

Universities as a Resonance Space of Future Societies

Reflections on a University of the Future

Starting points of societal developments

The *frameworks and conditions* for meaningful and successful action at work and in everyday life have changed significantly – not only in the last 2 years of global pandemics, but since 10-15 years already. Thinking in terms of certainties, cause-effect relationships, input-output categories is no longer sufficient as the main school of thought, especially for people who act responsibly. We are moving into a 'post-linear' age that demands new skills from societal actors: to deal creatively with uncertainty (Stark et al. 2017), but also to identify and use opportunities and potentials for a new 'world of resonant relationships' among actors (Rosa 2016, 2018).

However, higher education today still and largely follows an idea of linearity and predictability - input-output relations. The need for a higher education that cuts across disciplines and prepares students for ambiguity and non-linearity, and that supports differentiated and complex thinking and action, therefore becomes all the more evident. Future responsible leaders, leading networks and groups to influence the 'post-linear age' will be significantly shaped by the cultures and content of our universities.

Managers and employees in the 'post-linear age' are and will be characterized by a high level of self-competence. They will be able to act professionally and responsibly under uncertainty. They do not deny imponderables, but name them. They do not restrict complex realities to supposedly secure basic facts; instead, they will be able to develop a comprehensive picture of a complex situation and ways to act responsibly in uncertainty. They will clarify personal considerations and priorities; act as opponents of 'no alternatives' and as advocates of the conscious decision for one of several alternatives, after personally responsible analysis and with disclosure of the decision criteria. They name spheres of interest and channels of influence on decisions and thus complete the full picture of a decision-making situation.

Higher education with this goal therefore increasingly needs to be able to initiate transformative processes (Scharmer 2019; Schneidewind 2018). To obtain 'transformational literacy', higher education no longer can take place in sometimes infantilizing environments of classrooms dominated by the dictum of a factual canon. The university of the future is developing as a resonant space of society in which societal issues and challenges are actively analyzed and shaped in teaching and research, and in which personalities from all sectors of society will take individual responsibility for the development of students as personalities.

Universities of the Future as a Resonance Space for Society

If higher education - as an institutional social actor - is to 'resonate' as a resonance space of society, it needs a 'transparent communication and reference framework' (Sailer, Stark & Szogs 2017). Thus, it must not only enable the mutual understanding of those acting in the university within the university.

The exchange in the scientific community with other research and teaching institutions is still central, but not sufficient. Rather, through its various formats (teaching, research, transfer) and institutions, higher education must recognize, understand and respond to the demands and challenges of society - in other words, 'relate'. At the same time, as a university (with all its actors), it must be heard and echoed in society for the discourse and implementation of its discoveries, insights and innovations.

The university becomes - in the sense of the quadruple helix - an active (and vibrating) part of society (Fig. 1)



Fig. 1:
Quadruple Helix
Innovation (Campbell &
Carayannis 2012).

Following Campbell & Carayannis (2012) one can sketch the idea of a Modus3-university (Roessler 2016), which is characterized not

only by well-developed campus-community partnerships (Stark, Altenschmidt & Miller 2016), but, in particular, by a developed transformational *research with an application focus*, which - linked to the corresponding research-based teaching. Transformational research and education as well as the strong link to civic society can also provide an important 'missing link' between applied research and basic research at different types of universities.

Similar to 'Industry 4.0', which is replacing the original idea of mass industrial production by individualized products and services in learning, research and development in a '*university as a resonance space of society*' becomes more individualized. Lifelong learning, research, production and work constantly intertwine - the different actors of society (students, teachers or partners from companies, civil society organizations, entrepreneurs, creative people, artists, politicians...) interact actively and contextually.

Teaching and learning in this context is not one-dimensional as a transfer of knowledge (from teacher to student; from university to society), but is a continuous mutual reflective experience. Learning will take place coordinated and negotiated in a continuous exchange of different actors in physical as well as virtual space. A multidimensional and resonant space, which enables, creates and maintains its references for research and learning will not simply

fade away, but will resonate and enable an urgently needed re-reflection for responsible innovation through constant re-sonance. In short: a 'resonance space' is needed as an innovative enabler for communication between the social actors: the university of the future (as a Modus3 university) can and should be this resonance space.

