

Learning About Sustainability in a Global Context of Digital Transformation in Teacher Education: Exemplary Vignettes of Experience in Webinars

ANN-KATHRIN DITTRICH^{*1}, KGADI MATHABATHE², IRMA ELOFF² AND
EVI AGOSTINI³

Webinars are a powerful digital tool for learning about sustainability in a global context. The implementation of different technologies in teacher education, such as webinars, is becoming indispensable due to digital transformation and internationalisation processes. In this context, digital competences are described as key to quality education and a sustainable future. In teacher education, there is little evidence on how digital tools can be used for learning about sustainability. Based on the *Teach4Reach* project, a two-year international study on the Sustainable Development Goals in teacher education describes learning experiences in webinars by presenting selected vignettes. The question is how digitisation can support learning on sustainability in a global context of quality education. We conclude that webinars are a digital tool that supports knowledge building and collaborative learning in an international context but that their specific properties need to be recognised. The vignettes exemplify various challenges and opportunities presented by webinars, such as the fundamental role of facilitators, ease of access to the online environment, different behaviours of participants and unknowns about the learning outcomes.

Keywords: teacher educators, learning in digital contexts, sustainable development, international webinars, phenomenological vignette research

1 ^{*}Corresponding Author. Faculty of Teacher Education, University of Innsbruck, Austria; Ann-Kathrin.Dittrich@uibk.ac.at.

2 University of Pretoria, South Africa.

3 University of Vienna, Austria.

Učenje o trajnostnosti v globalnem kontekstu digitalne preobrazbe v izobraževanju učiteljev: zgledne vinjete o izkušnjah s spletnimi seminarji

ANN-KATHRIN DITTRICH, KGADI MATHABATHE, IRMA ELOFF IN EVI AGOSTINI

☞ Spletni seminarji so učinkovito digitalno orodje za učenje o trajnostnosti v globalnem kontekstu. Implementacija različnih tehnologij v izobraževanju učiteljev, kot so spletni seminarji, postaja nepogrešljiva zaradi digitalne transformacije in procesov internacionalizacije. V tem kontekstu so digitalne kompetence opisane kot ključne za kakovostno izobraževanje in trajnostno prihodnost. V izobraževanju učiteljev je malo dokazov o tem, kako je mogoče digitalna orodja uporabiti za učenje o trajnostnosti. Dveletna mednarodna študija o ciljih trajnostnega razvoja v izobraževanju učiteljev, ki temelji na projektu *Teach4Reach*, s predstavitvijo izbranih vinjet opisuje učne izkušnje v spletnih seminarjih. Vprašanje je, kako lahko digitalizacija podpira učenje o trajnostnosti v globalnem kontekstu kakovostnega izobraževanja. Ugotavljamo, da so spletni seminarji digitalno orodje, ki podpira pridobivanje znanja in sodelovalno učenje v mednarodnem kontekstu, vendar je treba prepoznati njihove posebne lastnosti. Vinjete ponazarjajo različne izzive in priložnosti, ki jih predstavljajo spletni seminarji, kot so: temeljna vloga moderatorjev, preprost dostop do spletnega okolja, različno vedenje udeležencev in pomanjkanje podatkov o učnih izidih.

Ključne besede: izobraževalci učiteljev, učenje v digitalnih kontekstih, trajnostni razvoj, mednarodni spletni seminarji, fenomenološka raziskava vinjet

Introduction

One necessary condition for engaging in economic, social, and cultural life is the ability to successfully navigate complex digital environments (OECD, 2015, p. 8). Teacher education has the task of responding to social, economic, and ecological developments such as digital transformation processes (Westa, 2020). Professional digital competences of educational stakeholders, such as teacher educators and teachers, are an essential part of quality education. They must obtain knowledge and expertise in how to effectively implement digital tools and various technologies for teaching and learning (Brevik et al., 2019; Cronje, 2022). Education stakeholders must creatively use technology to improve learning environments and facilitate knowledge production (Cervera & Caena, 2022; UNESCO, 2011).

Technology also plays an important role in meeting growing sustainability needs to achieve the Sustainable Development Goals (SDGs) of Agenda 2030. Here, information and communication technologies are described not only as key resources for quality education (SDG 4), but also as an essential aspect of other areas, such as Gender Equality (SDG 5), Infrastructure (SDG 9), Reduced Inequality (SDG 10), Peace, Justice, and Strong Institutions (SDG 16) and Partnership (SDG 17) (UNESCO, 2011, p. 3). Technologies have the potential to support innovative solutions that enable learners to take part in lifelong opportunities for quality education, to access information and knowledge, and to participate in society (Lebeničnik et al., 2015; UNESCO, 2011). This requires international exchange on global issues in teacher education. Internationalisation in teacher education is currently a well-known trend and is related to the associated process of globalisation. Internationalisation can also be seen as a key strategy for learning in a global context. Global transformation processes have stimulated a wide range of activities in teacher education, such as the internationalisation of curricula, as well as the expansion of curricula, field and internship experiences, and cross-border initiatives (Larsen, 2016, p. 397), which also support overcoming national histories and tradition (Louis & van Velzen, 2021). International dialogue with other stakeholders from different countries can support action for transformation because of the continuous creation of knowledge and can, therefore, support the transformation process. The International Commission on the Futures of Education (2021, p. 146) points out that 'it is by actively engaging in the dialogue and practice to build a new social contract for education that we can renew education to make just, equitable and sustainable futures possible'. Webinars are a tool that enables international exchange in the digital space. They can be described as a format that allows

dynamic interactivity between participants (Robideau & Matthes, 2021). With the help of webinars, learning in digital contexts can take place in the form of collaborative learning (Basmanova et al., 2020).

The project *Teach4Reach* builds on the collaborative value of digital learning contexts and sees webinars as an effective digital tool to engage with international educational stakeholders on the topic of sustainability in teacher education. As part of the project, four international webinars were conducted with the aim of sharing knowledge and experiences on sustainable development through collaborative learning and gaining an international vision of quality education. The rationale for this paper is a critical analysis of these webinars as digital tools in the context of teacher education: their collaborative value, their potential for quality education and possible obstacles and difficulties for international participants' learning in the virtual world. The question is the extent to which webinars are a suitable digital tool to exchange with educational stakeholders around the world on the topic of sustainability in teacher education programmes. In particular, the learning experiences of participants in a global context are in focus and are presented with the help of vignette research. In addition, the experiences of the project team are included in the discussion of the findings. A deeper understanding of lived experiences can potentially contribute to making digital learning environments more fruitful for high-quality teacher education in the future (Eloff et al., 2023).

