

Engaging for Sustainable Development and Transformation – exploring the concept of Transformative Academic Institutions

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Abstract

Universities are increasingly being seen as a positive vehicle for territorial development and regional transformation, with an important role in enhancing Social, Economic and Sustainable Development of territories. The world's sustainability challenges are listed in the United Nation's Agenda 2030, that includes Higher Education Institutions (HEIs) as actors that can work in partnership with others in collaborative processes leading to the achievement of the Sustainable Development Goals (SDGs). However, it can be challenging to balance priorities and resources to actively engage with external actors to address societal challenges. This exploratory research brings together five academic partners (3 in Europe, 1 in North America, and 1 in South America) to understand their experiences of genuine societal engagement and collaborative partnership for sustainable development within their regions. The research followed an iterative process that started with exploratory and sharing workshops, developed case studies and engaged in a collaborative workshop to identify challenges and opportunities. Findings point to a more strategic partnering with external (non-academic) actors in order to contribute to (longer-term) change processes that address regional sustainability challenges. This can take universities beyond their existing roles in collaborative production and dissemination of knowledge towards new roles in curating collective knowledge and catalysing and facilitating change. Future lines of research include further work on embedding and scaling up to wider university structures and overall culture.

KEYWORDS (3-5)

Transformation, societal engagement, regional innovation systems, collaboration, co-design

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1 Introduction

Universities are increasingly being seen as a positive vehicle for territorial development and regional transformation yet are challenged by balancing priorities and resources to actively engage with external actors to address societal challenges while simultaneously delivering on academic excellence.

This exploratory research brings together five international academic partners to understand their experiences of genuine partnership for change within their regions. The partners all consider societal engagement and collaboration as a reciprocal interactive process based on mutual knowledge creation and dissemination (rather than a unidirectional transfer process), implying that interaction and reciprocity is a key fundamental in societal collaboration, and have identified a common interest in exploring this approach and how it can be operationalised.

The project partners (Orkestra, Basque Country, Spain; Innovation School, The Glasgow School of Art, UK; The University of British Columbia (UBC), Okanagan, Canada; Competitiveness Institute - Catholic University of Uruguay; and Collaboration Office, Lund University, Sweden) all have ambitions to enhance the societal impact of research through working collaboratively with other territorial partners (government, industry, civil society) and defining their research agendas to focus on detecting, understanding and addressing key regional challenges.

While the partners have different organisational structures (from mission-oriented research centres, to university departments, to groups of researchers sharing an interest in undertaking socially relevant research), they all undertake research collaboratively with communities in their regions to identify, explore and address challenges.

By delivering “regionally responsive research” to address complex societal challenges, they identified with the concept of **Transformative Academic Institutions (TAI)** (Aranguren et al., 2021). This early-stage research project describes how through an interlinked series of working papers, workshops, and collaborative knowledge building, the five institutions are progressing towards better understanding what it means to be a TAI by defining the significant factors, challenges and opportunities for TAI approaches. The results from this exploratory work point to a more strategic partnering with external (non-academic) actors in order to contribute to (longer-term) change processes that address regional challenges. This can take universities beyond their existing roles in collaborative production and dissemination of knowledge towards new roles in curating learning and catalysing change.

Following this introduction, the next section reviews underpinning literature on the evolving role of HEIs in relation to societal development. Section 3 provides an overview of the approach and methods used in this exploratory research. Results are presented in Section 4, followed by a discussion of results (Section 5) and conclusions (Section 6).

2 Background and underpinning literature

Universities are seen as key players in territorial development since the discussion around innovation and economic growth emerged in the late 20th Century. The discussion was born in the context of the Japanese economic miracle, explained by the capacity of its firms to learn and innovate (Freeman, 1987) and when an innovation gap was identified in the United States' industry due to the rise of competition (Etzkowitz, Webster, Gebhardt, and Terra, 2000). The national systems of innovation literature explains innovation as a result of a non-linear interactive process among firms, universities and public institutions (Edquist, 1997; Freeman, 1994; Lundvall, 1992; Nelson, 1993), and the regional systems of innovation literature explains different economic outcomes within countries through territorially specific dynamics (Cooke et al., 1997; Morgan, 1997).

In placing universities at the heart of the innovation process, the systems of innovation literature paved the way for the emergence of new concepts and frameworks aimed at capturing a new role or third mission for universities in addition to the more traditional ones of teaching and doing research. The influential Triple Helix Model (Etzkowitz and Leydesdorff, 1998) identifies the intersection of university, industry and government relations as an environment conducive to innovation, with those relations requiring a constant reconfiguration for the production, transfer and application of knowledge (Ranga and Etzkowitz, 2003). In this early model universities develop their third mission by transferring scientific and technological knowledge to firms and industry.

