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*Article*

# Practices, Drivers and Barriers of an Emerging Regenerative Higher Education in Europe – A Podcast-Based Inquiry

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**Highlights:**

- There are seven design practices that are emerging in higher educational practices across Western Europe to connect Universities with local transition challenges for more regenerative sustainable futures.
- The Regenerative Higher Education Design Practices Tool has the potential to be used to (re)design education to connect with sustainability transitions.
- Podcasting could be used as a form of qualitative inquiry within sustainability- and educational sciences.

**Abstract:** Universities have the potential, and the responsibility, to take on more ecological and relational approaches to facilitating learning-based change in times of interconnected socio- ecological crises. Signs for a transition towards these more regenerative approaches of higher education (RHE) that include more place-based, ecological, and relational, ways of educating can already be found in niches across Europe (see for example the proliferation of education-based living labs, field labs, challenge labs). In this paper, the results of a podcast-based inquiry into the design practices and barriers of enacting such forms of RHE are shown. This study revealed seven educational practices that occurred across the innovation niches. It is important to note these practices are enacted in different ways, or are locally nested in unique expressions, For example, while the 'practice' of *Cultivating Personal Transformations* was represented across the included cases, the way these transformations were cultivated were unique expressions of each context. These RHE-design practices are derived from twenty-six narrative-based podcasts as interviews recorded in the April through June 2021 period. The resulting podcast (The Regenerative Education Podcast) was published on all major streaming platforms from October 2021 and included 21 participants active in Dutch Universities, 1 in Sweden, 1 in Germany, 1 in France, and 3 primarily online. Each episode engages with a leading practitioner, professor, teacher, and/or activist that is trying to connect their educational practice to making the world a more equitable, sustainable, and regenerative place. The episodes ranged from 30 to 70 minutes in total length and included both English (14) and Dutch (12) interviews. These episodes were analyzed through transition mapping a method based on story analysis and transition design. The results include seven design practices such as *Cultivating Personal Transformations*, *Nurturing Ecosystems of Support*, and *Tackling Relevant and Urgent Transition Challenges*, as well as a preliminary design tool that educational teams can use together with students and local agents in (re)designing their own RHE to connect their educational praxis with transition challenges.

**Keywords:** regenerative higher education; podcasting as qualitative inquiry; ecological university; sustainability transitions; regenerative education practices; regenerative education design

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## 1. Introduction

The severity of the climate crisis, as well as crises related to social (in)justice and loss of biodiversity, is undeniable (Servant-Miklos, 2021; IPCC, 2021; Kopnina, 2020). It is becoming clearer that even reaching the Paris accords of 1.5c global warming is increasingly unlikely, which poses a severe long-term threat for planetary life to thrive. To prevent this systemic failure, we must transition towards more sustainability-oriented futures where eco-social systems are designed to balance human activity and natural ecosystem integrity (Wals, 2019; Raworth, 2018; Wahl, 2016). In other words, we must transform towards more sustainable realities. These sustainability transitions (STs) consist of multi-level large scale transformations of society, typically over long timescales. The need for STs has led to the emergence of transition studies (Wittmayer et al., 2021; Geels, 2002), as well as related fields such as transition design (Irwin, 2018). STs typically challenge, disrupt, and ultimately replace previous paradigms. To restore the human presence on Earth, this involves a transition towards a regenerative sustainability (Wahl, 2016; Reed, 2007; Lyle, 1996), a sustainability that actively aims to restore or heal a damaged world and allow it to evolve and thrive (Iyer et al., 2021; Mang & Haggard, 2016).

Universities have increasingly engaged in scholarship about transitions, see for example the flourishing literature on transitions of all kinds such as a transition towards a circular society (Klomp & Oosterwaal, 2021; Poldner, 2020; Raworth, 2018), a society powered by renewable energy (Chen et al., 2019), transitions in fashion (Bertola, 2021; Mishra et al., 2020), foods (Wigboldus, 2020), and health (Pereno & Eriksson, 2020). The importance of learning as a catalyst for change in transitions is frequently mentioned (e.g., Beers et al., 2016; Geels, 2005), but has largely remained outside the field of educational sciences. In other words, the transitional gaze of higher education itself - one that challenges the underlying assumptions, values, dynamics, structures, and perspectives from which long-term systemic unsustainability emerges - remains largely unexplored in the context of educational practice. Of course, there are exceptions, a notable one being the whole-school approach to sustainability (Wals, 2019b; Henderson & Tilbury, 2004).

The call for universities to engage with STs, as well as sustainability more generally, are increasing in practice (e.g., Wittmayer et al., 2021). We propose that a university that takes sustainability transitions seriously, ought to include an epistemological gaze on her own approaches to educating (Van den Berg et al., 2021a). This ought to include a rethinking, and more importantly, a redoing, of educational structures, practices, and policies inspired by a regenerative perspective (e.g., Wittmayer et al., 2021; Wals, 2019). Few, if any, universities have fully embraced such an internal transitional gaze. As a result, there is little clarity about what such educational transitions could entail. It is our contention that this is one of the reasons that sustainability in higher education remains locked at innovation niches. In this study, we interview 27 emerging and experiences scholar-practitioners who are rethinking and redoing their educational practices to connect with STs in the places near and within their universities with the intention of actively participating in making more sustainable futures a reality. The authors mirror their ideas to the concept of Regenerative Higher Education (RHE) (e.g., Armon, 2021; Sonetti, Brown & Naboni, 2019) which at its core aims to connect university education with transition challenges in ways that are conducive to personal and planetary health, where learning is oriented towards redirecting systems that are transgressive of socio-ecological boundaries (Lopes Cardozo, 2022; Van den Berg, 2022). Through the use of transition mapping, we engage with these emerging experiences from a transitional lens, highlighting leverage points and places within higher education that systemic change towards a more regenerative sustainability can be realized. The main research questions are as follows:

1. What are the design practices of educators actively moving towards RHE in (Western) Europe that connect with STs?
2. What systemic barriers and drivers are experienced when engaging with these practices?

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3. What personal barriers and drivers are experienced when engaging with these practices?

*1.1. The Emerging Transition towards RHE*

Our study is grounded in the idea of RHE, which we consider to be an ecological approach to education that connects with sustainability transitions locally with the intention of contributing towards more sustainable futures and helps prepare students to navigate the complexities in contributing such futures (Van den Berg et al., in review; 2021b). This puts the focus of RHE within the discourse on the ecological university as an entangled part of society with a clear moral responsibility to contribute to healing human relationships with each other and the environment (Barnett, 2017; Barnett & Jackson, 2019; Van den Berg et al., 2021a). RHE does this by designing and enacting education with the aim of engaging students in healing ways with STs (Lotz-Sisitka et al., 2015; Wals, 2015; UNESCO, 2021) where healing is seen from a salutogenic perspective (Wahl, 2006) in the (re)creation of the conditions conducive to generating more resilient futures that can unfold within the carrying capacity of the Earth.