Properties of a University of the Future as a Resonance Space

- (1) The University of the Future will be an *initiator, co-designer, enabler and one of the active players in this resonance space*, since it has a concept of its dimensions and can establish corresponding encounters. Actors in the University of the Future will know that theory is 'practice understood'. This experiential knowing does not end at lecture hall doors or stop at the factory gates. If learning (at schools and universities) is not only a short time in life, but must become learning in the time of life, it applies even more to working life and social practice. Relations between university, working life and social practice therefore must be reorganized online and offline. The *architecture (the buildings) of the university as a resonance space* therefore must meet requirements needed in the interaction of its technology, building style and design. *Resonating spaces need to be enabling spaces* to allow various forms of active learning (skills for Co-Creation, future skills for innovative communities and transformational learning).
- (2) *Regionally-based international networking as part of a University of the Future*: 'Think global, act local' narrows down. Many medium-sized companies that think from their local environment often and successfully act as global players. The resonance space takes this anchoring in the region into account, but also creates international networking that is not only technical. The university of the future does not negate the poles global/local, but provides them with a complementary frame of reference in the resonance space.
- (3) *The resonance space as an ordering space* will be part of the physical-virtual structural potential: from the point of view of intellectual capital (human, structural, relational potential), the resonance space will enable smart links between micro-, meso- and macro-levels of the knowledge society. Following the knowledge-political new macro-ordering criteria, it will help to transparently classify the advice generated on meso-level and co-creatively transdisciplinary research and to link it to practical-research application and experiential knowledge in the (regional) micro-areas.
- (4) *The resonance space as a scaling space of individual and societal impact* will it make possible to share, evaluate and further develop insights, innovations and open questions with the community. It enables previously unknown actors to come together with new projects. Existing activities are also enlivened by involving external actors, and working best practices are shared and resonated with.
- (5) *The resonance space extends previous approaches to a university of the future*: the Open Loop University (cf. <http://www.stanford2025.com/open-loop-university/>) and similar approaches address the educational process from a university perspective only. If members of the university dip into working and community life and community members will be part of the academic life in return, universities finally will become and serve as a resonance space for a responsible knowledge society. Alumni become

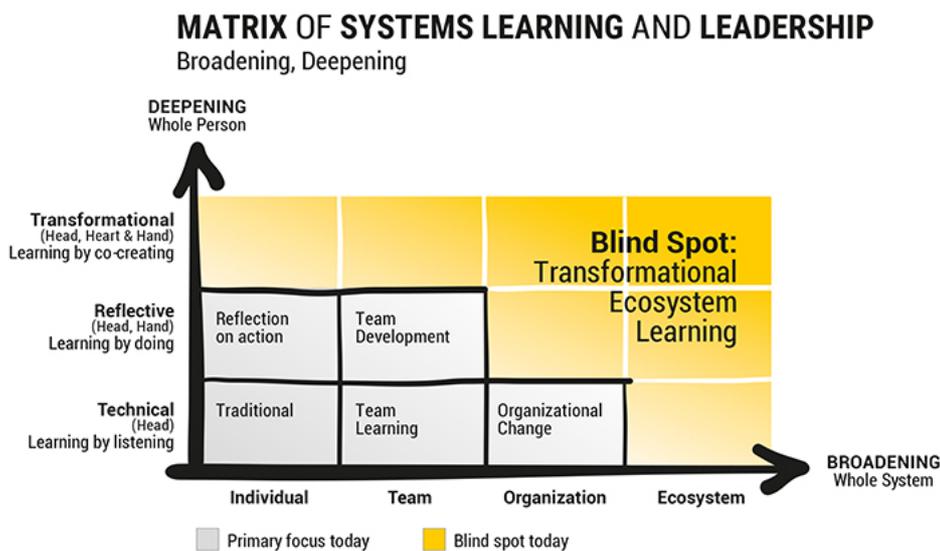
populi. Universities as a resonance space will identify themselves as a citizen university, which in its master classes also takes up experiences that have not been made in university life and by non-university members. The participatory intellectual constitution and the grasp of social, research life will be supported within the resonance space.

- (6) The resonance space will re-invent traditional universities in structural and hierarchical terms: Transformational learning and teaching implies that planning and administrative processes (enrollment, curricula, exams, formatting study programs) gradually will develop into a joint process between teaching and research staff, students and civil society. Practice of learning and teaching, as well as respective results will be a joint responsibility. The best way to link learning and leadership is to teach what you learn, and to experience research.

