



Drama as a transformational capability of sustainability science

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Abstract

Education for sustainable development (ESD) is a foundational aspect of the transformatory capability of sustainability science at the individual and group levels. Despite international frameworks to promote and monitor the development of sustainability competences, evidence of the efficacy of ESD remains limited and even challenging. This article proposes drama-based educational approaches, as part of an increasing body of arts-based methods used in sustainability science, which materially impact a wide range of sustainability competences. Drama is a practice-based approach that intentionally uses carefully designed educational activities involving body, story, interaction, and collaboration to generate sustainability awareness, knowledge, mindsets, and action taking for individuals and groups within higher education. Examples of applied drama practices can include various forms of role play, forum play (playing out roles and pausing/fast-forwarding/reversing to explore possible solutions), and legislative theatre (where participants collaborate with lawmakers to address local issues). This article draws on an international project applying drama methods across disciplinary areas, and outlines how drama methods may contribute to sustainability competences applied in practice. As a result of this, we propose further research to inform future high-impact practices of applied drama for the field of ESD.

Keywords Applied drama · Sustainability competences · GreenComp · Higher education

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Global call for new transformative approaches in higher education

The transformatory function of sustainability science is conceptualized at the foundational level around individuals and groups, and more specifically, their capabilities for the transformation of wider systems (Orr and Burch 2025). Within this frame, the field of education for sustainable development (ESD) commonly recognizes the ‘wickedness’ of sustainability issues, along with transformative and transgressive educational approaches, which deal with complexity, uncertainty, volatility, and ambiguity, as well as the need to integrate different forms of personal-experiential and scientific knowledge (Lotz-Sisitka et al 2015). The scale of this challenge is indicated in the international initiatives to promote these capabilities, such as through the European Union’s framework of green competences, GreenComp. Here, a competence is defined as empowering learners “to embody sustainability values, and embrace complex systems, in order to take or request action that restores and maintains ecosystem health and enhances justice, generating visions for sustainable futures” (Bianchi et al. 2022, 12). GreenComp outlines twelve competences under four areas:

‘embodying sustainability values’, ‘embracing complexity in sustainability’, ‘envisioning sustainable futures’, and ‘acting for sustainability’, with further specification of knowledge, skills, and attitudes.

The field of ESD in the higher education sector has been identified as having distinctive contributions to make in terms of forming the competences to be enacted through wider sociocultural systems, by educating practitioners and senior leaders of the present and the future (Grunwald et al. 2025). At the same time, and despite having international frameworks of what competences to develop and monitoring higher educational progress in this sphere, there is increasing evidence questioning the efficacy of education to transform the sorts of sustainable behaviors needed in society (van Valkengoed and Steg 2019; Gallagher and Balt 2025). In the face of this evidence, we argue that the competences—as articulated through GreenComp—are not typical in higher education, partly because teachers in higher education focus on disciplinary knowledge rather than tackling ‘wicked problems’. There is now a global call for a stronger focus on educational approaches directly designed to tackle the transformative capabilities (Lotz-Sisitka et al. 2015; Wall et al. 2025).

This article examines the role of drama, as part of an increasing body of arts-based methods used in sustainability science (Wiek et al 2011; Polido et al 2025; van Beek 2025), which materially impacts a wide range of sustainability competences.

Applied drama as a response

UNESCO advocates the application of “arts education principles and practices to contribute to resolving the social and cultural challenges facing today's world” (2010: 8). This flows from a two-decade-long critique which recognizes that cultural strategies are not ordinality explored in sustainability science (e.g. Flor 2004). Recent work builds on this critique to propose that environmental communication needs to move “beyond talk and text” to develop agency and enable behaviour change (Fischer et al. 2024: 1882). In dealing with complex sustainability challenges, these understandings need to draw on multi-level, multi-stakeholder, and multi-modal interactions which have both covert but ostensibly covert power structures at play, and typically involve elements of disagreement and conflict (ibid.). UNESCO’s recommendation, above, then, draws attention to the way arts-informed teaching is based not only on logic and rationality, but also knowing derived from the body and senses. Within an ‘aesthetic paradigm’, cognitive, affective and embodied aspects are not seen as opposed or contradictory, but as mutually dependent and complementary forms

of knowledge and learning, or in other words, a fusion of thinking, feeling, and doing.