RHE leaves from the following assumptions: (1) that STs and realizing more sustainable realities is required, (2) that higher education can play a role in facilitating these futures to become reality and (3) that there is educational value in doing so[1]. These assumptions are in line with scholarship in the field of philosophy of education in for example the latest works of Biesta (2021) and Barnett (2018). As well as calls from leading scholars in sustainability and higher education for transformative change like Schlaile et al. (2021). We suggest that such engagement could result in further qualification, subjectification, and socialisation towards more life-affirming self-realization (Biesta, 2021) and also make universities more meaningful for a healthy planet (Wittmayer et al, 2021; Verhoef et al., 2019). From this ecological perspective, universities could act as a form of societal virtual reality (Braidotti, 2019b) or as a societal playground to learn from alternative futures to inform our actions today. In practice, this emerging approach is done by connecting to local communities outside of the university, often in the form of (living) lab-based approaches to education (Overdiek & Geerts, 2021; Van den Heuvel et al., 2021; Holmberg & Larsson, 2018). Within these ecological constellations, participatory approaches with the intent of creating intentional change, such as systemic co-design (Garcia & Gaziulusoy, 2021) or transgressive action research (Macintyre, 2019) are generally used. To do so, however, requires moving towards seeing the profound wealth of the place in which the university is embedded as a rich basis for the curriculum (Orr; 2002). It is not at all clear that universities could fulfill such a role. See for example Wals (2019) or Orr (2002). This is a challenge to some, who believe that education can be somehow neutral, or ought to be limited to not 'being activistic' (Wals, 2019) or '*on the quaint belief that what occurs in educational institutions must be uncontaminated by contact with the affairs of the world and that we have no business objecting to how that world does its business'* (Orr, 2002; 150).

Universities are already ecologically entangled. What may change by embracing RHE, is that the normativity of regeneration results in entanglements that may not always be perceived as positive by dominant power structure. As there may be conflicting interests across generations and or species and part of the purpose of the ecological universities could precisely be to make those tensions explicit. To press where it hurts to incite transgression in the broader innovation ecosystem, can be considered an (educational) act of service towards such sustainable futures.

From this, 'pressing where it hurts perspective,' that is part of the core for RHE, we follow Macintyre's (2019) arguments that the educational task for RHE is more akin to a gardener that tends to and cares for (designs and enacts) the conditions conducive for learners to flourish. Previously, we have started building a cartography based on literature of educational design qualities for a regenerative education (Van den Berg et al., In

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Review), however, a lack of empirical validation remained. With this study, we aim to contribute to this empirical gap in the literature by exploring how nascent and emerging forms of RHE are already being enacted in practice. While not all of the interviewees explicitely identify with RHE already, it is our contention that each of the cases has the potential to become RHE. The interviewees expressed a commitment towards engaging with education as healing (albeit at different system' levels). Through the engagement with their experiences from a transitional lens inspired by a RHE reading much can be learned for the future design and systemic changes required for RHE through engagement with these emerging innovation niches.

## 2. Methods

### *2.1. Podcasting as Qualitative Inquiry*

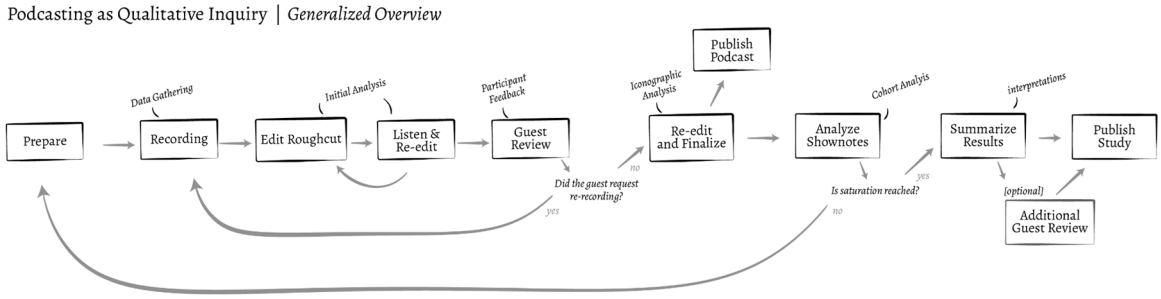


**Figure 1.** Schematic representation of podcasting as qualitative inquiry.

Podcasts have been increasing in popularity for a number of decades now and this popularity is projected to increase further by up to 25–30% annually (Deloitte, 2020). Inspired by this popularity, the potential of podcasts as a method, particularly in ethnographic research, has been explored by a variety of scholars (e.g., Lundstrom & Lundstrom, 2020; Cook, 2020; Ractham & Zhang, 2006). Reasons for these explorations includes: (1) increased accessibility of research (Singer, 2019; Day et al., 2017), (2) inclusion of more non-formal data (sub)cultures (Lundstrom & Lundstrom, 2020), (3) and as a geographic research tool (Kinkaid et al., 2019). A relatively large subset of podcast-based research includes the usage of podcasts *as pedagogical-didactical tools* (e.g., Celaya et al., 2020; Drew, 2017). These uses of podcast-based inquiry have so far been partial (e.g., using existing podcasts as data or creating podcasts as an output of research). Podcast-based inquiry (see fig 1) with the intention of simultaneously gathering data *and* creating output was not identified in the literature.

To engage with podcasting as a form of data *and* output generation, we follow the perspective posited by Fronek et al., (2016) that podcasting sits '*in-between entertainment and education*' and move beyond that to argue that podcasting, as a creative research method (see Kara, 2020), holds the potential to blur the lines or be in the in-between space of data, research, entertainment, communication, *and* education. As such, podcasting could be used throughout the research process including for data gathering, analysis, and as an accessible form of output for (public) engagement. The use of podcast-based inquiry also proposes several unique benefits for participants (called guests from now on), as it gives them a platform to share their experiences and stories of their alternative practices and perspectives on higher education, and in doing so creating a digital artifact that can be available for use (e.g., didactically, for tenure/promotion, or to share their vision) in perpetuity. To do this, it is however important to engage with the process in a co-constructed manner, seeing the method more as a conversation in which information is co-created instead of extracted (Kara, 2020; Kvale, 1996). This co-constructed perspective aligns with the relational paradigm of sustainability that also informs RHE (Walsh et al., 2020; West et al., 2020) and was highlighted by numerous guests during or after the

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recording as a sense of reciprocity. For example, one guest posited that their experience felt more like a genuine conversation than previous interviews. Therefore podcast were considered suitable for studying RHE practices and its main drivers and barriers.

