future enterprising and entrepreneurial professionals), can, and should, adapt their work in light of the climate and ecological predicament we are in.

The workshop is hosted by the University of Huddersfield, in partnership with the University of Liverpool, and will be in two parts. First there will be a briefing on the climate and ecological context and the implications of this. Then attendees will take part in a participatory decision-making process called an OPERA (where participants work on their Own, then in Pairs, to Explain, Rank and Arrange ideas), to propose, synthesise and agree actions which can and/or should be taken in light of the briefing.

To facilitate a well-informed dialogue and broad range of proposals, we seek to bring together a room of people who can consider the question of 'What can Enterprise Education (EE) do about planetary sustainability?' from many different viewpoints (this question is inspired by the recent inclusion of 'planetary sustainability' as a priority in the research themes of EEUK).

Therefore, this workshop is appropriate for either anyone who is involved - or interested - in enterprise and business education and support, and for anyone who is concerned about climate change and the social and economic transformations required for sustainable development, and how this can be supported and accelerated through higher education.

In addition, other local and regional stakeholders such as those with experience in: environmental and social enterprise and community action; sustainable business development and innovation; de-carbonisation, green and bio-economy; green careers and green entrepreneurship and related education, or other interested stakeholders are invited to contribute to this process.

The workshop - the briefing and the OPERA method - is designed to be adaptable and transferable to other contexts, therefore, sustainability-interested educators from any discipline or setting will benefit from joining the session to consider how they can replicate this activity in other contexts in order to bring more students, educators and regional stakeholders into dialogue - and action - on these important issues.

Programme:

12.30 - 1pm - Arrival, lunch, information sharing activity

1.00 - 1.20pm - Welcome and aims

1.20 - 1.45pm - Briefing on the climate and ecological context

1.45pm - 2pm - Break

2.00 to 3pm - OPERA - participatory decision-making process

3pm - 3.30pm - Next steps - actions and interest

University of Huddersfield: https://www.eventbrite.co.uk/e/enterprise-education-and-planetary-sustainability-what-can-ee-do-tickets-439096087217

University of Liverpool: https://www.eventbrite.co.uk/e/enterprise-education-and-planetary-sustainability-what-can-ee-do-tickets-438708217087

7.2 Example background information

The following information was sent out to delegates prior to the workshop in case they wanted to familiarise themselves with enterprise education and support provision which was in place.

Hi there,

I hope this finds you well. I'm getting in touch because you've signed up to the event 'Enterprise Education and Planetary Sustainability - what can EE do?

This is just some information prior to the event.

1. The event is part of a research project so, tomorrow, we will ask for consent to use artefacts produced in the session to create a toolkit and research outputs. I attach an information sheet about the research project and a consent form for information. *Consent is voluntary and we will have forms at the session for you to complete if you are happy to do so*. If you have any questions about this, please don't hesitate to email me, or call on number below.

2. The workshop is about how enterprise education can/should change in light of the climate crisis and so I am sharing some information about what enterprise and entrepreneurship education for anyone interested curious about the concepts before the session. I provide links to the Enterprise Support section of the University's website so you can scan provision as it is now, should you have time/inclination - but do not worry if you don't, it is not required for the session.

In Guidance for Higher Education Providers (QAA, 2018), the following definitions are provided:

Enterprise is defined as: "the generation and application of ideas, which are set within practical situations during a project or undertaking. This is a generic concept that can be applied across all areas of education and professional life. It combines creativity, originality, initiative, idea generation, design thinking, adaptability and reflexivity with problem identification, problem solving, innovation, expression, communication and practical action."

Entrepreneurship is defined as: "the application of enterprise behaviours, attributes and competencies into the creation of cultural, social or economic value. This can, but does not exclusively, lead to venture creation. Entrepreneurship applies to both individuals and groups (teams or organisations), and it refers to value creation in the private, public and third sectors, and in any hybrid combination of the three."

Enterprise Support encompasses the various activities (training, events, bootcamps, 121 advice, grant funding, support to enter competitions and seek investment), which support students and graduates to start businesses and freelance opportunities or some other venture such as a social enterprise.