However, developing a third mission (Laredo, 2007; Nedeva, 2008; Pinheiro et al., 2015) depends on different contextual factors (Jongbloed et al., 2008, Laredo, 2007) making it necessary for universities to adapt their roles to the different contexts (Tdtling and Trippel, 2005). Uyarra (2010) identifies 5 different third mission models as they are reflected in the literature according to their type of engagement and contribution to regional innovation: knowledge factories, relational universities, entrepreneurial universities, systemic universities and engaged universities. Nuanced approaches to the latter type are civic universities (Goddard, 2009), responsible universities (Sorensen et al., 2019) or developmental universities (Arocena, et al., 2017). Similarly, entrepreneurial universities defined early on as engines of growth through knowledge capitalization, creation of new firms (Etzkowitz, 2001) and by facilitating behavior to prosper in an entrepreneurial society (Audresch, 2014), are found to play different roles at different levels and to change those roles over time. They can be: (i) growth supporters, through knowledge and innovations; (ii) steerers of regional development by building networks and complementing other local organisations; and (iii) growth drivers through leadership and their capacity to respond to regional needs (Pugh et al., 2022).

In any case, the literature on regional systems of innovation highlights the importance of proximity and this has intensified pressure on universities to play active roles in their host territories (Aranguren et al., 2016). In Europe, the requirement by the European Commission that all regions develop coherent territorial development strategies (known as Smart Specialisation Strategies, S3), as an *ex ante* condition to have access to structural

funds since 2012, has contributed to reinforce the role of universities as key players in territorial strategies for economic growth (Goddard, 2009; Goddard and Pukka, 2008; Goddard Kempton and Wallace, 2013; Kempton et al., 2014). Through the Entrepreneurial Discovery Process (Foray, David and Hall, 2011), many universities in Europe have engaged for over 10 years in collaborative multilevel processes aimed at defining territorial strategy. This has resulted in a wide array of university engagement practices that respond to specific contextual factors (Canto-Farachala, P., Wilson, Arregui-Pabollet, E. in press). This track-record of collaboration for innovation if revisited, could contribute to address sustainability challenges (Miedzinski et al., 2021).

The world's sustainability challenges are listed in the United Nation's Agenda 2030, that includes Higher Education Institutions (HEIs) as actors that can work in partnership with others in collaborative processes leading to the achievement of the Sustainable Development Goals (SDGs). The SDG's have been portrayed as an ideal means that can facilitate the transition from universities 2.0, focused on quantitative success, professional specialization and competition, to universities 3.0, which are highly aware of global challenges and societal responsibility and try to integrate different perspectives of regional and global stakeholders (Gisenbauer & Tegeler, 2020). However, as Cuesta-Claros et al. (2021) note, while the SDG's provide a shared vision of a sustainable future, there are multiple ways of understanding sustainable development transformations, the role of universities in those transformations and the changes needed within universities to bring them about. Pluralistic research environments that enable inter and transdisciplinary approaches are needed (Greenwood and Levin 2007; Bornmann 2013; Karlsen and Larrea 2014; Schneider et al., 2019), which in turn require a new set of incentives that recognize engagement in career progression indicators (Sormanti and Rossano-Rivero, 2023; Benneworth, P. 2017; Watermeyer 2015; Reale, et al., 2017).

In any case, complex societal challenges acquire meaning through interactions in the local context, where universities can contribute to create spaces in which alternative ideas, practices and social relations can emerge to further sustainability transitions (Wittmayer, 2014). These are spaces in which to develop a shared language and meanings that can lead to shared agendas for action (Karlsen and Larrea, 2014). A university model proposed for sustainability that predates the Agenda 2030 is the transformative university, based on an alternative mission of co-creation for sustainability in a given geographical vicinity (Trencher et al., 2014). Tripl et al. (forthcoming) build on said model to propose a regional transformative mission for universities of which some of its characteristics are the following: (i) a function of co-creation for sustainability and transformation, (ii) an objective of contributing to societal sustainability and transformation; (iii) an approach based on open innovation that provides (among other things) comprehensive, systematic responses to several interwoven problems; and (iv) collaboration based on large-scale coalitions with actors from academia, industry, government and civil society.