*2.2. Research Context & Recruitment*

This study used purposive sampling with the following selection criteria: (1) guests had to be practitioners in higher education who in the last three years had been involved with connecting their educational practice with a transition challenge in their region with the intention of facilitating learning-based change towards more (regenerative) sustainable futures. (2) In addition, these activities had to be in the European Union to ensure relative comparability. The first round of invitees was recruited from existing networks of the authors. Each of the guests was also asked to recommend one or two others based on the selection criteria. Finally, an open invite, including the selection criteria, was shared on the LinkedIn profiles of the researchers. This resulted in a total of 52 invitees, of which 31 agreed to participate and a final 27 episodes have been produced and published as The Regenerative Education Podcast on all major streaming platforms[2]. These interviews were recorded in April through June 2021 and published in the period from August until October 2021[3]. The recording and editing have been performed by the first author and the 27-episode podcast features 21 guests active in Dutch Universities (of Applied Sciences), 1 in Sweden, 1 in Germany, 1 in France, and 3 who connect with different locations. Of these latter three, two worked for digital-only universities and one works across several educational institutions. However, in their educational practice, these participants connect strongly with a local place. For this study, we did not limit this connecting to places that were necessarily geographically close to the university involved, but rather education that bound itself a particular locality. The episodes ranged from thirty to seventy minutes in total length and included both English (14) and Dutch (12) interviews. A semi-structured interview guide was created that served as the basis for each episode, this guide was shared with each guest a week in advance in line with podcasting best practices. The guide followed roughly a four part structure: 1) the journey to now, 2) the educational innovation 3) resistances and drivers and 4) futures. The episode guide can be found in the appendix to this paper. The resulting episodes are minimally edited, only specific requests for changes or removal from the guests were performed outside of general audio-quality improvement work like removing background noise, and the time of the episode is representative of the conversation. As all of the authors are native speakers of Dutch, the analysis has been performed in the language of the episodes, and only direct quotes used in the results have been translated to English. The study resulted in a total of 19.4 hours of audio materials with an average runtime of 00:44:65 per episode. An overview of the episodes can be seen below in figure 2. Each of the participants was asked to describe their vision of a preferred future through a metaphor, which served as the basis for the figure 2 below as well as for communicative purposes in the sharing of the podcast.

[2] A few of the guests who had originally agreed to participate had to drop out for a variety of reasons. After launch, other potential guests have asked if they could participate in the podcast.

[3] Because of the unfolding COVID-19 pandemic, considerable flexibility in recording conditions was required. This resulted in a combination of technologies being used for the interviews.

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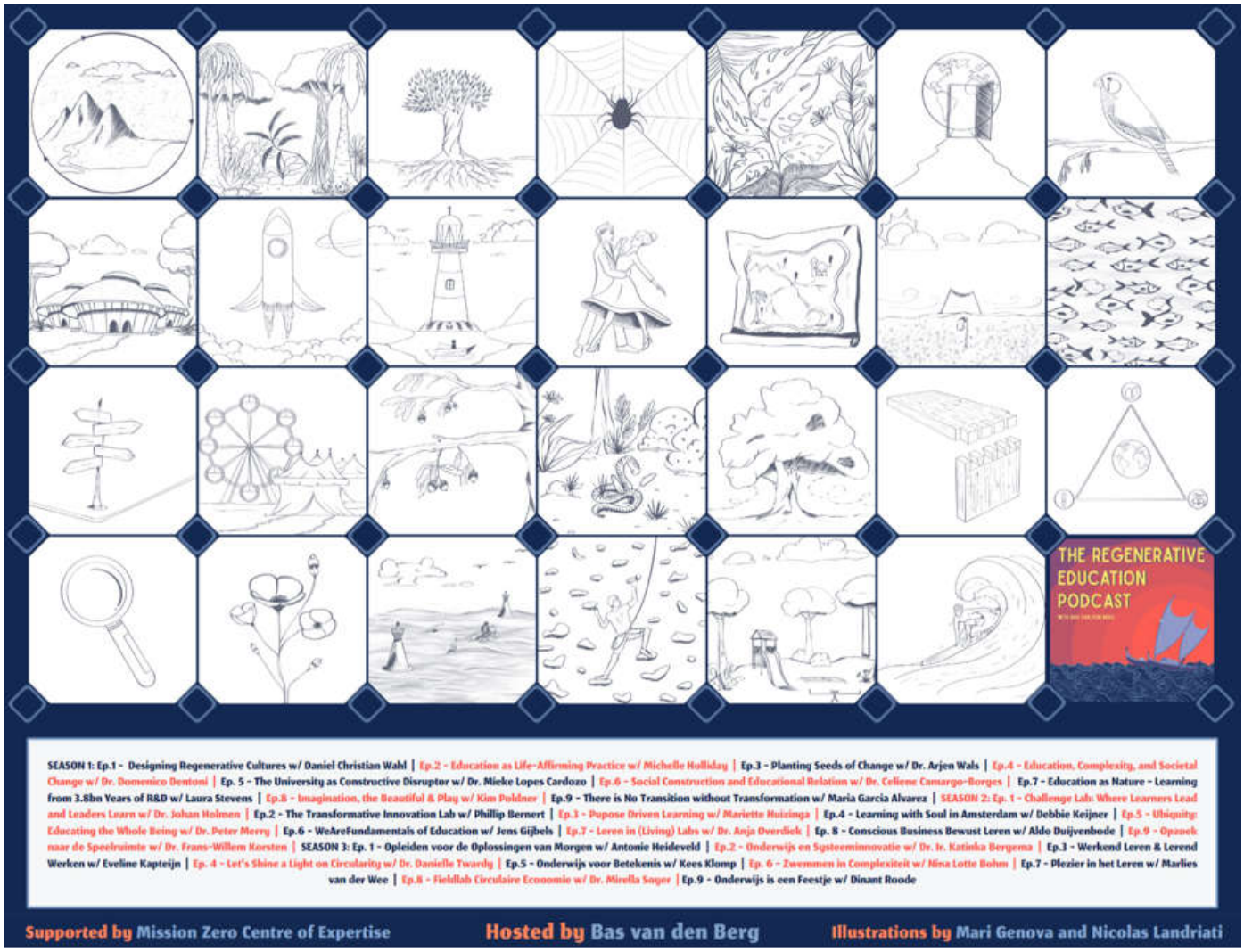


**Figure 2.** Overview of The Regenerative Education Podcast, extended visual overviews can be found in appendixes B-D.

### *2.3. Participants*

The participants in the course were educators involved with, or invited to participate, with formal higher education in Europe. They were designers and or teachers with designing responsibilities of the courses that connect with local transition challenges with the intention of acting upon these challenges towards more sustainable futures. They had at least two years of experience in co-designing and teaching such courses. The focus of these interventions were not limited to specific transitions and ranged from circular economy, food through renewable energy. The majority of the participants had PhDs and those who did not are working towards one. Because of the variety of contexts and transitions included, the variety of the backgrounds of the participants was quite large including art, engineering, and business educators.