Digital competences and sustainability in teacher education

Digitisation is leading revolutionary changes in the world of work and is attended by both challenges and opportunities. Research results indicate its positive effects: the quality of jobs in terms of worker productivity, efficiency and the use of different skills and task management (Blignaut & Trollip, 2003; Peña-Casas et al., 2018; Vuori et al., 2019). Over the past two decades, global transformations have promoted technological change and consequently prompted the internationalisation of teacher education (Larsen, 2016). Internationalisation is currently a vital topic related to teacher professionalisation and teacher competencies (Aydarova & Marquardt, 2016; Romano, 2002; Symeonidis, 2021; Winslade, 2016; Wiseman & Anderson, 2014). Educators must simultaneously operate in a global and digital world (Cervera & Caena, 2022). Various scholars point to the positive impact of international mobility and cultural experiences on teachers' professionalism (Slethaug, 2007). Chavez Chavez and O'Donnell (1987) emphasise the need for professional teachers to have international experiences in order to develop a range of cross-cultural skills, knowledge and competencies. However, a

professional teacher today not only requires knowledge and skills but also needs to be aware of changes and respond professionally to new developments and requirements (Westa, 2020). There is currently little agreement on how to define teacher quality (Flores, 2023) despite the fact that training professional teachers has received international attention (UNESCO, 2021). UNESCO (2011) defines digital competences as a key task for qualified teachers across the globe. The use of different technologies can support their life-long learning process as well as their access to information and knowledge for a sustainable future (UNESCO, 2011). However, there are different definitions and concepts of digital literacy today. Ferrari (2012, p. 3) defines digital competences as a ‘set of knowledge, skills, attitudes [...] to perform tasks; solve problems; communicate; manage information; collaborate; create and share content’. An important focus is on the confidential, critical, reflective, and effective use of technologies (Ferrari, 2012, p. 3).

Digitisation brings complex and long-term changes to teaching and learning and is described as a creative integration in education (Bosco et al., 2019, p. 55). Therefore, digital competences are considered key competences for teachers and other educational stakeholders, such as teacher educators (Carpenter et al., 2020). Teacher education has a significant impact on the quality of education and must support the acquisition of digital competencies. In this context, Ørnes et al. (2011, p. 42) point out that this is particularly evident in terms of collaboration and communication between students and teachers, easy access to information and literature, and greater diversity in the usage of settings and resources for effective learning. Although digital competences are considered essential, their incorporation into teacher education programmes is still patchy (Ottestad et al., 2014; Carpenter et al., 2020). Gisbert (2022) shows that the expertise of teacher educators in this field varies widely. Educators have knowledge about technology, but they do not know how to effectively incorporate technology into their teaching.

UNESCO (2011) advocates the need for teachers to acquire digital competences for a sustainable future and emphasises the increased personal development of different educational stakeholders through digital environments. In this context, an international, interdisciplinary, and collaborative discourse can be a strategy for knowledge creation and global developments against the backdrop of quality education (Eloff et al., 2023; UN, 2011; UNESCO, 2005). Quality education is essential for a sustainable future, as it can create environmentally responsible individuals and make a difference in education, according to UNESCO (2015). ‘Education can create individuals who are more aware, responsible, and have the potential to bring about the meaningful and required change in society’ (Kumar, 2020, p. 745).

To achieve the necessary transformation processes, Momtpoint-Galliard (2015, p. 105) also highlights the need for global discussions on education with his argument that ‘our vision of education is tied to our vision of society’. To break with old traditions and national ways of thinking and acting and to adopt new global perspectives, a transnational discourse can, therefore, be very valuable. It also supports the fifth pillar of learning from UNESCO (2012), which is to learn to change oneself and society for sustainability. Learning in a global context helps teachers, teacher educators and policymakers to gain insights into other educational frameworks and models and to share their knowledge and expertise in their field (Cervera & Caena, 2022; UNESCO, 2011). A key component of the modernisation of education is the role of various stakeholders in teacher education (European Commission, 2017). Their knowledge and competences fundamentally affect the professional development of (future) teachers (Leicht et al., 2019).

Learning in a global context through webinars

Webinars are a digital resource that supports learning environments in a global context. Gegenfurtner and Ebner (2019, p. 2) define webinars ‘as web-based seminars in which participants and facilitators communicate live over the Internet across distant geographical locations using shared virtual platforms and interact ubiquitously and synchronously in real-time via voice-over IP technology and web camera equipment’. They point to the added value of cross-border networking for collaborative learning. The use of webinars has increased significantly in recent years (Goe et al., 2018; Olson & McCracken, 2015). A not insignificant reason for this was the Covid-19 pandemic, which has given the digital turn a boost (Gegenfurtner et al., 2020). Spatial flexibility is an obvious advantage of webinars. Different interaction possibilities, such as breakaway discussion groups, digital whiteboards, polls, and screens, also support the social and collaborative learning process, in which participants can discuss and interact with each other (Basmanova et al., 2020; Gegenfurtner & Ebner, 2019; Säljö, 2019). Moreover, the dialogue in webinars will take place synchronously and in real time (McKinney, 2017, p. 48).

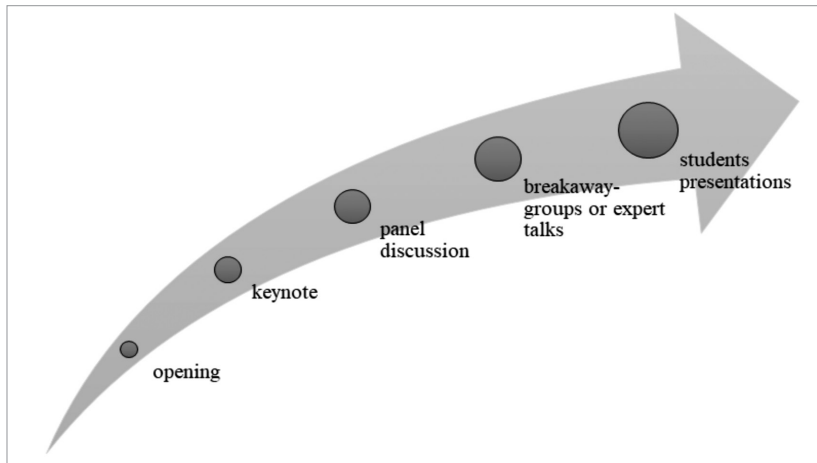
Webinars require planning in advance: scheduling the time and inviting participants. For participants, taking part seems to be very easy. They only need an internet connection and a digital device such as a laptop, tablet, or mobile phone (Gegenfurtner & Ebner, 2019, p. 2). Various studies point to positive learning experiences through webinars (Cornelius & Gordon, 2013; Gegenfurtner et al., 2018). However, the use of online and digital tools in education at all

levels urgently needs evidence-based development (Gegenfurtner et al., 2021). Gegenfurtner and Ebner (2019, p. 17) found that participants developed more knowledge and skills when the duration of webinars was longer, and the didactic tools used in the webinar were more variable. They also point out that webinars and face-to-face teaching were comparable in terms of learning effectiveness. Evaluation after each webinar is important for the quality of webinars.