In addition to the sustainability challenge, the decade of austerity that followed the 2008 financial meltdown placed increased demands for explicit evidence of the value of public investment in research and higher education. The economic consequences of the

pandemic and the ongoing war in Ukraine may exacerbate that trend. In this context, researchers are increasingly asked to demonstrate the contribution of their projects to society and the economy in exchange for public funding (Fogg-Rogers, Grand, and Sardo, 2015; Watermeyer, R. 2019). This has brought forward the need to evidence pathways to impact (van den Akker and Spaapen, 2017). The so-called metric-tide (Wilsdon, 2016), however, has tended to reinforce an understanding of societal impact based on linear models of innovation and communication (Sivertsen and Meijer 2020) that do not help to capture emergent and multidimensional research processes. A shift from attribution to contribution has been proposed as a way to reward the engagement of university research with societal challenges without having to attribute specific causal relationships to complex challenges (Dotti & Walczyk 2022). Moreover, research can also have negative impacts on society (Derrick et al., 2018; Sigurdarson 2020).

In sum, universities and Higher Education Institutions (academic institutions hereinafter) are increasingly seen as curators of learning, knowledge and thinking, as well as catalysts of change and sustainable development (Trencher et al., 2014; Aranguren et al., 2016; Benner and Schwaag Serger, 2017; Weber and Newby, 2018; Schwaag Serger et al., 2021; Aranguren et al., 2021; Cuesta-Claros et al., 2021; Pugh et al., 2022, Benneworth and Fitjar 2019). They are expected to play a significant role in building productive multi-stakeholder partnerships within their local socioeconomic environment, engaging with companies and other actors to drive sustainable transformation processes. The aims of these multi-stakeholder partnerships are not only the production and dissemination of new knowledge (research and education), but also societal transformation. There is a need for a more realistic, honest understanding of the limitations of universities' contribution as local actors in their places, one which does not downplay the internal tensions and external barriers on their ability and willingness to engage (Kempton, 2019; Kempton et al., 2021). It is also important to consider that the field of evaluation has not yet caught up with the speed of institutional demands and this might affect universities' ability to deliver true societal impact (Cinar, Benneworth and Coenen, 2023).

3 Methodology and approach

The research involved an iterative process of exploratory cross-case learning between the five partner academic institutions on three continents (See Table 1) This participatory approach aimed to understand and unveil a better definition of factors, challenges and opportunities, as well as preconceptions and assumptions around universities' approach to engaging for transformation (operationalising the regional transformative mission as described in Trippl et al. forthcoming). In such participatory research, while the project may still start with a question and end with an answer, the process involves iterative, ongoing interaction and dialogue between relevant stakeholders, who all contribute towards a possible solution. Bringing together a diverse range of people with a shared interest or collective motivation and supporting them to collaboratively address a complex set of challenges (Norman and Verganti, 2014) can allow for insights and ideas

to be shared, developed and applied to inform new products, services, systems and experiences that respond to communities' ideas and aspirations (Sanders and Stappers 2014).

Table 1: Participating institutions

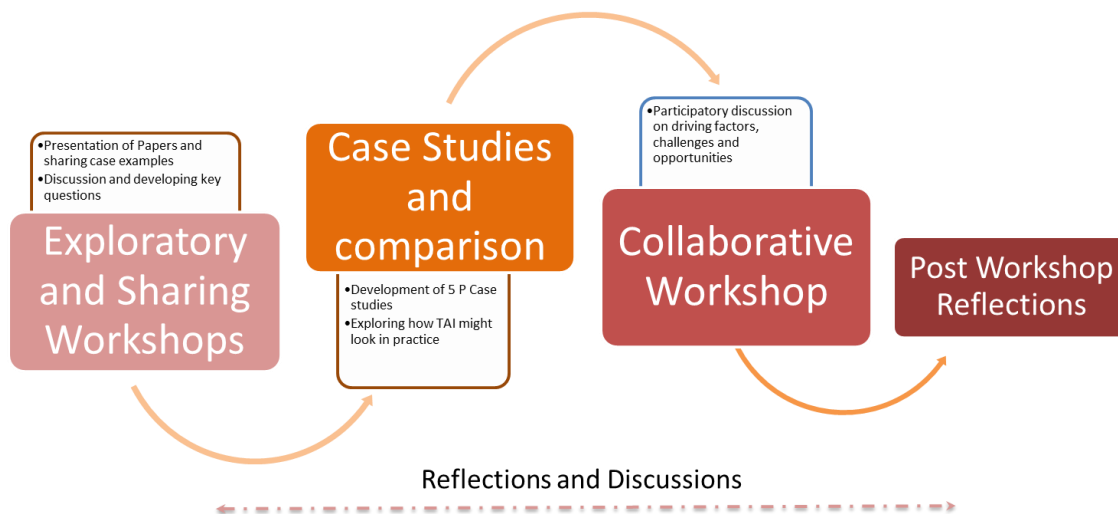
Department	Organisation	Location	Research Focus
Innovation School	The Glasgow School of Art	Glasgow, UK	The Innovation School is a leading centre for design teaching and research that applies Design Innovation to the key issues defining contemporary society. We examine design's role as a catalyst for positive change. Our research uncovers how to frame and create the 'spaces' for such collaborative engagement, bringing together participants' experience to reimagine and co-design implementable solutions, and the identification and implementation of innovative responses to complex issues through an open and collaborative engagement with communities, publics and stakeholders.
Orkestra	University of Deusto	Basque Region, Spain	Through transformative research, Orkestra links global and local knowledge to foster innovative solutions to the challenges of competitiveness faced by the Basque Country. We do so hand in hand with the territorial actors directly involved in those challenges, thereby co-generating actionable knowledge useful for their decision making. The specific goals set out in our mission are: (i) to contribute to improve Basque Country competitiveness, (ii) to promote the improvement of citizen's wellbeing and, (iii) to create knowledge on regional competitiveness.
Collaboration Office	Lund University	Lund, Sweden	LU Collaboration is a department within the university's administrative section for research, collaboration and innovation, with the role of promoting collaboration between the university and societal actors. Our work takes its starting point in global societal challenges where the university has a key role to play, together with others, in order to contribute to new knowledge, new solutions and innovations. The department assists with coordination, communication, skills development, action research and other tasks that support the initiation and development of cross-faculty projects and platforms where university researchers or students collaborate with external actors (e.g. companies, municipalities and other public sector actors, research funders and other organizations).