### *2.4. Technology used*

For the recording, SoundTrap, Zoom or the dedicated podcasting studio facilities at The Hague University of Applied Sciences was used depending on the distance and availability of the guest as well as the COVID-19 regulations in The Netherlands during that period. No significant differences were experienced by the host (main author) in the episodes or conversations based on the different recording technologies used or between in person and distance interviews. For editing, Soundtrap and Audacity were used (e.g., background noise reduction, filler word removal, structured according to podcast

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structure and the addition of intro's/outro's and music). Buzzsprout serves as podcast host and pushes the episode to Spotify, Google, and Apple podcasts, the three main podcast hosts by popularity. After several months of digital working due to the ongoing COVID-19 pandemic, none of the guests showed difficulty with the use of the technological platforms or unease to share their thoughts through these technological media.

*2.5. Ethical Challenges*

The podcasting-as-inquiry approach represents a particular ethical challenge in anonymization. While there is critique against the ability of interviews to be truly anonymous in the first place (e.g., Saunders, Kitzinger & Kitzinger, 2015), anonymization was impossible as the voice of the guest is audible in each podcast episode. It is technically possible to distort voices to be unrecognizable, however, many of the guests indicated they participated partially because of the win-win that the exposure of this method creates. I.e., they participated precisely because it was not anonymous. This also implies that podcasting as a form of qualitative inquiry is most fitting for projects where people want to engage in public debate about that topic. This could lend podcasting primarily to contentious topics. To navigate this ethical challenge, written informed consent for participation, including the publication of names on the platforms was secured. To do so, descriptions of the (ethical) risks for participation were shared in the invitation to participate in the study. In line with recommendations for arts- and creative based research, a process approach to a relational ethics of care guided this inquiry (Kara, 2020). This included re-asking consent multiple times throughout the research process, including at the start of recordings and after the rough cuts were sent for review, and sharing a draft of this paper for review by the participants. The recordings are saved and processed in accordance with the Wageningen University & Research guidelines on data management, which take all relevant Dutch and EU legislation into account.

*2.6. Analysis*

The analysis of the final episodes was done through a transition mapping (Van den Berg et al., 2021b). This approach draws from transition design (Irwin, 2018; 2015) with an applied narrative (Moenander, 2018) focus and utilizes abductive analysis to identify relational patterns across the twenty-six collected stories (Tavory & Timmermans, 2012). To find these patterns, each of the episodes is mapped on a transition map, with a time- and system level axis. This mapping is done in two rounds of coding, first, the verbatim elements from each story are mapped, before interpretations are added. During these rounds of coding, the research questions and RHE reading guided the process. These coded maps are then clustered and combined into a meta-narrative of transition map that combines the insights from each of the separate stories to identify and cluster relational themes. The final step of this analysis includes identifying possible relationships between the clusters and story elements of the participants. These relational themes were then translated through several rounds of internal review across the authors into the set of seven practices and design tools that are presented in the subsequent section. The final step of this analysis included a sharing of the draft version of this paper with the participants of the study for a period of two-weeks for review and commentary before submission.

**3. Results**

Our analysis revealed seven regenerative education design practices that our participants seem to advocate and enact. Due to the richness and narrative availability of the dataset, as well as pragmatic limitations in word count, the choice was made to present the majority of results in the form of a table presented here below in table 1. In this table, you will find the design practices to consider when (re)designing RHE as well as drivers and barriers that must be navigated when doing so. By considering these different elements you as an educator may be able to transform your practice and secure the (institional) support required to do so. Furthermore, , these results have also been

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transformed into a design tool for practitioners to (re)design their own RHE that connects with STs. Finally, the barriers and drivers identified are presented in 3.2 (systemically) and 3.3 (personally). Together, sections 3.1-3.3 engage with the research questions presented in the introduction.

**Table 1.** Overview of the Regenerative Education Practices, the main barriers, opportunities, and design questions that could be used to inform (re)design. The 'you' in the table refers to educators. The practices can also be considered 'principles' to engage with when engaging with RHE.

| Regenerative Education Design Practices | Description | Main Barriers & Challenges | Main Opportunities & Drivers | Design Questions | Indicative Quote(s) |
|---|---|---|---|---|---|
| Tackling Relevant and Urgent Transition Challenges | Ensuring that the societal transition challenges that are chosen are part of learner's reality. | A disconnection between institutional reality and larger societal challenges.<br><br>The unpredictability of complex wicked problems and assessment.<br><br>The educational practice of planning a year (or two) ahead which limits flexibility. | Potential to create positive change, link HE to society and subjective well-being.<br><br>An ongoing change in funding bodies to a focus on more impact than bibliometrics.<br><br>The emerging movement within universities and for educators to rethink their role in society. | Which societal challenges incite intrinsic motivation, or energy, for learners to engage with acting upon?<br><br>What transition challenges are particularly impactful in a local place you can connect with?<br><br>How can you continuously invite critical external stakeholders into this educational experience? | *'**It** starts by giving space for students to express their own concerns, but also their curiosity and to use what I call existential questions and challenges as a starting point for learning.'*<br><br>*'We always need something that is urgent and relevant, so it needs to be important, and it needs to be important now.'* |
| Embedding Locally with Systemic Awareness | Connecting your activities purposively with your local communities in place facing those challenges. | The time it takes to build and maintain a local community, as well as lacking finance and positions within HE cultures for such activities.<br><br>The fragility of trust within such communities.<br><br>The openness required to engage with such work and the frustrations that come from multi-stakeholder collaboration. | The interest in the creation of highly situated and contextualized knowledge relevant to your own reality.<br><br>The chance to connect community-engagement as part of your professional practice.<br><br>The chance to enlarge your own professional network and ability in doing so. | What local communities who are already interested or involved with the transition challenge can you strengthen with your educational practice?<br><br>What are the multi-level forces acting the strongest on the perpetuation of this unsustainable system?<br><br>How can you use the richness of the world all around you as places of meaningful learning? | *'I kind of hope that something… that this way of working in partnership with other partners. That…That… is carried more warmly within the universities. I don't mean it in the way that I think that this form of education 'is the future' or that it replaces all other forms of education. But that it offers universities something… a possibility… to work more with society on grand challenges. Together with students, and in this case with people in the city but that could also be other places.'* |
| Nurturing Supportive Innovation Ecosystems | Creating a supportive innovation within | The culture of HE and agents that co-constitutes that culture such as accreditation | The potential to participate in the (re)definition of higher education and | Who are the key internal stakeholders that are positive towards RHE and | *'Right. So we're all very much restrained in the current system. Well, aside from the fact that I* |

