

Virtual conferences in higher education

Teasing out their transformative potential for sustainable development

The Coronavirus outbreak has made virtual education a high necessity. Our intention here was to highlight potentials of virtual conferences to enhance transformative learning for sustainable development; new applications will provide powerful insights.

Clemens Mader, Anne B. Zimmermann, Mario Diethart, Ingrid Mulà



Virtual conferences in higher education. Teasing out their transformative potential for sustainable development | GAIA 29/1 (2020): 57–59 | **Keywords:** e-conferencing, CO₂ saving, Higher Education for Sustainable Development (HESD), sustainability competences, transformative learning

Global partnerships and the impact of air travel

A core principle of sustainability and the UN *Sustainable Development Goals* is cooperation and building global partnerships for change; this requires communication on an equal footing and inter-epistemological empathy. Fostering interpersonal competences is also key for implementing sustainability transition strategies (Wiek et al. 2011). Effective cross-border and value-oriented communication demand trust, time, and interaction in context, making travel across real and mental borders necessary (Pisters et al. 2019).

So does developing joint actions for sustainability lead us into the dilemma of needing to travel more? Given the very large footprint of air travel in higher education, thorough accounting for CO₂ and solutions for reducing emissions are being suggested (Janisch and Hilty 2017, Desiere 2016, scientists4future.org 2020). Indeed, while there is no denial that travelling in the academic world leads to exchange of ideas, sparks innovation, and makes it possible to confront borders (Langin 2019), we must face the question: do we really need to meet physically at global scale to build interpersonal competences, develop a relation to context, and support higher education for sustainable development? In par-

ticular, how important is physical presence for transformative learning, that is, the kind of learning needed for transitioning towards sustainability (Sterling 2011)?

In this paper, we take for granted that virtual conferences (VCs) can drastically reduce air travel and we explore what transformative potential there is in VCs to support learning for sustainable development in higher education. We base our analysis on the understanding of transformative learning developed by the saguf working group *Education for Sustainable Development* (Balsiger et al. 2017, Förster et al. 2019). To illustrate our argument, we provide insights from a VC organized in 2019 by the *COPERNICUS Alliance (CA) – the European Network on Higher Education for Sustainable Development* – as well as from a saguf *Dialogue*, organized as a physical workshop with transformative learning focus in content and methodology (see table 1, p. 58, box, p. 59). VCs can take place in several different formats, described by Janisch and Hilty (2017) as ranging from fully online to blended formats. The 2019 CA virtual conference gathered over 80 participants from 30 countries and five continents, and was technically organized at the University of Bern, Switzerland (Diethart et al. 2019). Promoting higher education for sustainable development was the driving force of the VC, so the or-

ganizers paid great attention to ensuring that modes of communication were creative, generated trust, and privileged interaction, with a view to triggering transformative learning and action.

A way out of the dilemma?

During the past years, both saguf and the CA have implemented new conference formats to offer space for transformative learning. Instead of classical paper presentations, participants have been encouraged to orchestrate spaces in which they appeal to

Dr. Clemens Mader | Empa | Technology and Society Lab | St. Gallen | Switzerland | clemens.mader@empa.ch

Dr. Anne B. Zimmermann | University of Bern | Centre for Development and Environment | Bern | Switzerland | anne.zimmermann@cde.unibe.ch

Dr. Ingrid Mulà | University of Girona | Institute of Educational Research | Girona | Spain | ingrid.mula@udg.edu

Mario Diethart | University of Graz | RCE Graz-Styria | Graz | Austria | mario.diethart@uni-graz.at

saguf: saguf office | Dr. Manuela Di Giulio | ETH Zentrum CHN | 8092 Zurich | Switzerland | saguf@env.ethz.ch | www.saguf.ch

© 2020 C. Mader et al.; licensee oekom verlag. This Open Access article is published under the terms of the Creative Commons Attribution License CC BY 4.0 (<http://creativecommons.org/licenses/by/4.0>). <https://doi.org/10.14512/gaia.29.1.12>

TABLE 1: Transformative potential of virtual and physical conference formats. Light blue cells indicate transformative learning conditions, darker ones show a plausible transformative potential.

CONDITIONS FOR TRANSFORMATIVE LEARNING	VIRTUAL CONFERENCE (E. G., COPERNICUS ALLIANCE ONLINE CONFERENCE)	PHYSICAL CONFERENCE (E. G., SAGUF DIALOGUE, see box)
safe learning environment for creative and disruptive practices	collective or closed virtual rooms with whiteboard, for exchange on norms and perspectives	safe space for inspiration and provocative activities appealing to body and mind
building of trustful relationships	epistemological flexibility, presenting conceptual frameworks through diverse media; using chat box for spontaneous exchange	physical event enabling peer learning within a multidisciplinary and multiprofessional environment
peer learning practices	interjections that show emotions or provide unexpected useful information	interaction on equal footing
embodiment	mindfulness activities about the (virtual) presence of self and other	meditation, physical exercises
experiential learning, context change	unusual virtual place for spontaneous interaction	meeting others from unfamiliar communities and contexts

the senses, emotions, and ludic mind, while calling for scientific exchange and initiating co-creational development of common actions. These meetings illustrate how powerful face-to-face meetings can be if they include transformative techniques like drawing, embodiment, serious play, or systemic change exercises. For sure, communication technology cannot fully replace such personal interaction in a concrete place. But asking “How can we make digitalization contribute to more sustainability in research and learning?” is an exciting opportunity. Indeed, it is worth exploring whether a VC may even increase the quality of interaction thanks to new technologies and applications, or improve communication by decreasing barriers and increasing the speed of execution, or possibly contribute to transformative learning.