Social and Economic Change Lab	UBC	Okanagan, Canada	In the lab, a multidisciplinary group of faculty, staff and students across UBC focuses on social and economic change in regional, national and international contexts. Connecting diverse perspectives, ways of knowing and understanding, they generate critical knowledge to address complex challenges facing individuals, organizations and communities.
Competitiveness Institute	Catholic University of Uruguay (UCU)	Uruguay	The Competitiveness Institute is a research center within the Business Department at UCU, concerned with competitiveness enhancement at different levels (country, regions, clusters, firms). It has a specific mission to promote an active space for the reflection, creation and dissemination of knowledge on competitiveness, public policy, strategy, and innovation. Through its interaction with different regional stakeholders the Competitiveness Institute seeks to contribute to reality transformation and the improvement of wellbeing at the region.

The group of partners had been brought together by a common interest in how their research could bring impact and change in their regions with the aim of developing an 'informal sharing space' to discuss the local/regional/territorial impacts of research. Such research is a journey of inquiry, “where direction, conduct and action are not predetermined, rather they are chosen through observation, reason and evidence, informed by feeling and sensitivity, as the journey progresses.” (Culver et al., 2015: 205-206).

The iterative process started with exploratory and sharing workshops, before development of reflective case studies for each partner perspective, a collaborative workshop to identify challenges and opportunities, and final reflections on learning and further research.

Figure 1: Exploratory research approach



1. Exploratory workshop (May '21)

As an introduction and an initial prompt for discussions, Orkestra (Basque Country) shared a position paper they had developed to articulate some of the challenges and ambitions in this approach “*Transformative Academic institutions: An experimental framework for understanding regional impacts of research*” (Aranguren et al., 2021) in advance of the first workshop, and this was presented and discussed. This paper aimed to contribute to discussion on societal impact of research, proposed and an experimental framework to map the relationship between an academic institution’s role in a global academic knowledge community and their role in the (local) practical knowledge community, and proposed a definition of **Transformative Academic Institutions** as research centres with a mission to proactively engage in the socioeconomic development of their regions.

This exploratory session was used to gather reactions to the paper, and reflections on how it resonated (or not) with partner experiences. This therefore stimulated debate and prompted reflections on similarities and differences in each context. The initial reaction was very positive, with participants describing how their experience resonated with the postulated model. The workshop concluded with agreement that the partnership should continue this exploration and started to develop research questions for the group to address collectively.

2. Sharing workshop (June '21)

This workshop was structured around tangible shared examples from two partners (Innovation School, GSA and Competitiveness Institute, Uruguay) of how research impact is captured, particularly evidencing value for societal partners and for academics. This contribution had been prompted during the previous discussion on how we were valuing our contribution, and who was defining and evidencing that value.

The GSA example described the recent exercise in developing an impact case study (ICS) for the Research Excellence Framework (REF) submission and assessment. In this context impact is defined as “an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia” (UKRI, 2021), and aims to articulate the difference we make and the evidence for the difference we make or have made (Boddington 2021). The ICS focused on how using participatory and co-design processes helped to improve user experiences for health and care services across Scotland, through supporting the development of new services and technologies, providing a lived-experience evidence base for health and care decision making and intervention development, and supporting health and care professionals to engage more effectively with stakeholders. The case also highlighted the challenges in evidencing such value (this happened because of us) and the academic demand to anchor in research, which can still be a challenge for action research approaches.