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| | your practice/institution. | boards, administrators, exam boards, curricula committees to stop more regenerative forms of education.<br><br>The lack of space within educational design slower forms of inquiry.<br><br>The history of students who have been shaped by the educational culture that imparts a consumerist approach to learning. | the relationship between the university and society.<br><br>Emerging educational technologies that facilitate more ecological forms of education to flourish (particularly digital technologies that allow broader communities to be included).<br><br>The call from more societal and political actors for universities to take an action role in local knowledge development. | how could these be invited to contribute to the co-emergence of this RHE?<br><br>What are the limiting forces within the (educational) innovation ecosystem (e.g., administrators, colleagues, student's backgrounds, policy) that must be navigated?<br><br>How can you strategically create evidence, impact, or excitement, and in what media, for this form of education to continue and spread? | *find that really sad. I think there are cracks...you know, so I think it also has to do with a mindset and an attitude of trying to see the positive within the restraints that are currently there. So can you how far can you go? How how much can you do things different? In what way do you get support from your leaders to do it that way? In what way can you gain visibility for that?'* |
| Cultivating Personal Transformations | Including the inner- or personal dimension of sustainability, or even regeneration, into your educational activities. Bringing your whole self and inviting learners to be psycho-spiritually and socio-emotionally vulnerable with both positive and negative emotions. | A fear, or lack of experience, of engaging with the psychological-spiritual and/or socio-emotional dimensions of learning.<br><br>The strictness of assessment as 'objective' measures of learning.<br><br>An underdeveloped ability to engage with the vulnerability that uncertainty for prolonged amounts of time brings. | The potential to influence the deepest leverage points for systemic change (those within us such as our values, perspectives, and worldviews).<br><br>A more meaningful experience as an educator, including space for personal transformations for you. I.e. changing the world also changes us as people and by changing ourselves we change the world.<br><br>The opportunity to engage with creative pedagogy-didactics such as arts-based approaches. | How are you including the inner dimensions of sustainability in a safe and meaningful way throughout the course?<br><br>Where can you press so that it hurts just enough to trigger transformations?<br><br>How should you meaningfully assess this inner sustainability work? | *'We have a motto… 'to think big and to act now'. And in that action, we want to fail fast and then we also want to learn fast. So when we work with sustainability as a lighthouse that provides the direction of where we want to go and why. And then you realize that navigating sustainability transitions, it is a bit about going into uncharted water, uncharted terrain. And you may have a lighthouse, but you have no idea what the waters look like on the way.'* |
| Holding Healing Spaces | The importance of hosting spaces needed for deeper engagement that may nurture a sense of safety for transgressive dimensions of learning. | Not establishing, or disrupting, the safety within the educational context for learners to engage with the personal dimension above.<br><br>A personal immaturity to acknowledge when | Freedom to engage with the richness of a place (e.g., forests, specific buildings, café's etc.) as educational spaces within your practice. | Which actors, and expertise's, do you need to invite into this education to nurture healing spaces?<br><br>How can you nurture a sense of safety in any surrounding | *'You can only feel the spear in the chest if you are willing to catch it. That's the tricky thing of the spear-in-the-chest. You can throw them! But if no one is willing to catch them they don't arrive and you don't get the vulnerability, the* |

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| | | professional help for this hosting is required.<br><br>A financial limitation in the type or amount of support that can be offered for this hosting. | The creation of a sense of community, within and beyond the course.<br><br>The possibility to practice your own ability of hosting safe spaces for transdisciplinary learning. | when doing so?<br><br>How are you inviting a sense of slowness into the education to focus on meaningful challenges and transformations? | *crack, the chink in the armor that is needed to help people transform beyond something. So we really focus in our education on nurturing people's willingness to catch the spears that we throw.'* |
| Shaping Affirmative Imaginaries | Critically tackling systemic barriers and crafting more regenerative futures. | The lack of systemic and futures-oriented ability for teachers and within educational programmes.<br><br>Tensions of having to be part of existing systems and maintaining relationships between them while disrupting them for alternative futures.<br><br>The difficulty of acting on societal challenges within the timescale and from the position of HE. | Personal satisfaction in working towards a more equitable, sustainable, and just society.<br><br>A chance to contribute to knowledge development and practice of global challenges within your own locale.<br><br>The possibility of challenging even your own perspectives and futures, and the rich learning that can be had from that. | How can you challenge destructive mental models, values, worldviews and practices in ways that are tangible, experiential, and incite an emotional response?<br><br>What are the potential leverage points to intervene in the innovation ecosystem to realize those futures?<br><br>How can you create rewarding systems for students to engage in critically-creative actions, including protecting them when they offend or transgress status quo? | *'Because ultimately the message that we try to bring in our education…is that it's the daily action of connecting others or connecting pieces of knowledge that were previously disconnected that can make an impact…an actionable impact on an everyday basis on the problem that you're interested to address. So that's the action part... to act because the underlying assumption being we have short time to know, pretty much left on on Earth, and we've got to act now more than ever'* |
| Openness for Emergence | Being receptive for adaptation to the educational approach, structure, and design, as the course unfolds. | Receiving approval from the appropriate boards to engage with such an open attitude towards educational co-design.<br><br>Dominant views of what may be considered 'good' education.<br><br>A lack of epistemic and ontological humility that disrupts the educator from the role of expert to the role of co-designer. | An opportunity to learn more about 'education' and your role in it through such an open approach.<br><br>A (strong) intrinsic motivation to link your educational practice with tackling systemic challenges.<br><br>The possibility of learning more about the transition challenges by engaging with this work. | How much of your RHE can be left open for co-design?<br><br>Who are you involving, and who are you not involving in the design and enactment of your RHE?<br><br>What are the non-negotiables and why are they so in your RHE design? | *'I think that trust is definitely a big one and it's not easy. I sometimes literally feel my heart race when I come up with ideas of letting go of parts of control and keeping half of my curriculum open and undesigned when going into a course handing over the design of a final roleplay assignment in my master course into the hands of three or four students, which will completely design the final assessment and evaluation, including the form together with me. But it's really in their* |

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*hands. And letting go of that control is… it's a leap of faith every time again.'*

### *3.1. The Regenerative Education Design Practices Tool (REDPT)*

The preliminary REDPT presented below (fig 3) can be used, together with table 1 by practitioners to (re)design their own RHE. This preliminary tool emerged through several rounds of iterations on paper conducted by the main author. The practices to consider as an educator form the outer ring of the REDPT while the different design questions that may help you in engaging with this design practice can be found in the tool. The design tool has been inspired from other examples of design-based templates and tools such as the Business Model Canvas (Osterwalder et al., 2010), the triple layered business model canvas (Joyce & Paquin, 2016), the Circular Business Model Innovation Tool (Van den Berg et al., 2020) and the Biomimicry design lens (Biomimicry Institute 3.8). In subsequent work, the authors will work towards validating and further iterating on the REDPT towards a guide for practitioners including a full description of how the final tool and guide have been developed and can be used..