The *Teach4Reach* webinars: Exploring synergies between teacher education programmes and the Sustainable Development Goals

Teach4Reach was a two-year project (May 2021–May 2023) between Austrian and South African partners and funded by Africa UniNet (OeAD). The project positioned teachers and teacher education as crucial for achieving the SDGs of Agenda 2030. Although all 17 global goals are relevant to education, the project focused on four SDGs in particular: Quality Education (SDG 4), Gender Equality (SDG 5), Reducing Inequalities (SDG 10) and Good Health and Wellbeing (SDG 3) (Eloff et al., 2023). The project aimed to raise awareness by constructing forward-looking research agendas, strengthening international collaborative networks, and promoting interdisciplinary scientific knowledge (Eloff et al., 2023).

As part of the project, four international webinars were conducted on SDGs 3, 4, 5, and 10. The aim was to share knowledge on sustainability through collaborative learning processes and to gain an international understanding of how to support quality education. The webinars gave the participants the opportunity to share ideas on how teacher education curricula can be reformed or designed to contribute to achieving the identified SDGs and guarantee high-quality education worldwide (Eloff et al., 2023). All webinars followed a similar structure (see Figure 1).

Figure 1*Structure of the Teach4Reach webinars*

After an opening and keynote speech from experts in the field of the respective topic and subsequent panel discussions, participants were invited to join between four and six different focus groups. These groups were characterised by the following questions: How can teacher education programmes be leveraged in the future to support Agenda 2030 and the Sustainable Development Goals? In what ways are the SDGs currently featured in teacher education programmes? How can the quality of education be supported and improved through teacher education programmes? What are university settings that implement the SDG, and what are the success stories of supporting the SDGs? (Eloff et al., 2022).

While all breakaway discussions were conducted in English, there were German-speaking and English-speaking rooms for the initial question on the support of Agenda 2030 and the SDGs. Through the online environment and the break-away groups, participants talked about different global sustainability topics and shared their knowledge and experiences on these subjects. In addition, they became acquainted with educational stakeholders from different continents. A facilitator guided the respective discourses in each break-away room. With the help of the facilitator in each group, a structured discussion took place, and a collaborative dialogue evolved. After the focus group discussions, the main findings from each room were presented by the facilitators in the plenary. The webinar concluded with a presentation by doctoral students on a sustainability topic.

Research problem

Based on the argument that educators need to be professional in a global and digital world and that digital literacy is central for teachers, this article explores how digitalisation can support learning on sustainability in a global context of quality education. As the literature indicates, the use of digital tools in education requires more research and evidence. This article focuses on webinars that enable international exchange and learning in a global context. Using a phenomenological approach, learning experiences are presented, and the extent to which digital environments can contribute to more effective implementation of qualitative teacher education is analysed.

Method

Participants

The participants of the webinars were education stakeholders such as pre-and in-service teachers, teacher educators and policymakers from around the world (see Table 1).

Table 1

Overview of participants

| Countries | Webinar 1 SDG4 | Webinar 2 SDG5 | Webinar 3 SDG10 | Total from each country |
|---|-------------------|-------------------|--------------------|----------------------------|
| Africa (South Africa, Uganda, Botswana, Kenya) | 62 | 16 | 15 | 93 |
| Asia (Singapore, United Arab Emirates) | 1 | 1 | 0 | 2 |
| Europe (Germany, Italy, Norway, Spain, Hungary, United Kingdom, France, Austria, Belgium) | 35 | 40 | 37 | 112 |
| North America (Canada) | 1 | 0 | 0 | 1 |
| Missing values | 8 | 0 | 0 | 8 |
| Total number of participants | 107 | 57 | 52 | 216 |

A total of 216 different stakeholders from Europe, Asia, North America, and Africa were involved in the discussions in all four webinars.

Instrument: Vignette Research

The study is based on phenomenological vignettes (Agostini, 2016a; Agostini et al., 2024), which made it possible to capture and analyse the learning experiences of the participants during the webinars. A total of 28 vignettes were collected online by one to three experienced researchers per breakout group during each of the four webinars (see Figure 1). In the *Teach4Reach* project, the different vignette researchers placed a special focus on the respective SDGs of each webinar. 'Vignette research does not attempt to deliver universally valid insights but rather explores the particular contained within the general. Since situational experiences are unique in their respective contexts, they cannot be generalized' (Agostini et al., 2024, p.2). For this paper, four vignettes from different webinars were selected to illustrate learning experiences in a digital and international context in an exemplary manner. The chosen vignettes bring out the particularity and singularity of learning on sustainability in selected webinars within a certain project while simultaneously providing access to a more general or universal meaning of learning in a global context of digital transformation in teacher education.

Ethical clearance was provided by the Ethics Committee of the Faculty of Education at *Teach4Reach* (EDU049/21). Additional approval for the study was granted by the *Teach4Reach* Survey Coordinating Committee on 4 June 2021. Participants were informed of the study at multiple time points, for example, through webinar invitations, on the webinar programme itself, and during the proceedings. Participants consented to the sessions being recorded and transcribed and to the vignettes being written and analysed. However, all persons depicted in vignettes are anonymised, and the exact contexts are described in such a way that vignettes cannot be traced back to specific places or circumstances.