The Competitiveness Institute, UCU case explored how they keep track of impact and uncovered some of the main challenges they face both within and outside the University. The institute seeks to “transform our reality, contributing to the enhancement of Uruguay’s competitiveness”, by conducting applied research and consultancy projects working in strong linkage with different regional stakeholders. Tracking impact included evidence and publications, but also invitations from industry, government and NGOs to discussions and action, as well as societal contribution to the debate (and measurement) of competitiveness in the country. Challenges included the (still) poor linkages between firms and academia (particularly for social research agendas), as well as the internal prioritisation of academic outputs, and a lack of institutional flexibility. The specific example of the state competitiveness in Uruguay report showed strong social impact, influencing debate and action, but still challenges with being valued within the institution specially in regard to accountability matters and the evaluation of individual researchers. This led to further discussion and defining of the research questions, with an initial focus on “What does it mean to be a Transformative Academic Institution?”

3. Subgroup Analysis

Whereas the first two workshops had been good opportunities for sharing experiences and had generated significant discussion of ideas and an initial defining of research questions, it was felt to be helpful for a smaller group to progress streamlining and facilitating the process for identifying areas to focus on for further discussion. As such it was decided that a smaller group would help analyse the discussions and outputs so far and proposed a more structured approach (whilst still remaining open and iterative) to take forward the debate (and generating knowledge in the process).

A subgroup was therefore established, involving all institutions, who analysed the outputs so far and designed the next stage for exploration.

As a further contribution, each partner was invited to develop a mini case study to articulate their TAI experience including reflections on their roles in territorial impact, using a common framework (the 5 P's) to briefly capture the following areas:

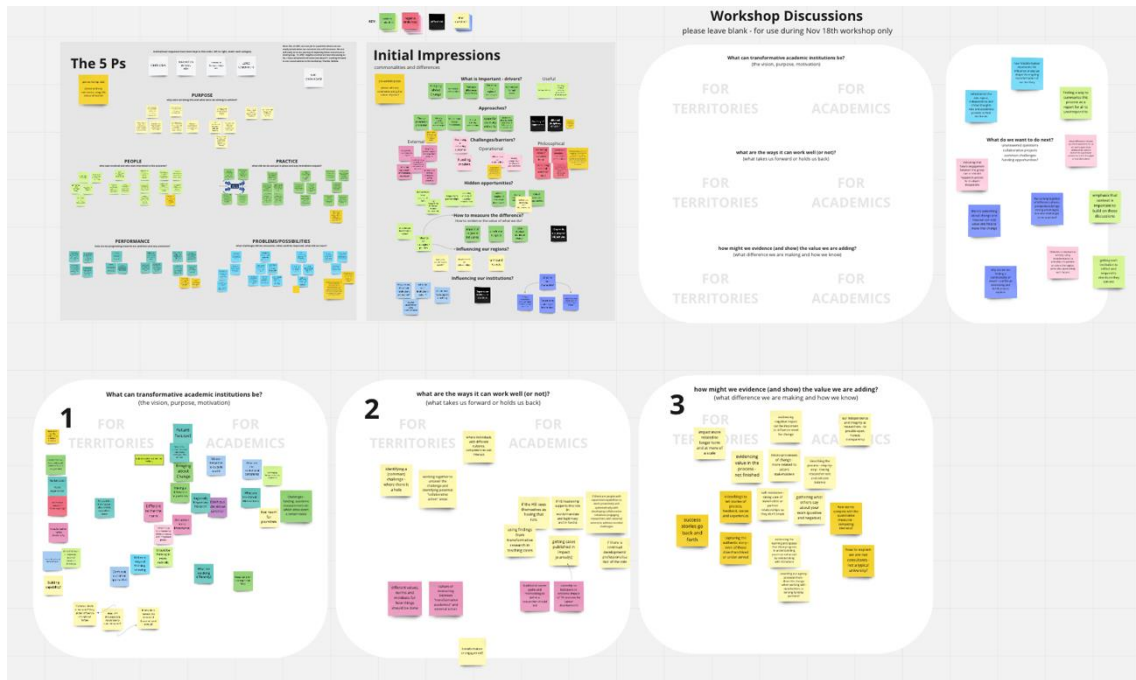
- › *Purpose*
Why were we doing this and what are we aiming to achieve?
- › *People*
Who was involved and who was interested in the outcomes?
- › *Practice*
What did we do and put in place, and any immediate outputs?
- › *Performance*
How are we progressing towards our ambition and any outcomes?
- › *Problems/possibilities*
What challenges did we encounter, what could be improved, what did we learn?