The transformative potential of virtual conferences

Depending on the soft- and hardware used for a VC, a wide range of opportunities are available that substitute or enlarge the scope of action of physical conferences: sharing screens and documents; polls; whiteboards; electronic hand raising, clapping, and emoticons; and of course camera presence (either full conference rooms or individuals in different places). To foster learning potentials, VCs should combine different methods to make best use of the fact that participants may be online at the same time at different places across the globe. The number of participants is not that relevant,

as VCs are technically scalable in all directions. VC tools make it possible to achieve essential ingredients for further collaboration, like eye contact, having group or private verbal or non-verbal communication, and building a common language and trust (Herweg et al. 2012, Fritz et al. 2019). Promoting social exchange virtually can also enable new opportunities that would hardly be possible in physical conferences. Having the opportunity in a VC to deeply and more frequently exchange with people from other cultures and places, and with different ages and perceptions offers transformative potential for the development of interpersonal, reflexive, and normative competences. But does this cover all needs of transformative learning processes?

In *GAIA 26/4* and *28/3* (Balsiger et al. 2017, Förster et al. 2019) we highlighted conditions for creating environments for transformative learning from various perspectives. Based on these, we compared the transformative potential of VCs and physical conferences. Table 1 shows that the full potential of transformative learning can only be unfolded in physical meetings. However, virtual tools and methods can be used to create an environment for learning that fulfills certain transformative conditions.

Adequate staging for supporting transformative learning

Awareness of the technical options of VCs is not enough to guarantee transformative learning, as users may fall prey either to passivity or to the distracting use of gim-

micks. To contribute to the development of sustainability competences, VCs must be carefully staged through a comprehensive moderation. This entails detailed planning, structuration, and trust building communication (Panteli and Duncan 2004). At the same time, space for surprises is needed, as this is where forms of transformative learning will be possible.

During VCs, social interaction does not happen accidentally; it actively needs to be triggered by the organizers and the moderation. This means using exchange formats like chats, discussion sessions, or creativity rooms that attract individual engagement and purposeful group exchange. We also experienced that VC software increased participants' epistemological flexibility, for example, through planned or spontaneous sharing of screens or uploading of material. The public chat box was frequently used for questions to speakers, brief shows of emotion, or provision of unexpected information; participants seemed very spontaneous in their use of this tool. This was not perceived as disturbing a speaker's presentation: individuals were both highly professional and quite ludic in their interventions.

As revealed in the survey following the CA virtual conference, some participants would have appreciated more opportunities and time for self-organized interaction. Such moments are typical for physical conferences during coffee breaks, excursions, and meals; but are mostly missing in VCs and need to be actively offered as spaces for interaction. In this regard, it is not aston-

ishing that nearly all survey respondents mentioned a preference for an annual alternation of an online and face-to-face conference (Diethart et al 2019, p. 3).

Conclusions and outlook

Three main points emerge from this brief overview:

- Comprehensive moderation, purposive methodological planning, and technical support of VCs is essential. Only if participants have opportunities for informal, creative, and personal exchange may they experience spaces for transformative learning that challenge current thinking, acting, and feeling as well as underlying mindsets.
- Global exchange among people is crucial for fostering equity and a systemic understanding of sustainability challenges. VCs have the potential to increase this global exchange within the scientific and learning community (students, professional education, etc.), enhancing global cooperation, and building normative and interpersonal competencies.
- Virtual conferences do not substitute physical meetings, especially if co-creational initiatives require high levels of trust, need to deal with great degrees of controversy and trade-offs, or call for longer-term transformational processes over a longer period of time.

MORE INFORMATION:

- saguf working group *Education for Sustainable Development*: https://naturwissenschaften.ch/organisations/saguf/projects/education_for_sustainable_development
- COPERNICUS Alliance – European Network on Higher Education for Sustainable Development: www.copernicus-alliance.org

References

- Balsiger, J. et al. 2017. Transformative learning and education for sustainable development: Reflections and recommendations. *GAIA* 26/4: 357–359. DOI: 10.14512/gaia.26.4.15.
- Desiere, S. 2016. The carbon footprint of academic conferences: Evidence from the 14th EAAE Congress in Slovenia. *EuroChoices* 15/2: 56–61. DOI: 10.1111/1746-692X.12106.
- Diethart, M., A. B. Zimmermann, I. Mulà. 2020. Guidelines for virtual conferencing – inspired by the COPERNICUS Alliance Online Conference 2019. Bern: CDE, COPERNICUS Alliance. DOI: 10.7892/boris.139254.