Within this field, applied drama is an arts-based teaching approach based on play, stories, and games. It is closely related to applied theatre, although in drama work there is usually no manuscript or rehearsal, and no external audience. Applied drama is based on improvised interaction in a fictional context, where devised scenes are played in front of the other participants. It uses traditional games and exercises developed for actor training, always adapted to the particular context. Applied drama includes embodied and verbal interaction and reflection and is often designed to experience different perspectives and dilemmas. It allows participants to explore real problems, but from a safe position in a fictive situation (Wall et al. 2025). As such, it affords appropriate learning space for sustainability challenges which have multiple interactions impacting agency typically involving disagreement and conflict (as outlined by Fischer et al. 2024). To scientifically know or cognitively understand that something needs to change is insufficient to change behaviour. This is a core problem related to many complex sustainability issues. Applied drama is a resource to directly tackle this problem (Österlind 2008). Through embodied drama work, like physically visualizing multifaceted, entangled issues and conflicts of interests, including practical and intellectual obstacles, and sorting out priorities based on facts and values—in and through embodied action—the gap between knowing and doing can be bridged (e.g. Gallagher and Balt 2025). At the same time, using applied drama in the context of sustainability challenges which already have agreed or algorithmic solutions (e.g. how many trees to plant to offset carbon emissions) would not necessarily provide clear-cut answers, but can be used to explore and address the wider, societal interactions which may be typically hidden and taken for granted, and which ultimately prevent change.

Active participation in creative and holistic interaction and imagination in fictive contexts are the core elements of learning in applied drama. The embodied and dialogical imagination and meaning-making in collectively created fictive situations integrate knowledge through the body, mind, senses, emotions, creativity, and imagination (Flor 2004; Fischer, et al. 2024). As such, we argue that applied drama can be characterized as: (1) process oriented—preplanned by teacher, adapted/driven by participants, (2) interactive—embodied activity, intense communication in fictive situations, (3) holistic—addressing body, mind, senses, emotions, creativity, and imagination, (4) reflective—analysing actions, reactions, driving forces, and effects all levels, and (5) transformative—integrating personal experiences, theory, and action (Wall et al. 2025). Moreover, we argue that such a characterization addresses most of the sustainability competences defined in GreenComp and thus can be

a valuable pedagogical approach and asset for higher education (as shown in Fig. 1).

As shown in the key attributes above, applied drama offers opportunities for learners to empathize with other persons or other species (Lehtonen 2021): in other words, more-than-human perspectives (i.e. multi-stakeholder/model, Fischer et al. 2024). This competence relates to valuing sustainability, promoting nature, and embracing complexity of sustainability issues and critical awareness of cultural origins.

We have found that reflection in and on drama action is essential for deepening learning experiences. Critical awareness is fostered through a process of personal inward reflection, expressing oneself in interaction, post-reflection after collective creation (i.e. exploring multiple, often hidden dimensions of agency, Fischer et al. 2024). Reflection may focus on analysing actions, reactions, driving forces, or effects at all levels and thus opens for a critical view on personal and sociocultural values and mindsets (Lehtonen 2021). Thereby, drama can embrace experiential understanding of complexity in sustainability and foster systemic and critical thinking and problem framing.

Through improvisation, drama can elevate skills for exploratory thinking and attitudes for coping with uncertainty, which is highly relevant for envisioning sustainable futures (Fries and Wall 2023). Sustainability issues can evoke strong tensions and challenging emotions, and applied drama can offer safe and creative spaces to explore these issues (i.e. exploring the disagreements and conflicts