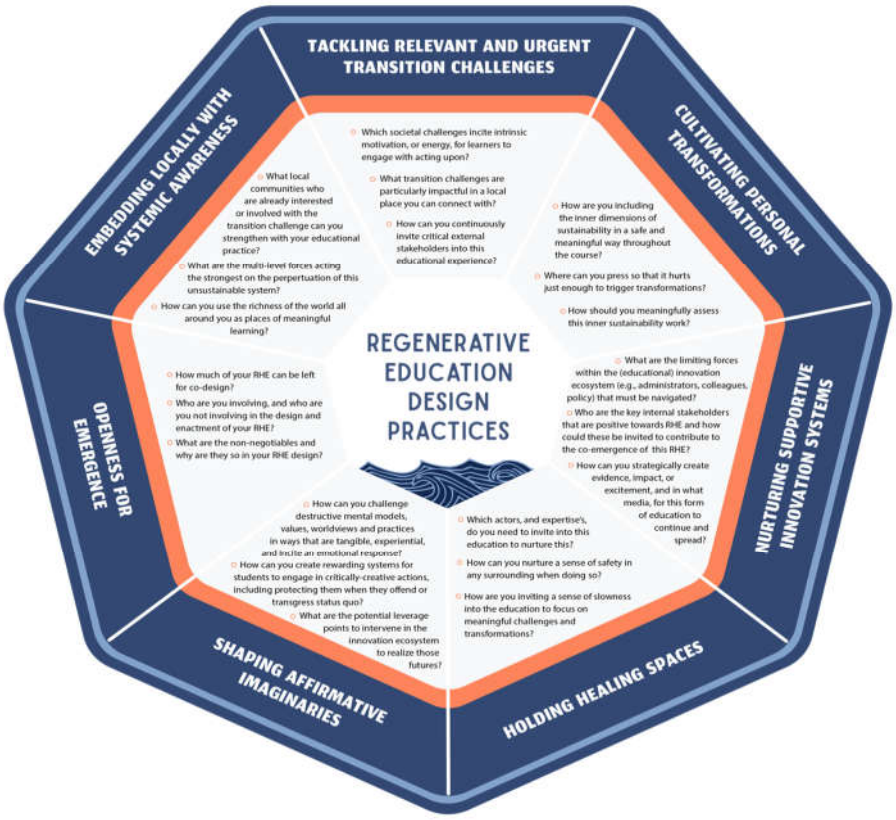


**Figure 3.** The Regenerative Education Design Practices Tool (REDPT), visualized by Nicolas Landriati.

### *3.2(. Systemic) Barriers & Drivers*

The following are the major systemic barriers and drivers identified. A major barrier that emerged from the study was the importance of supportive ecosystems within the university to provide the space and resources (e.g., time, money, and such) required for RHE. In particular, the need for more time for RHE compared to more traditional education and the tension this creates when trying to move towards an alternative system while 'trapped' in the existing one was highlighted strongly by the guests. Few of the guests

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expressed they felt supported enough in engaging with this boundary-crossing endeavor. This is in line with the results of recent reviews by Schlaile et al. (2021) and Weiss et al. (2021) who highlight the lack of top-down support to connect universities with real world challenges. A lack of visible support from the institution was also identified as undermining the success of RHE as students become disassociated when their surroundings in universities that do not (visibly) share an ethos of regenerative sustainability.

The difficulty of navigating university bureaucracy and in particular existing practices of education was also identified as a powerful barrier which aligns with findings in literature by Weiss et al. (2021) and Schlaile et al. (2021). A strong emphasis here was placed on dealing with assessment and the boards and committees that deal with that. It was highlighted that assessment is difficult because of the openness required for ecological forms of higher education that place transition challenges in context as central to educational design (Fenten et al., 2022; De Greef et al., 2021; Van den Berg et al., 2021). As it cannot be predicted how those will unfold, setting intended learning outcomes, still often the basis for higher education in (Western Europe), is contra-productive. A general lack of appropriate ways to judge the different dimensions of learning (such as *learning-as-caring, knowing, feeling, anticipating, transforming, transgressing, being*) that occur in ecological forms of education was also highlighted (Wals, 2019). This includes finding ways to assess other than cognitive learning (see De Greef et al., 2021 for a recent overview of meaningful assessment forms for these other forms of learning).

The importance of choosing and using biophysical spaces, within and outside campus, that are safe for RHE was frequently highlighted, with specific mention made to including natural spaces in the local environment as an active part of the curriculum. The need to actively nurture a sense of safety for the subjective dimensions of learning (spiritual-psychological and socio-emotional), or the personal transformations dimension of working with transitions, was also highlighted, which is in line with scholarship in the psychological literatures (e.g., Ives et al, 2020; Kaufman, 2020). A practical way of creating this safety was found in structural changes to higher education. Namely, creating time for longer and deeper engagement with a particular challenge faced within an RHE context. Examples of these included bootcamps, intense short courses, or even entire semesters. This is supposed to be particularly powerful if learners are helped to dive deeper ('to find the questions behind the question') with this time and if frequent use of non-campus spaces are included. This is in line with recent discoveries in (living) lab-based education that propose that longer term engagement, but also later in the development of a student, primarily in years 3 and beyond of undergraduate programmes, are more appropriate for students to engage with ecological forms of education such as RHE (Sjoer & Hensel, 2021; Van den Heuvel et al., 2021).