BOX: saguf Dialogue 2019:

transformative learning “meets” higher education pedagogy

In December 2019, a group of 21 reflective practitioners from Switzerland and Germany met for a *saguf Dialogue* to reflect on transformative learning (from different perspectives and areas of activity). Participants identified key challenges and next steps to improve integration of transformative learning in higher education, in particular in relation to education for sustainable development.

In the context of societal transformation and transformative science that saguf has been focusing on in the past years, transformative tertiary teaching and transformative learning are key theoretical and practical concerns. While the education for sustainable development community has been demanding and discussing the shaping of transformative learning processes for years, progress in higher education institutions (HEIs) has been slow for a number of reasons (Balsiger et al. 2017, Rieckmann 2018, Förster et al. 2019). The *saguf Dialogue 2019* was designed as a face-to-face event that enabled peer learning within a multidisciplinary and multiprofessional context. It was important for us to offer a safe space for inspiration and embodiment in which participants could interact on equal footing, using all their senses, including during informal moments such as meals.

The following questions emerged as a first output of the event: has good tertiary teaching not always been transformative, don't we simply face a lack of implementation and professionalisation in HEIs? What conditions are necessary in a self-sustaining system to encourage students and lecturers to adopt transformative learning? How can safe learning spaces for transformative learning be created and maintained in HEIs? An important insight is that a rich and empirically sound array of practices are available in adult education and HEI teaching centres which simply need to be applied. Concurrently, this may lead to giving more weight to pedagogical professional development in HEIs. These outcomes will flow into the [Higher Education Summit 2020: How can we assure quality and transformative learning for sustainable development?](https://www.higher-education-summit-2020.com) from 31 August to 2 September 2020 at the University of Bern, Switzerland; www.higher-education-summit-2020.com.

A very productive event, as visible in the hashtags participants wrote, for example, [#WonderfulHeadHandHeartEventWithNestfeeling](#) [#LearningCommunityIsGreat](#) [#PowerfulExchange](#).

For organisation and moderation: [Ruth Förster](#) (saguf), [Anaïs Sägesser](#) (STRIDE/saguf), and [Anne Zimmermann](#) (COPERNICUS Alliance/saguf).

- www.copernicus-alliance.org/news-archive/279-guidelines-for-virtual-conferencing
- Förster, R., A. Zimmermann, C. Mader. 2019. Transformative teaching in Higher Education for Sustainable Development: facing the challenges. *GAIA* 28/3: 324–326. DOI: 10.14512/gaia.28.3.18.
- Fritz, L., T. Schilling, C. Binder. 2019. Participation-effect pathways in transdisciplinary sustainability research: an empirical analysis of researchers' and practitioners' perceptions using a systems approach. *Environmental Science & Policy* 102: 65–77. DOI: 10.1016/j.envsci.2019.08.010.
- Herweg, K., N. Schäfer, A. Zimmermann. 2012. *Guidelines for integrative training in inter- and transdisciplinary research settings: hints and tools for trainers of trainers*. Bern: Geographica Bernensia.
- Janisch, T., L. M. Hilty. 2017. *Changing university culture towards reduced air travel: Report for the 2017 Virtual Conference on University Air Miles Reduction*. Zurich: ETH Zurich.
- Langin, K. 2019. Climate scientists say no to flying. *Science* 364/644: 621. DOI: 10.1126/science.364.6441.621.
- Panteli, N., E. Duncan. 2004. Trust and temporary virtual teams: alternative explanations and dramaturgical relationships. *Information Technology & People* 17/4: 423–441. DOI: 10.1108/09593840410570276.
- Pisters, S. R. et al. 2019. Place based transformative learning: a framework to explore consciousness in sustainability initiatives. *Emotion, Space and Society* 32: 100578. DOI: 10.1016/j.emospa.2019.04.007.
- Rieckmann, M. 2018. Learning to transform the world: key competencies in Education for Sustainable Development. In: *Issues and Trends in Education for Sustainable Development*. Edited by A. Leicht, J. Heiss, W. J. Byun. Paris: UNESCO Publishing. 39–59.
- scientists4future.org. 2020. *Selbstverpflichtung zum Verzicht auf dienstliche Kurzstreckenflüge „Unter 1000 mach ich's nicht“*. <http://unter1000.scientists4future.org/de/selbstverpflichtung-verzicht-kurzstreckenfluege>.
- Sterling, S. 2011. Transformative learning and sustainability: sketching the conceptual ground. *Learning and Teaching in Higher Education* 5: 17–33.
- Wiek, A., L. Withycombe, C. L. Redman. 2011. Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science* 6: 203–218. DOI: 10.1007/s11625-011-0132-6.