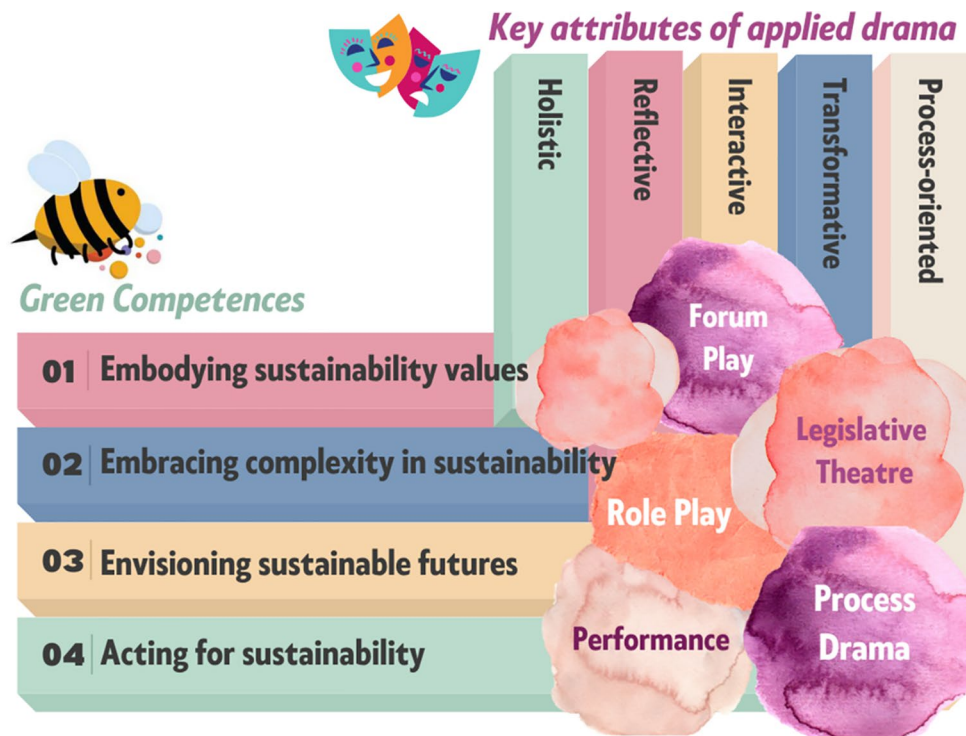
related to agency, Fischer et al. 2024). Moreover, creative and improvisational practices encourage exploratory and relational thinking and core sustainability competences.

The learning process of applied drama is interactive and open-ended, the teacher pre-plans the practices but adapts to the participants' initiatives and collective process. In this way, learning in drama can be transformative, because it integrates personal experience, theory, and action. Drama allows learners to rehearse and embody change in fictive and imaginary contexts, and from a sustainability perspective this enables individual action, collaboration, and political agency (Fries and Wall 2023). Because of this attention to creating a safe space, and a balance of careful planning (allowing to attend to specific needs) and emergence in the moment, applied drama has been used with a wide range of people, including powerful stakeholders (e.g. lawmakers) as well as vulnerable communities impacted by those in power (e.g. those impacted by mining) (see Wall et al. 2025).

Embodied processes and practices which integrate forms of knowledge

Applied drama contains different genres or types of drama, such as process drama, role play, and forum play (Wall et al. 2025). Process drama, but also role play and forum play, use various drama conventions such as playful ice breakers, still images, visualizations, movement exercises, storytelling, and improvisations in pairs, small groups, or whole class.

Fig. 1 How forms of applied drama align to attributes of applied drama and GreenComp



Role play is a wide and flexible concept, fairly well known in higher education. While learning in higher education can be highly structured and predicated on facts, assignments, and tests, role play in a drama context often emphasizes the aesthetic, social, or emotional aspects (Österlind 2008). Evidence to date highlights that students using role play have developed heightened systems thinking and anticipatory, normative, strategic, and interpersonal competencies (Gordon and Thomas 2018). Role play is particularly suitable for addressing complexity and embodying sustainability values, and can be combined with a variety of teaching and learning contexts.

Process drama is especially suitable for educational purposes. It has been widely used in schools, and extensive research shows the learning benefits (Freebody 2023). However, in higher educational and international contexts, the use of process drama is relatively unknown outside of the domain. In process drama, a theme is explored through creating and living through a story. Teachers and students work together in and out of role to experience and develop different aspects of the story. Creating shared in-role experiences is a core learning benefit of process drama and is a useful method to embrace complexity and envision sustainable futures.

Forum theatre, part of the ‘Theatre of the Oppressed’, developed by Augusto Boal, is especially designed to promote participatory action taking, a sustainability competence in GreenComp. Forum theatre is a rehearsed performance, ending in a conflict situation. The audience is then invited on stage to try to find a better solution. It is designed to prepare for reality, where dealing with oppression can be explored and different solutions tried out in the protective container of fiction. Legislative theatre is an extension of Forum theatre, and refers to a rehearsed, devised play which addresses a specific, problematic topic, often of local concern. This is performed to an audience of local citizens as well as people in power such as politicians and lawyers, to achieve real change—literally acting for sustainability.