Research Design

In the vignette methodology, observational data from co-experiential experiences are condensed into concise descriptions of experiential scenes called phenomenological vignettes. This means that the vignette includes those co-experiential experiences that affect the researchers as co-experiencers. Generally speaking, vignettes are written in situations in which the researchers themselves had experiences and learned from them. The significance of these experiences may elude the researchers, but they become visible in the actions and bodily expressions of the participants in the experiential situation, in their

posture, facial expressions and gestures, their looks and tone of voice. Vignette writers translate these actions, bodily expressions, as well as atmospheres and moods that are significant to an experiential scene into language in an aesthetically concise way. Vignettes are, therefore, selected as dense, aesthetically meaningful descriptions of the researcher's experience of what participants experienced in the field. Vignettes have very specific characteristics (e.g., duration and a particular theoretical understanding of experience as learning; see Meyer-Drawe, 2012) that enrich the text itself.

How is it possible for researchers to access shared experiences when they are not in the same room as the participants? Writing vignettes online risks losing sight of the experience and the research as a responsive event where all participants can gain insight about themselves, each other, and the world due to their physical corporeality. Some participants turned off their cameras and muted themselves during the webinars. Hence, glances no longer met, different statements were not responded to, sounds took on a different tone or faded away, and experiences were not perceived. Nevertheless, experiences do occur in online settings and can be brought into focus with the help of vignettes by making the visible and audible physical articulations of the participants and the noticeable atmospheres and moods perceptible. To make this possible, in addition to the best possible technical conditions, special sensitivity is required on the part of the researchers, a sensitivity that is able to perceive intermediate tones or discords and can express perceived inadequacies. In online settings, however, not all sensory modalities (e.g., smell or touch) come into play. For example, the researcher may be able to see another person's sweat in a virtual room but cannot smell it. When participants switch off their cameras, faces and their different expressions, such as raised eyebrows or movements of the lips, are no longer perceived. However, as people speak, the voice and its tonality do enable the vignette writers' experiences about experiences.

Vignette 1: Webinar on SDG 4

'I warmly welcome you to topic 2', trumpets Angelika, the facilitator of the German-language breakaway session, into the Zoom round. She frowns and narrows her eyes before her face relaxes into a broad smile. Her gaze wanders searchingly over the screen before she briefly introduces herself. She welcomes the experts from Austria who had been invited to this session, the two students Lisa and Verena, the teacher educator Sarah, and Lucas, a professor and UNESCO Chair for Global Citizenship Education. Then, after the short welcome, she turns to the other five people present at this session. 'I thought the experts might provide a little round of reflection,' Angelika invites. She shares

her screen and shows the audience a promotional video summarising the 2030 Agenda Goals, especially SDG 4. She then gives the floor to the invited experts, saying, 'I would be interested to hear what the four experts have to say'. Almost immediately, Lisa, one of the two students, then student Verena, and thereafter, the teacher trainer Sarah speak up. In addition, the South African professor requests to speak. The discussion revolves around 'lone wolfism' in teacher education, inequalities, and a lack of implementation of the SDGs, even in privileged teacher education programmes. Suddenly, the discussion stops. Lucas clears his throat: 'I'm actually quite happy that I was able to listen to you first,' he says thoughtfully before asking, 'What are the experiences?' He pauses, then continues, 'It's about habitus reflexive action or actions in need of being questioned.' He says with determination, 'It's not just about what doesn't work, but the question is, where can we discern and start?' (Vignette writer 1; Eloff et al., 2022, p. 6).

Vignette 2: Webinar on SDG 5

In the online breakout room, Paul has just finished presenting his gender equity success story: how he tries to deconstruct gender stereotypes in his teaching of legal education. His full-screen image zooms back to the ensemble of eight small windows showing seven people, one with a name. As Joan starts speaking, her image zooms to full-screen size, and she responds to Paul: 'This is very cognitive because you can learn later in life that these are the rules in society.' Her still upper body begins to move in rhythm with the flow of speech as she refers to learning through experience in early childhood: 'That is a much more intuitive way of learning who you should be. If we really want to change things, we need to start at that level.' When she continues, 'It is too late ...', Paul's image suddenly appears and covers the screen. He is leaning on his right elbow with his hand slowly stroking his moustache as he listens to Joan's account of her study with children. Joan's image appears back on the full screen; she refers to her findings that children already had strong negative perceptions of gender, 'Males more than females ... but also the females – they learn that from the day they are born.' After clarifying further details, she pauses. Bridging the silence while waiting for a response, she concludes, 'This is a complicated thing', narrowing her eyes and starting to laugh brightly. Serena, the facilitator of the session, hesitantly breaks the pause by taking over the full screen as she refers to 'This multi-faceted way of learning, looking at gender equity and equality...', gently moving up her arms, '... is making it so complex.' Her whole body follows the upward movements, and she slowly sits back on her chair, her face spreading into a smile, shrugging her shoulders. She concludes the session by

saying, 'We have more questions than when we started!' (Vignette writer 2; unpublished).

Vignette 3: Webinar on SDG 10

The computer screen is divided into four rectangular blocks. A face appears in each one. While the faces are not similar, each background predominantly displays white walls. Ilse begins the discussion with the question, 'Which success stories can you share in relation to SDG 10? These can be highlights, problems or challenges.' Thembi starts off by saying that she supports inclusive education. Her body moves slightly as she talks, and her hands move as she speaks. 'When education is provided, more people can contribute to the economy.' The discussion is slow to start. Sarah joins in. Now, there are five individuals in the group. 'Researchers have moved away from monolingual dominance,' she says, moving her hands to make her point. 'There is value in multilingualism and the ability to interact in different languages. The inclusion of different languages includes everyone. No one should feel inferior if they are allowed to use their own language.' The discussion moves on to access to education for the poor and disadvantaged, the availability of feeding schemes in schools and admission criteria, and funding for higher education in South Africa and Botswana. Botswana is Jabu's home country. Jabu, who is actively moving, shares his concern: 'When people get a university education but don't get any job opportunities, they can't repay their student debt. They become idle, which leads to poor outcomes.' As the discussion continues, he shares his belief that children should not be taught in their mother tongue. 'Mother-tongue education causes division between schools. To reduce inequality, everyone should speak the same language.' Thembi gives a slight laugh. 'Language can reduce job opportunities if you do not understand the language of the work environment.' On the topic of inclusion, she noted that 'teachers should be trained in more than the curriculum. They should also be trained in inclusion, disadvantages, and practicalities about teaching.' The discussion ends with Jabu, with a serious voice and the same strong movements: 'Inclusive education – accepting children with disabilities into a general classroom – will never work.' (Vignette writer 3; unpublished).