It is worth noting that developing the case studies stimulated some challenge in itself as partners felt they were still discussing what transformative meant within their own context, how much agency they had to articulate this within their institutions, and indeed who defines value within territories and communities (who may not agree on that definition), but this feedback in itself was informative for the overall debate on how universities and researchers can situate themselves in that conversation.

4. Collaborative Workshop (November '21)

Case narratives were then analysed to explore similarities and differences, and other key insights (see results section below), and the outputs from this analysis were shared in advance of the final stage using collaborative online tools (MIRO), allowing the wider group to add further reflections and contributions.

Figure 2: Overview of Miro collaborative workshop



The wider group from across the institutions then reconvened for the final collaborative workshop, involving shared online tools and facilitated discussions on structured questions (both in cross institutional breakout rooms, and together in plenary). The aim of this process and activity was to develop a greater shared sense of the challenges and opportunities for HEI territorial impact, from which to develop shared questions or briefs in view of further research and options for collaboration to explore new ways of tackling these challenges and opportunities.

As well as an initial discussion on the analysis of the outputs so far and the case study development, this third workshop was structured around exploring three further questions to delve deeper into our common (or not) understanding of TAI, how to make it practical and deliverable, and how to measure success. These questions were:

- › **What can transformative academic institutions be?**
(the vision, purpose, motivation)
- › **What are the ways it can work well (or not)?**
(what takes us forward or holds us back)
- › **How might we evidence (and show) the value we are adding?**
(what difference we are making and how we know)

As well as notes from the facilitators (volunteers from each institution led the discussion in each breakout group), the online workshop was recorded and transcribed so that nothing of the richness of the debate was lost.

5. Post workshop reflections (Spring '22)

The final outputs from the research were collated and shared, before a short, structured feedback was collected from across the partners with reflections from participants on the process, key learning and opportunities for further research. These reflections contributed to the initial conclusions below.

6. Ex-post update (March '23)

One year later, the partners reconvened to discuss how ambitions for engaging for sustainable development and transformation were being taken forward. Partners updated each other on changes in structures, teams, institutional support and the wider environment, and shared key priorities for the future (short- and medium-term). These additional insights reinforced preliminary findings and provided concrete illustrations of the challenges and opportunities associated with universities' regional transformative mission (see results section below).

4 Results

The early workshops involving discussion of the position paper and sharing of specific cases triggered an initial positive response across the partners who identified with the experiences being described. As the discussion unfolded, however, this also uncovered challenges and differences (in context, in institutional models, in local stakeholder relationships, and even in approach).

Case study analysis of the 5P exercise looked at similarities and differences across the institutions. This highlighted important factors for success, including a real focus on bringing about change, working collaboratively with partners, and focusing on key regional challenges. There was also a strong theme of establishing independent credibility whilst being connected to the real world. This also highlighted barriers to this approach, for instance the difficulty to change some mindsets in academia, especially at strategy or mission definition levels, the issue of accountability (and agency) and the challenge of evidence collection to show the value of the approach.

Despite a diversity of approaches (reflecting the multi/interdisciplinary nature of this research partnership) there was common emphasis on bringing in external knowledge and supporting partners through a change generation process. There was also a strong commonality around ensuring flexibility within the process (to adapt to different needs and requirements) and building a mutual learning environment. This last point was raised by some partners as extremely important emphasising that creating liminal spaces where communities and universities can engage and find new ways of imagining the world was the only way to create a new future. This reflects thinking by Howard-Grenville et al. (2011), in their description of an in-between space where the personal and the public, the

possible and the ambiguous, the familiar and the unfamiliar, the existing and the new are explored.

Challenges with this approach also highlighted some commonalities, in particular, developing credible ways to measure impact, the importance of evidencing intangible outcomes and influence, and ensuring an ongoing dialogue to meaningfully include stakeholders.

From the final collaborative workshop, these themes were further debated, and then input into the three question areas described above. Key findings are summarised in Table 2 below.

Table 2: Key findings from the collaborative workshop

Question exploring TAI	Key elements of success	Challenges
What can transformative academic institutions be?	Making a difference for partners/bringing about change; being future focused; vision to respond to societal challenges; being open to new ways of thinking; building capability and prioritising regionally responsive research.	Institutional constraints and agency; the marketization of transformation; ensuring genuine engagement; ethical tensions and prioritising institutional ways of thinking.
What are the ways it can work well?	Identifying a common challenge; using findings in teaching cases; developing collaborative initiatives; active support from HEI leadership.	Lack of institutional support; lack of legitimacy; not valued through traditional research rewards; difference in values, norms and mindsets
How might we evidence the value we are adding?	Evidencing the value in the process; gathering what others say about your work (positive and negative); capturing the authentic story; impact over the longer term	Nurturing partnership; maintaining independence and integrity; stories of change competing with quantitative measures; difficulty in evidencing influence.