Forum play, a slightly different version of Forum theatre, is where the participants develop brief scenes, depicting issues important in their own lives, and show them to their peers (Wall et al. 2025). The scenes are played and replayed again with different possibilities to solve the conflict and are elaborated through participants’ actions and reflections. Forum play is useful because it allows for learners to explore and embody sustainability values and acting for sustainability.

Not a singular technique, but rather an intent, provocative performance can trigger reflection, when an everyday routine is disturbed or questioned through a performance drawing attention to the problematic routine in society. The intention with provocative performances is to highlight taken-for-granted truths by making them explicit—with a

provocative twist—to arouse people's reactions (i.e. intentionally exploring hidden dimensions of disagreement and conflict with a view to promote agency, Fischer et al. 2024). The intention is to lead not only to reflection on values, but to also changed behaviour (van Beek 2025).

Envisioning sustainable futures is another part of GreenComp that especially corresponds with drama. Through fiction, alternative futures can be explored and experienced, rather than thought about intellectually. Adding the dimension of poetry, play, and embodied inquiry when exploring sustainable futures supports the presence of hope in the learning process. A common trait of applied drama is the aesthetic distancing that makes it possible to approach issues which are value loaded and emotionally heavy, without creating feelings of resignation and resistance. Drama contains techniques to regulate the distance to the subject matter and can add poetic and playful dimensions that make dwelling in ‘wicked problems’ and the ‘polycrisis’ of the present bearable. As such, applied drama intends to enable active agency within complex and multifaceted situations dealing with sustainability issues (Fischer et al. 2024).

Strategies for integrating drama in sustainability education

With such significant potential, how can applied drama be integrated into higher education practice globally? The following suggestions are based on a research project funded by the Swedish Research Council. It involved a group of 15 university teachers from 8 European countries, belonging to different disciplines such as business, environmental sciences, art, and communications. As part of the research project, each participant undertook action research in developing applied drama in their own context. This involved participants taking on different forms of applied drama and returning to their universities to integrate new elements in their teaching. This was then reflected upon and analysed by the group to ascertain the benefits of the project for higher education providers (reported in Wall et al. 2025). By way of a summary, the group found the following themes to be of particular relevance:

Creating a space. Academic courses are often packed with mandatory course content, combined with few learning opportunities other than individual reading (especially in the social sciences and humanities). For higher education teachers keen on trying some new elements in their teaching, but cannot see any immediate possibilities within the formal schedule, perhaps a voluntary workshop outside of the formal curricula may be offered. It is also important to consider how to evaluate this activity, as students’ evaluations may give guidance as to whether or not to add something new into the syllabus.

Merging drama and subject content. The key to successfully introducing elements of applied drama in any academic subject is to integrate or merge the drama work within the course content, either in terms of general theories, models or perspectives, or addressing a specific aspect or problem. This can be anything from scanning students' pre-understanding of a topic to examine what they have learned towards the end of a course, or maybe to 'unpack' complicated concepts, such as building a bridge between theory and personal experiences. If possible, it is useful to involve supportive colleagues who are keen to explore new forms of teaching.

Tracking innovations. Keeping track of new teaching strategies adds to a teacher's educational portfolio and contributes to developing professional practice. It is recommended that teachers try things out in a transparent way, make clear that it is development work, and keep a log of what the intention is, what is done, how it was received, and any impacts—such as behavioural change (Österlind 2020). These results should then be published to inspire others and continue developing the evidence base.

Conclusions and questions for further research

Students in contemporary higher education are highly appreciative of explorative methods oriented towards future thinking, helping them to navigate wicked problems. We have also found that they value a more personalized approach and the possibility of both self-expression and self-reflection. Applied drama techniques correspond to the current call to futureproof higher education and transformative learning approaches, and align closely with the wide range of capabilities outlined through GreenComp. At the same time, the value of applied drama practices are underestimated in higher education and there is a lack of empirical studies on the educational impact of introducing applied drama techniques in university settings, especially in sustainability studies.

We call for more evidence about behavioural change in ESD, both in terms of immediate and longer-term changes, but also how these change over time as students encounter alternative contexts. Such questions require a rich mix of qualitative, quantitative, and longitudinal research. In terms of initial steps, however, there are questions about which forms of applied drama and performance are accessible for academic teachers without previous experience. How are different formats received by the students? Answering these questions can underpin more robust professional development training to systematically introduce and evaluate applied drama in higher education with a specific focus on ESD.

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Data availability Not applicable

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