Vignette 4: Webinar on SDG 3

This is the breakaway session shortly after the expert panel discussion on 'Teaching Wellbeing'. Olivia has just been on the panel as one of the well-being experts and is now facilitating this open discussion session. '30 minutes with Dr Olivia Smit' is the title of the session. There are only two video screens open,

showing the people in the small virtual blocks. She and another participant, Livia. Olivia's screen fills most of the large frame with a row of six small blocks lined up underneath it, with arrows on the sides. Except for Livia's, the other small blocks only show the names and anonymous participant icons. There are no videos. Olivia wears soft-coloured pink glasses, and her dark brown wavy hair is tied back. Behind her, the room forms a corner with a large monochrome artwork framed on the left side. She starts the session, smiling straight at the camera. 'Let me hear what you are doing?' she enquires. One participant speaks up. She remains invisible behind her screen, but her name is displayed as 'Jasmin.' There are dogs barking in the background as she speaks. 'You mentioned your study on worthiness earlier,' says the participant inquisitively. 'How do you measure that?' Livia now also switches off her video. Olivia starts talking about *Photovoice* and how she has used it in her research. 'I am a feeling person,' she says softly. 'I am attracted to arts-based visual things.' She explains that in her work, participants are asked to take pictures of things that they think are valuable and then also pictures expressing vulnerability. She describes the different settings where she conducts her research. Livia now turns her screen back on. She wears white earphones that curl down through her long, brown, wavy hair as she looks down onto the screen through her tortoiseshell glasses. 'I share your view on wellbeing, especially when you said that the more you read, the more difficult it is to define,' Livia says. She asks about the ways in which counsellors are trained in South Africa. 'Because in Italy, it is not working,' Livia declares. Olivia enthuses, 'I feel so positive about this interaction.' She laughs heartily (Vignette writer 4; unpublished).

Analysis: Vignette reading

Vignette readings aim 'to value the fullness and richness of experience articulated in a vignette and to show this abundance in as many facets as possible and in different (Agostini et al., 2024, p.113). In this process of phenomenological analysis (Agostini, 2016b), researchers point to and reveal (Finlay, 2009, p. 11) the different meanings that can be attributed to what they perceive. They do not 'point out' or interpret; that is, they do not give definitive answers or explanations 'behind' or 'beyond' what is happening in the short scenes. Vignette readings start with specific actions or moments that are perceived and experienced: How are they described? How can they be understood? To gain a broader viewpoint, experiences and actions can also be considered from a theoretical perspective. The composition of the experiences is based on the network of actions in the vignette, which frames the experiences and allows something to appear as a particular something. Vignette readings attempt to understand

the potential for learning as experienced by individuals from a distance, differently, or 'anew', at the event (Eloff et al., 2023).

Results

In the following, the four vignettes of the webinars are analysed to illustrate different learning experiences. They are intended to provide a rich, personal perspective on what facilitates or impedes understanding of the topics discussed during the online sessions. The following questions take centre stage:

What can we learn from a situation when we step back from what we believe to know in order to be able to look at it anew?

What can a situation tell us when we give specific consideration to corporeality and the associated atmospheres and moods that impact and affect us?

In doing so, vignette research uses phenomenological ways of thinking and perceiving to explore the lived experience of quite familiar everyday situations. Vignettes, as well as vignette readings, attempt to make scientific observation accessible by avoiding abstracting linguistically data from the living world. Vignette readings, however, as intellectual generalisations on a meta-level would leave the multifaceted lifeworld of the persons described behind.

The facilitators depicted in the vignettes do not always have an easy time leading the breakout sessions during the webinars; they have to inform and motivate participants at the same time, especially in a (virtual) space that allows the participants to withdraw into invisibility and anonymity at the touch of a button. Dr Olivia Smit from Vignette 4 is in such a situation. Although she is '*attracted to arts-based visual things*', she has to manage almost without pictures in her session (*except for Livia's, the other small blocks show only the names and anonymous participant icons*) and with various background noises (*there are dogs barking in the background as she speaks*). Why did the other participants switch off their cameras during the webinar, or why did noises be heard remain open in the vignette? Is this perhaps due to insecure handling of the digital tool (e.g., turning the sound on or off), lack of equipment (no camera) or lack of self-confidence with the new medium of webinars? Or maybe the person feels insecure about the topic and does not want to participate in the discussion. Olivia does not let this situation discourage her and continues to talk about her research with commitment, describing *the different settings in which she conducts her research*. Livia seems to be affected by this and switches her camera back on after having turned it off briefly. There is an exchange of experiences between counsellors working in South Africa and Italy. The vignette ends with Olivia's statement, '*I feel so positive about this interaction,*' and a hearty laugh.

What exactly was learned (on sustainability) in the scene described remains unclear. However, it seems that within a largely anonymous group, two people have opened up to an exchange of experiences linked to positive emotions, people who might never have crossed paths in physical space.

Online webinars also place high demands on facilitators in that they have to follow and, above all, moderate complex discussions on complex topics. Vignette 3 gives the impression that different participants sometimes address very different topics on SDG 10. Additionally, it appears that participants sometimes take contrary positions or talk past each other. A participant may already have formed a firm opinion from which she no longer wants to deviate. (*Inclusive education – accepting children with disabilities into a general classroom – will never work.*) This makes it difficult to have a real exchange that challenges previous opinions and allows participants to experience something new and learn from each other. It is questionable whether the online setting favours contrary positions or also makes it possible to honestly express one's own views without having to agree with the other. In any case, when it comes to the quality of teacher education, these discourses should not move only on the surface. In this context, it is especially important for the facilitator to support the discussion professionally in order to bring all the different opinions together into a common framework. It is also important that the various participants, with their different voices, feel heard.

The fact that a person who speaks or (un-)intentionally makes noises is given visual preference on the Zoom online platform is illustrated in vignette 2: *As Joan starts speaking, her image zooms to full screen and reacts to Paul.* This scene also presents two contrasting positions, this time in connection with gender equality: cognitive and intuitive learning. Serena, the facilitator, acts as a mediator who tries to appreciate both positions and underlines the complexity of the issue. By the end of the breakout session, the participants did not arrive at any final answer (*We have more questions than when we started!*), but experiences had been shared, and it seemed as if different perspectives had been heard. In online sessions, however, it can also happen that a few people claim the entire virtual space for themselves while others do not have a chance to speak at all. Again, facilitators like Serena have the task of interrupting (awkward) pauses (*Serena, the facilitator of the session, hesitantly breaks the pause by taking over the full screen...*) and dividing the speaking parts among the different participants.