The discussion also highlighted some further questions including: is impact always positive, or can TAIs contribute to a negative outcome for certain communities (for example reinforcing dominant narrative for socio-economic models). This raised the importance of disruption and bringing in different thinking and perspectives as part of the essence of TAI approaches.

The ex-post update reinforced initial findings and provided illustrations of how universities are operationalizing their transformative mission. For some it also brought into stark focus the challenge of maintaining that agenda in the face of financial and strategic

pressures elsewhere. Whilst some of the partners had continued to develop and implement this approach and ambition within (in some cases) growing support from their institutions, for others changes in leadership, strategic focus and financial pressures had led to the disbanding of their research group.

For example, our partners from Orkestra Basque Country had used the learning from the process to inform their annual stakeholder review. Through their long-standing interaction with territorial actors, they are now involved in a partnership process with their regional government through which they are identifying, together with actors from industry, government and civil society the ambitions for the region in 2040 (Euskadi 2040). In order to strengthen its comprehensive transformative approach, talent development involves training on action research to first year doctorate students working in Orkestra, irrespective of the methodological approach they choose to develop their dissertations.

The collaboration office at Lund is supporting an innovation platform for the locality – Future By Lund – which is a partnership between the university, the municipality and local companies (large and SMEs). The platform aims to act in between various organisations to drive forward innovation activities that individual actors cannot implement by themselves. The business model and mode of system leadership is built on the mobilisation and collaborative engagement of various stakeholders in the local innovation ecosystem – coalescing assets (funds, knowledge resources, capacities, infrastructure) and catalysing action that contributes to innovative and scalable solutions for society. Lund University and Future by Lund have also worked in collaboration to develop a new model to track system change processes in their innovation portfolios.

Innovation School at GSA has continued their involvement with Triple Helix collaborations focused on territorial impact, particularly exploring the role of design in building collaborative innovation solutions and evaluating impact. They are involved in building the case for two Innovation Centres to become long term infrastructure within the ecosystem, focused on particular mission driven areas (Build Environment journey to net zero, and Digital Health and Care Innovation).

In contrast, partners in Uruguay faced challenges in budget and focus of the institution, leading to the disbanding of the Competitiveness Institute as a research center and a focus back into traditional research. Whilst some of the group remained at the university, some left the institution, but were still taking forward opportunities to collaborate on areas of common interest (e.g. clusters and sector development).

UBC had some similar challenges in budget and changes in institutional leadership. However, individual researchers were continuing to develop and explore questions related to the themes, including governance and organisational forms, research enquiry led by students, further investigating language and what transformation means (is it open, is it positive).

5 Discussion

This exploratory research found that, while the concept of a TAI resonated with the experience of those involved, there was not an agreed view of what transformative academic institutions could mean, and indeed if it is the correct term. The iterative workshop approach allowed the partners to share experiences, challenge each other's thinking, articulate what is important for a TAI (vision, purpose) and how that can be supported to build effective partnerships within their ecosystems. As Karlsen and Larrea (2014) suggest, dialogue in the context of diversity is not necessarily a process that leads all participants to think the same; it is mutually shaping, allowing participants to gain a better understanding of each other.

Indeed, the participatory design approach allowed a group of researchers, working in different contexts and in very different organizational settings, to tackle questions in a novel way and deepen their collective understanding of what they are trying to achieve as university researchers. The research process unveiled and challenged assumptions around concepts of “transformative”, “HEI”, and “impact” with some suggesting the need to pause and build a shared language as a necessary step to creating shared meanings and eventually a shared agenda through the interactive workshop process the group has been developing.

This also raised the need to rethink (and perhaps reimagine) the purpose and remit of universities and might lead to alternatives to the very notion of Transformative Academic Institution. In any case, what this process reveals is that while labels and concepts help to frame discussions around roles, research approaches, governance structures, and incentives, among others, self-reflection is key because it helps to develop awareness of what is being done, why and by whom. Moreover, the international dimension of the research process is a counterweight to the danger of matching research with local needs that can lead to it being detached from experiences and processes happening elsewhere and ‘locked in’. This research process began with the recognition and feeling that new forms of ‘internationalisation’ can be built by linking research processes in different territorial contexts and learning from and with each other.