### *3.3. Personal Barriers & Drivers*

A large shift in the perspective of the role of 'teacher' was highlighted by the guests. Shifting away from an expert who stands in front of the classroom towards a caring gardener, or steward, that nurtures the fertile soils of regeneration (see also Macintyre, 2019). The proposed shift includes moving away from teachers-as-experts to teachers-as-co-designers of entanglements through which learning-based change can emerge (Sanford, 2020). In the language of transition design, this is a focus on designing alternative systems (Garcia & Gaziulusoy, 2021; Irwin, 2018). The (immense) courage, and the relational risk to which you expose yourself, required to transgress, and keep transgressing, the dominant educational paradigm was also highlighted (Lotz-Sisitka et al., 2015). A professional desire to move towards this alternative role as an educator was identified as.a main driver for (personal) change.towards experimentation with regenerative forms of education.

This transformation in the role of the educator also comes with additional knowledge requirements such as being able to guide the students through the challenging psychological work that is involved in tackling wicked sustainability problems (Fenten et al., 2021;

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Ives et al., 2020; Kaufman, 2020). A strong tension was highlighted by the guests between the need for security and growth (Kaufman, 2020), in the sense that working with STs asks a degree of openness that can be quite uncomfortable for students who are not used to navigating education that embraces such openness (e.g., Van den Heuvel et al., 2021). Many of the guests highlighted feeling tensions between wanting to intervene to make it simpler for the students to reduce frustration and educationally valuing the difficulty they face in navigating RHE. Several of the guests highlighted a sense of personal fulfillment when they were able to help students in navigating these forms of learnings and personal transformations., which made their work subjectively more meaningful. A pragmatic way to navigate this tension that was used was the inclusion of more diverse educational teams, with at least one member having experience with that more psychological dimension of learning. However, doing this requires a supportive ecosystem inside the university, as well as a financial position as an institution to do so.

In general, the importance of embracing the personal dimensions for RHE, which the guests posited is not invited enough in current educational practice, was highlighted. And while there is quite extensive scholarship on eco-social forms of learning (e.g., Barnett & Jackson, 2019) the inclusion of the personal dimensions in sustainability sciences is limited (e.g. Ives et al., 2020). The guests generally agreed with this line of scholarship that such personal sustainability was key for working on transitions. The guests also highlighted that these personal forms of learning are not limited to students but include all learners, also the educators in RHE themselves. Subsequently, the importance of taking a reflexive approach to the unfolding RHE as educator was mentioned frequently, which is in line with calls for more transformative and ecological approaches to being a scholar-practitioner (Wittmayer et al., 2021).

## 4. Discussion

### *4.1. Towards a RHE*

The data suggests a number of key challenges for further movement towards a RHE. In terms of pedagogical-didactical approaches, most of the guests included experiential, contemplative, and or existential approaches and questions in their practice (Biesta, 2021). Examples of such practices that were mentioned included nature-based learning, walking exercises, and observational assignments related to the challenges that the students are tackling. For this, it is likely that RHE can draw heavily from the field of eco-pedagogy (Misiaszek, 2020). These practices were considered important, not only because of the embodied and existential nature of wicked sustainability challenges themselves (Ives et al., 2020) but also as part of the strategy to balance (psychological) safety and growth in designing RHE (Kaufman, 2020). However, a full exploration of a regenerative pedagogy, or regenerative pedagogies, remains needed.

Most of the gathered stories consist of courses that could be seen as niche innovations, at the fringes of education, such as minors, or dedicated masters that were designed from the start with a commentment to healing socio-ecological transgressive systems. This also means that in most cases, the students flowing into these courses are completely attuned to the more common neoliberal educational paradigm. This was highlighted by the frequent mention of the effort required to break down consumerist expectations of students (e.g., Wals, 2019 for a discussion of unsustainability in education). A frequently mentioned example in this regard was the degree to which students are used to working on relatively simple problems that are tightly defined or boundaried by their own educational programmes and strong frustrations when asked to co-discover what needed to be worked on and how to go about this as part of a consumerist paradigm of education (Winstone & Boud, 2020). This means that a considerable amount of effort, and time, must be invested by the educators engaging with RHE to break down some of those learned behaviors, such as focusing only on grades instead of personal or transitional impact (Wals, 2019).

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The guests shared a commitment to nurturing different dimensions of learning, namely subjectification, socialization, and qualification (Biesta, 2021), with specific mention that those concepts should be rethought through a regenerative sustainability lens. The guests used different vocabularies / concepts to express these dimensions of learning such as learning-to-care, learning-to-feel, and learning-to-transform (Wals, 2019). While there were (significant) differences across the cases in how a balance between these was sought, all educators focused strongly on facilitating connection and community-building, within the RHE course as well as with the broader innovation ecosystem within which the RHE is entangled. The focus on tackling regional challenges by connecting with local communities is also a key characteristic derived from ecological university literature as proposed by Biesta (2021), and Barnett and Jackson (2019) amongst others.

### *4.2. Using the REDPT*

The authors propose that the REDPT could be used by educational teams to (re)design RHE. To do so, these teams should involve a variety of actors from the community, place, and challenge that will be the center for this educational design. The REDPT could serve as the basis for a workshop or session where collectively the team of educational co-designers goes through the design-questions in an iterative manner. The resulting insights and ideas could be used as a starting point for further educational (re)design. Alternatively, the authors propose that the REDPT could be used as an analytical tool to collaboratively reflect on an educational experience and propose improvements while an in-depth guide and examination of this process is the topic for another study. It is important to highlight the contextual and iterative nature of RHE and that more empirical validation of this tool and accompanying workshop is required. The authors warmly invite (scholar-)practitioners to experiment and work with the REDPT in (re)designing their own regenerative higher education.

### *4.3. RHE and Educational Technology*

One of the surprising elements from the inquiry was the relatively little emphasis placed on (digital) technologies across the twenty-seven interviews. No strong statements were included about missing, lacking, driving, or in general the technomediation of ecological forms of learning and learning more generally in the twenty-first century (e.g., Stein, 2019). This could indicate that technologies do not play a large role in RHE, or that it is just not a big priority for these educators. However, given the degree through which education has been technologically mediated, especially during the covid-19 pandemic, and the likelihood of increased use of technologies moving forward, this seems unlikely. Instead, it is possible that more dedicated (digital) technologies are required to be designed to facilitate RHE. This presents a fruitful avenue for further (empirical) research or for perspectives from educational technologists.

### *4.4. Podcasting-as-qualitative inquiry*

The results of this research indicate that the entirety of the podcasting process could be used in (qualitative) inquiry. While this research engaged with a more relational approach (i.e., identifying relational patterns across multiple levels and times) it is likely that podcasting-as-inquiry could be used for more in-depth explorations of a topic, such as a single design disposition, concept, or barrier. Or even zooming in on the individual experience of an educator engaging with RHE over time. Of course, this would require methodological adaptations to the study design. As a form of qualitative inquiry, the use of podcasting adds an additional hermeneutical layer that the host (interviewer/researcher) must be conscious of. As you are not only gathering data, but you are also co-creating a communication/educational product for third parties. At times, this was experienced as challenging. And the authors recommend, whenever feasible, to sit-in or be a guest in a podcast before embarking on such an inquiry. A question remains how and if podcasting-

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as-inquiry would translate to other topics of study. Based on the experience in this study, however, the authors suspect that this will be the case.