Vignette 1 illustrates in particular that in webinars, very different groups of people (*professors, teacher educators, students*) with different knowledge can meet in a relatively uncomplicated way and can also communicate on a comparatively

flat level on a common topic. After a short introduction to the topic of the contribution of teacher education programmes in the future, the two students Lisa and Verena immediately participated in the discussion and responded to the questions of the facilitator, Angelika. The participants share different perspectives on different topics. (*The discussion revolves around lone wolfism in teacher education, inequalities, and a lack of implementation of the SDGs, even in privileged teacher education programmes.*) However, webinars can become difficult when interaction suddenly stops. (*Suddenly, the discussion stops.*)

Discussion and Conclusion

Digitisation has transformed the way we teach and learn and has influenced our understanding of education. Against this background, educational stakeholders, such as teachers and teacher educators, need different knowledge and skills related to the use and implementation of digital tools (Brevik et al., 2019; Ottestad et al., 2014). Sustainable development as a crucial part of education – and of quality education in particular – increases the demand for digital competences (UNESCO, 2021). Digitisation brings new opportunities and challenges for education. It not only changes teaching and learning practices but also opens new ways for personal development and life-long learning processes (UNESCO, 2011). In addition to the required knowledge and skills, digital competences also include a critical, effective, confident, reflective, and ethical approach to technology (Ferrari, 2012). Scholars emphasise that webinars are a digital tool that enhances the learning environment and supports knowledge building in an international context (Cervera & Caena, 2022). In the global discourse on the quality of education, it is becoming increasingly important for education stakeholders to meet current and future requirements (Symeonidis, 2021; Westa, 2020). As the International Commission on the Futures of Education (2021) argues, it supports international dialogue and the transformation process in education. In the *Teach-4Reach* project, webinars were understood as a digital tool that enables international exchange and the creation of new knowledge and collaborative learning (Basmanova et al., 2020; UN, 2011; UNESCO, 2011). The need for global exchange is also pointed out by Chavez Chaves and O'Donnell (1998), who highlight the importance of cross-cultural skills, knowledge, and competencies for educational stakeholders. As Gegenfurtner and Ebner (2019) emphasise, a key added value of webinars is international networking and, consequently, collaborative learning opportunities. Webinars enable participants from all over the world to exchange ideas on various topics. With the help of interaction opportunities like breakaway discussions, opinions, and experiences on specific and current topics such as

the SDGs can be discussed in real time in an international dialogue (McKinney, 2017), with few financial resources. They also promote the digital competences of the participants as they learn new techniques and skills for their own teaching (UNESCO, 2011).

Based on the four exemplary descriptions of learning experiences, the vignettes show various success factors, as well as challenges for online learning in an international context. Facilitators play an essential role in conducting webinars professionally. A professional facilitator who can deal with and support technical difficulties, motivate people to talk and participate, bring together options, and summarise discussions well seems to be crucial for successful learning. The vignettes underline that even if the technology is tested in advance, participants often experience technical difficulties, which make the exchange of ideas between them difficult. The vignettes also illustrate how participants dare to speak in the digital space (perhaps more than in the 'real world') in a group with different professions. The option to turn off the camera provides protection and anonymity. However, turning off the camera can also be interpreted as being unwilling to show oneself and may appear passive to other people. As highlighted in the vignettes, it is also often the case that individuals hijack communication and cause other participants to withdraw more.

During the *Teach4Reach* webinars, research members identified other disadvantages and challenges for digital webinars on sustainability that have not been mentioned in any research literature to date. Unlikely, informal and spontaneous conversations take place in virtual spaces. This limits the exchange and focuses it on the essentials. It is precisely in informal conversations that new perspectives can emerge. In addition, conversations at the end of breakout rooms very often have to be interrupted due to time constraints and can not be completed. Here, too, the importance of a facilitator who enables conversations to be structured in such a way that they can be completed within the given timeframe becomes apparent. In addition, it is often helpful to allow adequate time for discussion.

The experiences condensed in the vignettes highlight that webinars are a digital tool that supports knowledge creation as well as collaborative learning processes in a global context. Nevertheless, it is (rather like in a real situation) difficult to state what participants have learned and what information they take away from the discussions. Moreover, it is impossible to predict the actual moment of the learning experience; it can only be reflected in retrospect. However, the vignette is an instrument that helps to capture such an experience with all the senses by co-experiencing it in as much detail as possible in order to grasp its essence. Webinars also help to develop and reflect on the digital skills of

those involved in education. They enable them to apply their knowledge and skills in the digital space, to interact with other people, to exchange opinions and content, to find their role, and to seek solutions to technical problems. It has been shown that the reflective and critical approach of the participants is particularly important for their professional development, both in their use of digital tools and in their handling of the content discussed. The results also show that the quality of webinars also depends on the participants. Participants who are actively involved and motivated to share ideas and connect with others increase the quality of the webinar content. It seems that active participants do not allow themselves to be influenced in their own behaviour by technical errors or passive and invisible people. Interruptions have an impact on time in particular, as technical faults are perceived as very time-consuming.

Through the planning, delivery and subsequent reflection processes of the webinars, the project team gained experience in using this digital tool in the field of teacher education. As Gegenfurtner and Ebner (2019) point out, good organisation in advance increases the quality of the webinars. We experienced that it is important that facilitators are trained in their (new) tasks and that the technology is tested in advance. In this respect, people who are already skilled in the use of digital tools are needed. It turned out that the preparation of these people can be very time-consuming. Professional facilitators need to be meta-reflective about the use of digital tools in terms of pedagogy and means for learners. They should be knowledgeable about the technology used, know how to get help when problems arise and know how to interact with learners. In order to support learning, an understanding of learning and teaching in the digital space is of great importance. Facilitators also need strategies to motivate participants to take an active part in the debate, as well as the skills to lead and guide discussions in a professional manner. A targeted post-webinar evaluation helped the project team to identify conditions for success as well as difficulties with regard to the webinars. After each webinar, the team changed some parts of the webinars to improve their quality. The project team experienced webinars that lasted two or three hours, with contributions from experts and space for participants to dialogue with other participants, offering a structure in which the participants could learn from each other. In general, it is important to give participants clear instructions in advance on how to take part in the webinar and what the technical requirements are (Gegenfurtner & Ebner, 2019). For this purpose, the participants received detailed information on how to register and what technical resources they need.