The discussion also highlighted a possible tension between existing (and well-embedded) HEI roles of knowledge development and dissemination for and with society, and the new/evolving call for HEIs to act as curators and catalysts or facilitators of change processes. Questions were raised around the mandate for and relative focus of acting as a TAI given existing resourcing, structures and incentives. In addition, during the process of the research, participants challenged the assumption that impact of universities is necessarily always positive highlighting the need to continually interrogate it, since impact can also be negative particularly for communities not engaged or included within the usual discourse. This in itself drew out the importance of the role of universities to challenge current models and disrupt conventional thinking by bringing in different perspectives. Furthermore, all partners agreed that universities have an important role to

play in future thinking, a role captured in the notion of University 4.0 by Kempton et al. (2021).

Notwithstanding their different organizational contexts, the partners included in this research have two main things in common: a mandate or interest in undertaking socially relevant research and their small size in relation to the wider university structure.

Of those partners who continued to be supported to take forward this agenda at an institutional level (to a greater or lesser extent), it is useful to reflect against the characteristics for transformation highlighted by Tripl et al. (forthcoming) among them their function, objectives and approach and type of collaboration. The Lund University Collaboration Office involvement in Future by Lund, for example, is a good example of a function of co-creation for sustainability and transformation and an objective of contributing to societal sustainability and transformation, as is the GSA collaboration for Innovation Centre long term infrastructure. Both are collaborations based on a large-scale coalition with actors from academia, industry, government and civil society. This type of collaboration is also showcased by Orkestra's engagement in Euskadi 2040 which also shows an approach characterised by a comprehensive, systematic response to several, interwoven problems and multi-directional knowledge flows across a wide range of stakeholders.

It is interesting to see that after only one year, we can observe that some academic institutions are continuing to take steps to develop and implement their transformative mission (realising some of the characteristics outlined in Tripl et al. forthcoming), while other partners have found the challenges of influencing and convincing leadership within institutions to support such approaches too challenging to overcome. Part of this could be explained by evaluation mechanisms that do not yet reflect the value of taking on a transformative mission or new institutional demands, as identified by Cinar et al. (2023).

This is a small sample, and acknowledging that it is very difficult to extract conclusions from the small number of participants in the research process, they do span three very different geographies: North America, South America and Europe, suggesting these debates and tensions are real and topical across multiple locations. In all cases, a gap emerges between the discourse in policy circles (on the role for universities in Smart Specialisation, SDGs, etc.) and practice, where TAI approaches are still small, at times experimental and not institutionally embedded. In evolutionary terms this illustrates the tensions between what Giesenbauer and Tegeler (2020) label as the post-modern mindset of HEI 3.0 (centred in action research and stakeholder dialogue) and the practical need to abide by the rules of HEI 2.0 (that is quantitative success, professional specialisation and competition).

6 Conclusions

This exploratory research involved an iterative process of sharing, comparative case analysis and collaborative knowledge building. Through cross-case learning between five

academic institutions on three continents, the partners progressed towards better defining significant factors, challenges and opportunities for TAI approaches, as well as unveiling preconceptions and assumptions around engaging for sustainable development and transformation – taking on a regional transformative mission (Tripl et al. forthcoming).

Tripl et al. (forthcoming) build on said model to propose a regional transformative mission for universities of which some of its characteristics are the following: (i) a function of co-creation for sustainability and transformation, (ii) an objective of contributing to societal sustainability and transformation; (iii) an approach based on open innovation that provides (among other things) comprehensive, systematic responses to several interwoven problems; and (iv) collaboration based on large-scale coalitions with actors from academia, industry, government and civil society.

The exploratory research conducted over a number of years has highlighted certain steps that some partner institutions have been able to take towards operationalising the characteristics of academic institutions' regional transformative mission (including developing co-creation functions, a focus on contributing to societal transformation, and building larger-scale coalitions working in an open innovation approach). Alongside exploring approaches to achieve regional impact through transformative research and collaboration, the project raised the challenge of leadership and legitimacy in research teams taking forward these agendas, exacerbated by the different organisational structures underpinning each partner (ranging from separate departments to looser research groups) all operating as smaller, innovative parts of their larger host institutions. Challenges also remain around evidencing the value and impact of such approaches (both for stakeholders and within academic contexts).

The exploratory research has inspired a desire for continued peer learning in order to proactively work on developing institutional awareness, conditions and capacities for taking on the transformative role, as well as acting as a collective sounding board for collaborative exploration of these challenges.

Increasingly, there is an understanding that regionally embedded research institutions can play a key role in contributing to regional socioeconomic development by aligning research objectives with the strengths of the region and collaborating with local partners to jointly develop and capitalise on region specific competencies (European Commission, 2014). However, there is also a need for a more realistic, honest understanding of internal tensions and external barriers to the ability and willingness of universities to engage (Kempton et al. 2021). This paper offers a small contribution in that direction.

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