### *4.5. Limitations of the study*

It is possible that the sampling was too homogenous. A large majority of the guests were active, or have been, in Dutch higher education. The experiences from the guests from outside The Netherlands were comparable with those active in The Netherlands, indicating that the identified RHE practices could be representative in other European contexts as well. The skewing towards Dutch examples, as well as the highly contextual nature of RHE itself, leads us to consider the results as indicative. It is important to note that in this study, a relational approach to co-constructing knowledge was embraced (West et al., 2020; Walsh et al., 2020) and from that perspective, this situatedness is not a limitation.

A significant limitation consists of the time commitment required for podcast-based inquiry, as each episode takes approximately 10 hours of work in additional preparation, recording, editing, and audio improvement as compared to regular interviews. In addition, the cognitive intensity of hosting a conversation while considering third party listeners was also noted by the main author. Finally, the technical know-how of recording, editing, and producing a podcast can represent a steep learning curve. This could partially be circumvented through the inclusion of specialists for these tasks but doing so comes with methodological, ethical, and financial implications. It is important to add that in principle, only the host has to have relatively high levels of technological literacy and the guest only has to be comfortable talking into a microphone.

## 5. Conclusion

The emergence of RHE represents a frontier for sustainability- and educational scholars alike who are interested in the intersection of (higher) education, regenerative sustainability and systemic change. While this study limited itself to higher education, of particular interest are studies exploring other forms of (institutionalized) RHE. Our results indicate that (further) validation of the REDPT, as well as exploration of alternative design practices and tools, are also warranted. The guests that participated in this study showcase the potential for a more RHE by showing that such redesign and redoing is in fact, possible. Through this study, we propose seven key design practices for embracing RHE as a possible future for universities to play a role in the bumpy decades to come. The study also highlights a number of personal and systemic barriers that call for personal and systemic change within higher education. While the nuances of how to engage with these different elements are context-dependent and is precisely where the artistry of education resides (Biesta, 2021). The REDPT does provide a guide to engage with such (re)design and (re)doing. We hope that and invite you to experiment with the REDPT and RHE in service of more sustainable futures.

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**Appendix A – Consent & Information Form**

Dear [GUEST_NAME_HERE],

I'm excited to get the chance to chat with you soon for our scheduled podcast episode on [DATE_HERE].

Here are just a few tips and suggestions to ensure we both get the most out of this time together:

- If you have one, please be prepared to use a podcasting microphone for this interview.
- If you can't do this, please use a set of earbuds like the ones that come with your smartphone. They provide higher quality sound than your computer's native microphone.
- Please be in a quiet room for our call where you're not likely to be interrupted. Ideally this is NOT a conference room or other large space with a lot of hard, flat surfaces. These create more echo and reverb than a smaller space with things like a couch or other soft surfaces.
- Please turn off your cell phone and notifications on your computer for our call.
- Our call with last approximately 90 minutes with time for a bit of prep ahead of the interview and to wrap things up at the end.
- Please note that the software only works in the CHROME browser.

Here are the topics that I'd like to cover during our interview (also see the structure of the final episode below for an indication of the questions). We'll likely digress a bit, but this is a general feel for where I'd like to take things:

- **The story of your education that connects to sustainability, regeneration and/or place.**
- **What this experience was like for learners and the impact it had on you and your students.**
- **The barriers and opportunities you experienced during this story.**
- **Your vision of higher education in 5-10 years based on this story.**
- **A metaphor that represents the purpose of your education.**

I suggest you prepare your thoughts and answers based on the above topic in advance, as it will improve the quality of the recording.

I will follow up after our episode and ahead of when this episode will go live to provide you with a link to share our episode and some social media assets that you can use to best help promote your episode. If you have any questions or need anything ahead of our interview, please let me know here via email. Thanks so much and looking forward to talking on [DATE_HERE].

Warm regards,

Bas van den Berg

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Please note that this gives a generalized overview of the structure of an episode of The (Re)generative Education Podcast.

**Metaphor Tease (2 minutes or less):**
Each episode will open with a metaphor that you will use in the podcast episode to describe your higher educational practice.

**----------MUSIC INTRO (15 seconds or less) ----------**
**Introduction:** Hi and welcome to *The (Re)generative Education Podcast with Bas van den Berg,* where we talk to leading higher educators that connect their education with sustainability transformations. In each episode, we will explore a story of inspiring and purpose-driven teachers who are challenging our conceptions of education in times of profound societal and systemic change. Thank you for listening and enjoy the podcast.

**----------THEME SONG (10 seconds or less) ----------**

**Expert/Topic Introduction (10-15 seconds):** In this part I will introduce you as a guest, If, there are specific parts, books, articles, videos and such you'd like to be mentioned here please let me know. I will base this on materials supplied by you and/or what can be found online based on your digital presence.

**Interview, Part 1 (5-10 minutes).**

- How would you describe your education that connects Higher education to place and sustainability/regeneration?
- What is a week in this education like?
- How did you become involved with this education?
- How did this education become reality?

**----------THEME SONG (10 seconds or less) ----------**

**Interview, Part 2 (5-10 minutes)**

- What is it like to be a learner in this education?
- How has this education impacted you and the other learners?
- How would you describe this as metaphor?

**----------THEME SONG (10 seconds or less) ----------**

**Interview, Part 3 (5-10 minutes)**

- What are the most important mechanisms and qualities that make this type of education work?
- What were the (systemic) challenges you face(d) and opportunities you explore to do this?

**----------THEME SONG (10 seconds or less) ----------**

**Interview, Part 4 (5-10 minutes)**

- How would you describe your educational dream in 5-10 years?
- What is needed to make this hope new educational reality?

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*Thank you to the guest for your time and energy today.*

**Show Goodbye (15-30 seconds)**

That wraps up our show for today. Thanks for listening to The Regenerative Education Podcast with your host Bas. If you enjoyed this episode, please share and subscribe. Till the next story!

**----------MUSIC OUTRO (15 seconds or less) ----------**

## Appendix B – Visual Summary of Season 1 of The Regenerative Education Podcast


## Appendix C – Visual Summary of Season 2 of The Regenerative Education Podcast

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**Appendix D – Visual Summary of Season 3 of The Regenerative Education Podcast**

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