The use of vignettes as a research tool in the study has proven to be very fruitful in researching selected (learning) experiences. However, one of the

limitations of this approach is represented by the type of writing that requires a mature epistemological posture, as well as an ability to capture the co-experiential experience in written form and through a refined structure and style. Moreover, the raw vignette must be shared by the researcher within a resonance group for the intersubjective validation of it. The challenge that phenomenological vignette research faces is to expand into different and transdisciplinary fields of research and to create a network of researchers who use research to address complex areas and issues while retaining this complexity.

In the *Teach4Reach* project, webinars can be seen as one way of realising quality education in a global context. Quality education means equipping learners with knowledge and skills and accepting and identifying diverse perspectives and backgrounds (UN, 2022; UNESCO, 2021). Addressing specific sustainability issues in the context of quality education helps educational stakeholders to become more aware of this topic and acquire new knowledge, which can subsequently initiate changes in education and society (Kumar, 2020). Digitalisation can support this process. It helps education stakeholders acquire different digital skills and allows digital tools such as webinars to bring together different international stakeholders. These international experts then have the opportunity to reflect on the content, share knowledge and experiences, and acquire new perspectives.

Disclosure statement

The authors have no conflict of interest to declare.

References

Agostini, E. (2016a). *Learning in the field of tension between finding and inventing. On the creative genesis of meaning in the course of experience*. Ferdinand Schöningh.

Agostini, E. (2016b). Reading vignettes: Reflective approaches to the experience of learning. In S. Baur & H. K. Peterlini (Eds.), *At the side of learning. Experience protocols from teaching in South Tyrolean schools - a research report*. Erfahrungsorientierte Bildungsforschung Vol. 2 (pp. 55–62). StudienVerlag.

Agostini, E., Schratz, M. & Eloff, I. (2024). *Vignette Research. Research Methods*. Bloomsbury.

<https://doi.org/10.5040/9781350299412>

Aydarova, E., & Marquardt, S. K. (2016). The global imperative for teacher education: Opportunities for comparative and international education. *FIRE: Forum for International Research in Education*, 3(1). <http://preserve.lehigh.edu/fire/>

Basmanova, A., Grunina, Y., & Kargovskaya, E. (2020). Digital learning: Students' assessment of

- webinars and web conferences as a tool for acquiring knowledge and skills universal. *Journal of Educational Research*, 8(12), 6960–6966.
- Blignaut, A. S., & Trollip, S. R. (2003). Measuring faculty participation in asynchronous discussion forums. *Journal of Education for Business*, 78(6), 347–353.
- Bosco, A., Santiveri, N., & Tesconi, A. (2019). Digital making in educational projects. *Center for Educational Policy Studies Journal*, 9(3), 51–73.
- Brevik, L., Björk, G. Lund, A., & Stromme T. (2019). Transformative agency in teacher education: Fostering professional digital competence. *Teaching and Teacher Education*, 86, Article 102875.
- Carpenter, J. P., Rosenberg, J. M., Dousay, T. A., Romero-Hall, E., Trust, T., Kessler, A., Krutka, D. G., Morrison, S. A., Fischer, C., & Krutka, D. G. (2020). What should teacher educators know about technology? Perspectives and self-assessments. *Teaching and Teacher Education*, 95, 1–13.
- Cervera, M., & Caena, F. (2022). Teachers' digital competence for global teacher education. *European Journal of Teacher Education*, 45(4), 451–455.
- Chavez, R., & O'Donnell, J. (1998). *Speaking the unpleasant: The politics of (non)engagement in the multicultural education terrain*. State University of New York Press.
- Cornelius, S., & Gordon, C. (2013). Facilitating learning with web conferencing recommendations based on learners' experiences. *Education and Information Technologies*, 18, 275–285.
- Cronje, J. (2022). From face-to-face to distance: Towards flexibility in five dimensions of blended learning: lessons learnt from the Covid-19 pandemic. *Electronic Journal of e-Learning*, 20(4), 436–450.
- Eloff, I., Agostini, E., Dittrich, A.-K. & Mathabathe, K. (2023). Vignettes of Gender Equality, Wellbeing and Teaching. In Mayer, C. H., Vanderheiden, E., Braun-Lewensohn, O., Chen, G., Sueda, K., Mangoloth, B., Safdar, S. & Kim, S. (Eds), *Women Empowerment for a Sustainable Future World: Transcultural Positive Psychology Perspectives*. Springer. https://doi.org/10.1007/978-3-031-25924-1_38
- Eloff, I., Mathabathe, K., Agostini, E. & Dittrich, A.-K. (2022). Teaching the Global Goals: Exploring the Experiences of Teacher Educators in an Online-Environment through Vignette Research. *Environmental Sciences Proceedings*, 15(1), Article 5. <https://doi.org/10.3390/envirosciproc2022015005>
- European Commission. (2017). *Commission staff working document. Communication on School development and excellent teaching for a great start in life*. European Commission. <http://eur-lex.europa.eu/legal-content/FI/TXT/?uri=CELEX%3A52017SC0165>
- Ferrari, A. (2012). *DIGCOMP. A framework for developing and understanding digital competence in Europe*. Publications Office of the European Union.
- Finlay, L. (2009). Debating phenomenological research. *Phenomenology & Practice*, 3(1), 6–25.
- Flores, M. (2023). Unpacking quality in teacher education. In J. Madalińska-Michalak (Ed.), *Quality in teaching and teacher education* (pp. 32–49). Schöningh.
- Gegenfurtner, A., & Ebner, C. (2019). Webinars in higher education and professional training: A meta-analysis and systematic review of randomized controlled trials. *Educational Research Review*, 28, Article 100293.
- Gegenfurtner A., Narciss, S. Fryer, L., Järvelä, S., & Harachiewicz, J. (2021). Affective learning in digital education. *Frontiers in Psychology*, 11, Article 630966.
- Gegenfurtner, A., Schwab, N., & Ebner, C. (2018). “There’s no need to drive from A to B”: Exploring