Enterprise Education and Support at the University of Huddersfield: At the University of Huddersfield there is an Enterprise Team which comprises: the Head of Enterprise and Entrepreneurship, an Enterprise Hub Manager, two part time Business Advisors and a Curriculum Lead for Enterprise Education. For an overview see: https://students.hud.ac.uk/opportunities/enterprise/

The Enterprise Team is based in the 3MBIC, and offers hot desking space and meeting/event area. See: https://students.hud.ac.uk/opportunities/enterprise/enterprise-hub/
The team delivers activity outside the curriculum such as workshops, events and bootcamps. See what's on: https://students.hud.ac.uk/opportunities/enterprise/workshops/
The team provides support for academics to develop this elements of their practice. See: https://students.hud.ac.uk/opportunities/enterprise/academicsupport/

That's a flavour of what we do (at the moment).

I look forward to meeting you at the session. Or, if you are unable to join, please do let us know.

Sincere thanks for your interest.
Signed by, etc.

7.3 Dissemination events
As part of this project we held an event two dissemination events, slides and summaries are here:

7.3.1 Climate Action for Enterprise Educators
Summary and slides available at: https://www.enterprise.ac.uk/events/climate-action-for-ent-educators/

7.3.2 Climate Tipping Points and Social Tipping Points
Summary and slides available at: https://www.enterprise.ac.uk/events/climate-tipping-points-and-social-tipping-points/

7.4 Frameworks, tools and practice

This list of existing tools, frameworks and practice was collated from EEUK members attending dissemination events:

7.4.1 Reports and frameworks
Our Common Future *(Bruntland Report) can be found here:
https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

Latest report on UN SG https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf

Students Organising for Sustainability: https://www.sos-uk.org/ and Responsible Futures - https://www.sos-uk.org/project/responsible-futures

Climate governance, UNICEF, https://www.unicef.org/lac/en/reports/what-climate-governance

Advance HE/QAA guidance on ESD https://www.advance-he.ac.uk/knowledge-hub/education-sustainable-development-guidance and about Green Comp: https://joint-research-centre.ec.europa.eu/greencomp-european-sustainability-competence-framework_en

EEUK Guide to exploring EntreComp with GreenComp
https://www.dropbox.com/s/njry4s1sog06p5y/Green%20Comp%2C%20EntreComp%20and%20the%20QAA%2022%20Which%20Way%20Now%20Price%20and%20Penaluna.pdf?dl=0

7.4.2 Examples from practice (activities, frameworks, cases, tools)
CIPD resources on PESTLE analysis https://www.cipd.co.uk/knowledge/strategy/organisational-development/pestle-analysis-factsheet#gref

Creating fit for the future business models - https://flourishingbusiness.org/ Flourishing Business Model Canvas - https://flourishingbusiness.org/download-flourishing-business-canvas/

Triple Layered Canvas - https://sustainablebusinessmodel.org/2015/04/17/the-triple-layered-business-model-canvas-a-tool-to-design-more-sustainable-business-models/

Life Cycle Analysis - https://en.wikipedia.org/wiki/Life-cycle_assessment and https://ecochain.com/knowledge/life-cycle-assessment-lca-guide/ and https://www.sciencedirect.com/topics/earth-and-planetary-sciences/life-cycle-assessment

B-Corp framework and standards - https://www.bcorporation.net/en-us/standards

Using overshoot concept to explore responsibilities of business: https://www.overshootday.org/

Exploring what 'got us here', understanding history to change the present and future:
https://en.wikipedia.org/wiki/The_Nutmeg%27s_Curse

Climate artist https://www.harmanprojects.com/artists/582-louis-%22masai%22-michel/

Bio-materials start-up: https://www.uncommon-alchemy.co.uk/ which called for more complexity and systems thinking education, as advised here also: https://uucn.ac.uk/wp-content/uploads/2022/07/Mainstreaming-Climate-Change-Education.pdf

UWE climate action hub: https://www.uwe.ac.uk/research/centres-and-groups/scu/projects/climate-action-hub

Developing action based stories/approaches that build agency: https://iopscience.iop.org/article/10.1088/1748-9326/abcd5a/pdf

Sustainability analytics tools for practitioners: https://www.springerprofessional.de/en/sustainability-analytics-toolkit-for-practitioners/23878902

8. Using and citing this toolkit

This toolkit was developed as part of an Enterprise Educator's UK EERPF (Enterprise Education and Research Project Fund).

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