Transformational Literacy connects with Transformational Research and Science

Transformational Literacy links Learning and Leadership

In essence, it is about including not only the scientific-academic level but also the experiential level (learning by doing), the eco-system in the sense of 'systems thinking' and the change of one's own self. 'From Ego to Eco' broadens and deepens the perspective of transformative learning. Goes beyond and builds on what we believe to be core elements (properties) of a 'university of the future' (see Otto Scharmer <https://medium.com/presencing-institute-blog/vertical-literacy-12-principles-for-reinventing-the-21st-century-university-39c2948192ee>)



Transformational Research and Science

The term *transformational research* has been around since about the turn of the millennium. However, its roots are much older, lying in Thomas Kuhn's concept of scientific revolutions¹ as well as Karl Polanyi's concept of transformation². A good definition of transformational research comes from the US National Science Foundation (NSF). According to this, transformational research is capable of revolutionizing an existing field of research and associated research practices (Kuhn) or creating a new field of research or paradigm (also Kuhn). Furthermore, such research is characterized by the fact that it questions established understandings, i.e. transforms them (Polanyi).³

Interdisciplinary or transdisciplinary research is not yet necessarily meant by this, which cannot be otherwise in view of the conceptual sources; after all, the term transdisciplinarity was unknown in Polanyi's day and still exceedingly new and unused in Kuhn's day. In 2011, however, when the WBGU published its annual report on the Great Transformation⁴, the term was introduced and became an integral part of science policy discourse. The WBGU wants research that not only revolutionizes its field, but reaches beyond the scientific field by orienting itself toward (civil) society when identifying problems and defining research goals. In the WBGU concept, Polanyi's concept of transformation - with which the latter described the change from an agrarian to an industrial society - plays an even more prominent role than in the NSF. Polanyi saw in the *disembedding of the market* from the society supporting it, which was associated with industrialization, the cause of the developments that culminated in the civilizational catastrophe of the 20th century. '(see Schneidewind & von Wissel, 2016).

Where to go?

First Steps toward Transformational Teaching and Research in Universities of the Future

Bank of Innovative Ideas and Practice as a Marketplace

There is an abundance of small 'pockets' of innovative and transformational teaching and research in the universities of the world. Yet, at the same time, the vast majority of teaching still is based on the traditional one-way-street. Small innovative 'pockets' rarely are connected, so innovation – in a more traditional way – has to be re-invented over and over again.

To break the wave, an interactive, dynamic and adaptive market and information place - which should consist of an interactive online platform as well as offline elements - can serve. This marketplace makes it possible to match and further develop the different actors with their ideas, competencies, questions, searches and resources as well as existing projects and results in a dynamic process.

Systematic Self-Reflection on 'Transformation'

Talking about transformation can create the feeling of talking about the same thing but meaning very different goals (see Maja Göpel - <http://greatmindshift.org/key-concepts/>). One way to start a target debate under 'transformational literacy' is to share beliefs, concerns and innovative ideas between students, teachers and civil society as an integral part of each university program

This is also where the 'tractions' of transformation come into play:

- Back to economic growth - at the expense of...?
- Inventing a new, sustainable world - from a northern hemisphere perspective, or which one?
- What is the future 'eco-system' of universities? What role do they play in it?
- Who are the real 'transformers' (students, teachers, university administrators, politicians, companies...)?

Who belongs to it?

This is an important question for future scenarios: It is clear that university and civil society are (supposed to be) connected. Will it be also clear that the students' point of view takes a more prominent place (<http://move.arianehagl.de/>). Who actually belongs to civil society - who do we need to perceive? How do we link this with developments in politics and business - see <https://futureuniversities.com>

Transformation in transitional and uncertain situations...

What does that mean?

This is a question that particularly concerns us not only 'in year 2 of a global pandemic', but even more in times of war and threatened international security. In which stage of the transition situation are we actually? How can we as universities react to turmoil and uncertainty for students, teachers, researchers, and citizens? Are we walking together or are we (institutionally, but also individually) in different stages that make 'walking together' difficult? What is the role of higher education institutions in designing transformative learning spaces and formats in times of uncertainty? How can we support each other – and especially students, teachers, researchers and citizens who have lost their home and safe places.

*Towards a 'University of the Future'
as a secure and social place of learning for the future.*

This paper is the dynamic product of a 5-year learning journey toward a 'University of the Future' – initialized by the Task Force 'University of the Future' of University Network on Social Responsibility - <https://www.bildung-durch-verantwortung.de/en/>.

coordinated by Wolfgang Stark, Steinbeis Center for Innovation and Sustainable Leadership

Special thanks for contributing to the Learning Journey to Gabriele Bartsch (Stuttgart), Julia Derkau (U Mannheim), Ariane Hagl (Munich), Julia Kormann (UAS Ulm), Claudia Leitzmann (Nürnberg), Jörg Miller (U Duisburg-Essen), Klaus Sailer (UAS Munich), Otto Scharmer (MIT Boston), Ulrich Schrader (UAS Frankfurt), Günther Szogs (Frankfurt), Julia Sonnberger (UAS Augsburg), Gabriele Gien, Thomas Sporer (U Eichstätt), Andre Bleicher, Isabell Osann, Henrike Mattheis (UAS Biberach)

Please obtain references from wolfgang.stark@stw.de