- the lived experience of students and lecturers with digital learning in higher education. *Bavarian Journal Applied Sciences*, 4, 310–322.
- Gisbert, M. (2022). *Technology ecosystems to rethink universities in the digital age. GUNi world report special issue. New visions for higher education towards 2030*. GUNi.
- Goe, R., Ipsen, C., & Bliss, S. (2018). Pilot testing a digital career literacy training for vocational rehabilitation professionals. *Rehabilitation Counseling Bulletin*, 61, 236–243.
- International Commission on the Futures of Education. (2021). *Reimagining our futures together: a new social contract for education*. UNESCO.
- Larsen, M. (2016). Globalisation and internationalisation of teacher education: a comparative case study of Canada and Greater China. *Teaching Education*, 27(4), 396–409.
- Lebeničnik, M., Pitt, I., & Starčič, I. (2015). Use of online learning resources in the development of learning environments at the intersection of formal and informal learning: The student as autonomous designer. *Center for Educational Policy Studies Journal*, 5(2), 95–113.
- Leicht, A., Heiss, J., & Won J. B. (2018). *Issues and trends in Education for Sustainable Development*. Unesco Publishing.
- Luis, K., & van Velzen, B. (2012). *Educational policy in an international context: Political culture and its effects*. Palgrave Macmillan.
- Kumar, C. (2020). Scope of education for sustainable development. In W. Leal Filho, A. M. Azul, L. Brandli, P. G. Özuyar, & T. Wall (Eds.), *Quality Education* (pp. 741–752). Springer International Publishing.
- McKinney, W. P. (2017). Assessing the evidence for the educational efficacy of webinars and related internet-based instruction. *Pedagogy Health Promotion: The Scholarship of Teaching and Learning*, 3, 47S–51S.
- Meyer-Drawe, K. (2012). *Diskurse des Lernens [Discourses of learning]* (2nd ed.). Wilhelm Fink.
- Montpoint-Galliard, P. (2015). Transversal attitudes, skills and knowledge (TASKs) for a democratic culture and intercultural understanding. In F. Arató & A. Varga (Eds.), *Inclusive university: How to increase academic excellence focusing on the aspects of inclusion* (pp. 105–114). Bolko-Print Press.
- OECD. (2015). *Students, computers and learning. Making the connection*. OECD Publishing.
- Olson, J. S., & McCracken, F. E. (2014). Is it worth the effort? The impact of incorporating synchronous lectures into an online course. *Online Learning*, 19(2). <https://doi.org/10.24059/olj.v19i2.499>
- Ørnes, H., Wilhelmsen, J., Breivik, J., & Solstad, K. J. (2011). *Digital tilstand i høyere utdanning 2011: Norgesuniversitetets monitor [Digital state of higher education 2011: The Norwegian University Monitor]* (vol. nr. 1/2011). Norgesuniversitetet.
- Ottestad, G., Kelentrić, M., & Guðmundsdóttir, G. (2014). Professional Digital Competence in Teacher Education. *Nordic Journal of Digital Literacy*, 9(4), 243–249.
- Peña-Casas R., Ghailani D., & Coster S. (2018). *The impact of digitalisation on job quality in European public services. The case of homecare and employment service workers. Final Report*. European Social Observatory (OSE) and European Public Service Union (EPSU).

- Robideau, K., & Matthes, K. (2021). Using webinars to teach extension audiences: A rubric to evaluate and improve. *Journal of Human Sciences and Extension*, 9(2), Article 10.
<https://doi.org/10.54718/WADO4568>
- Romano, M. (2002). Training teachers for quality education in Europe. *European Journal of Teacher Education*, 25(1), 11–17.
- UN. (2011). *Education for sustainable development. An expert review of processes and learning*. United Nations.
<https://sdgs.un.org/publications/education-sustainable-development-expert-review-processes-and-learning-17696>
- UN. (2022). *Transforming education summit*. United Nations.
<https://www.un.org/en/transforming-education-summit/sg-vision-statement>
- UNESCO. (2005). *Contributing to a more sustainable future: quality education, life skills and education for sustainable development*. UNESCO.
- UNESCO. (2011). *ICT competency framework for teachers*. UNESCO.
<https://unesdoc.unesco.org/ark:/48223/pfo000265721>
- UNESCO. (2012). *Education for sustainable development. Sourcebook. Learning & training tools N°4 – 2012*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pfo000216383.locale=en>
- UNESCO. (2021). *Teachers have their say: motivation, skills and opportunities to teach education for sustainable development and global citizenship*. UNESCO.
- UNESCO Institute for Statistics. (2021). *SDG 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*. UNESCO.
<http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2020/09/Metadata-4>
- Säljö, R. (2019). Materiality, learning, and cognitive practices: Artifacts as instruments of thinking. In T. Cerrato-Pargman & I. Jahnke (Eds.), *Emergent practices and material conditions in learning and teaching with technologies* (pp. 21–32). Springer.
- Symeonidis, V. (2021). *Europeanisation in teacher education. A comparative case study of teacher education policies and practices*. Routledge.
- Vuori, V., Helander, N., & Okkonen J. (2019). Digitalization in knowledge work: the dream of enhanced performance. *Cognition, Technology & Work*, 21(2), 237–252.
- Westa, S. (2020). *Professionalisation through internationalisation in teacher education*. The International Project.
https://www.frse.org.pl/brepo/panel_repo_files/2021/05/14/bohwh30/tepe-tom-1-online-westa-sina.pdf
- Winslade, M. (2016). Can an international field experience assist health and physical education pre-service teachers to develop cultural competency? *Cogent Education*, 3(1), Article 1264172.
<https://doi.org/10.1080/2331186x.2016.1264172>
- Wiseman, A. W., & Anderson, E. (2014). *Annual review of comparative and international education 2014*. Emerald Groups Publishing Limited.

Biographical note

ANN-KATHRIN DITTRICH, PhD, is a Senior Scientist in Teacher Education and School Research at the Faculty of Teacher Education, University of Innsbruck, Austria. Her research interests include international teacher education with a focus on quality education, sustainability, wellbeing and the professional knowledge and actions of educational stakeholders.

KGADI CLARRIE MATHABATHE, PhD, Is the Director of Student Affairs and an extraordinary lecturer in Chemistry at the University of Pretoria. Her research interests are education for sustainable development, inquiry based science education and pedagogical and student developmental strategies that promote student success.

IRMA ELOFF, PhD, is a professor of Educational Psychology at the University of Pretoria, an adjunct professor at the University of Innsbruck and a registered educational psychologist. Her research focuses on sustainability sciences, especially health and wellbeing and quality education.

EVI AGOSTINI, PhD, is Associate Professor at the Department of Teacher Education and the Department of Education at the University of Vienna and coordinator of the International phenomenological Vignette and Anecdote Research Network (VignA). Her main research interests lie in the areas of (Phenomenological) Learning and Teaching Research, Teacher Education and School Development, Aesthetic Education, Pedagogical Ethics and Sustainability.