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Experiencing principles of dance movement therapy practice within transdisciplinary environmental research in South Africa

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ABSTRACT

This research study is an initial exploration of ways in which principles of dance movement therapy practice can be used in South Africa. Culturally-relevant principles in dance movement therapy practice were identified in an earlier phase of the study and informed a short-term group intervention within a transdisciplinary research team that dealt with water resources management. The research question for this phase of the study focused on the experiences of members of this group: How did researchers from a water resources management transdisciplinary environmental research group program in South Africa experience their participation in a group that adopted selected, culturally-sensitive dance movement therapy principles and practices? Hermeneutic phenomenology provided the methodological framing. Interpretative Phenomenological Analysis influenced the identification of themes. We conclude that principles of dance movement therapy have relevance in multiple and diverse ways within environmental transdisciplinary teams, beyond typical therapy contexts.

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KEYWORDS Dance movement therapy/psychotherapy; ecopsychology; complex social-ecological systems; transdisciplinarity; water resources management; community engagement; trauma; embodiment

Introduction

In this study, principles of dance movement therapy (DMT) practice were applied as part of a transdisciplinary (TD) environmental research program.

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TD research programs are increasingly being used to respond to complex social-ecological systems (Palmer et al., 2015; Wolff et al., 2019). DMT principles were used within the context of a TD research group located at a South African University. This group was made of researchers and post-graduate students who had met monthly over six years to develop methodologies and approaches that enabled a deeper exploration of the complex social-ecological systems that comprise people living in river catchments (river basins, or watersheds). The group's research focus was water and water resources management.

DMT was introduced as an additional disciplinary perspective in this TD research context. The aim was to explore the role of culturally-relevant principles and practices of DMT within a South African context.

The research question was:

How did researchers from a water resources management TD environmental research group program in South Africa experience their participation in a group that adopted selected, culturally-sensitive dance movement therapy principles and practices?

This question was considered in the second phase of a larger doctoral study. The first phase involved identifying ways in which existing DMT theory and practice could be reconsidered for its cultural relevance to South Africa and resulted in identifying certain themes and corresponding practices that were experienced as important for the socio-economic make-up of the country (Copteros et al., 2017). These included the culturally relevant themes of: an awareness of power and difference; therapeutic adaptability; safety and ownership; and connecting with the environment.

In the second phase of the study, eight members of the TD research group participated in a movement-based exploration of various themes relevant to complex social-ecological systems and TD research. This was a new approach to working with social-ecological systems that recognised the significance of the body in processes of transformation and interrelationships in order to heal divides, address past and present trauma and create opportunities for deep change. It was also a novel way of looking at applications of principles of DMT beyond the typical therapy context.

Theoretical framing

Complex social-ecological systems and dance movement therapy

Social-ecological systems recognise and emphasise connections and feedback that link human and natural systems (Preiser et al., 2018). They focus on developing sustainable outcomes that benefit both people and nature. This approach proposes a change in habit from linear to systemic thinking and practice, together with acceptance and understanding of the

characteristics of complex systems and attentiveness to co-learning and the co-development of knowledge (Rogers et al., 2013). This change in approach can then encourage better social-ecological practices towards sustainability and justice (Swilling & Anneck, 2012). At the same time, there are challenges to shifting to a complex frame, such as issues of power and historical inequality (Roux et al., 2010).

For ecologists, environmental educators, conservation practitioners and researchers, relatedness to the environment is a critical aspect of dealing with the global environmental crisis and supporting resilient social-ecological systems (Nisbet et al., 2009). Particularly if one adopts an ecopsychological therapeutic frame, the relatedness of person to environment becomes crucially important (Berger, 2021). Ecopsychologists believe that there is an emotional bond between human beings and the natural environment. In Beauvais (2012) interpretation of ecopsychology, humans evolved within the earth's ecology and are thus implicitly connected to it beyond conscious awareness. Ecopsychology research however still contains minimal examination of the application of body-based psychological tools for fostering empathy and connection.

Social-ecological systems are acknowledged as inherently complex, multi-dimensional and not confined by the boundaries of one disciplinary framework (Preiser et al., 2018), making them congruent with the inherent principles of TD research. Seeking answers across natural and science disciplines is vital for creating negotiated outcomes that address and recognise diverse stakeholder values (Max-Neef, 2005). Although the inclusion of therapeutic interventions has been considered as one of the available disciplines required for addressing complex social-ecological systems, a body-based approach such as DMT has not as yet become available in a visible way in the published literature.

Burns (2012) argues for embodiment (Payne et al., 2019) in DMT practice to include somatic awareness of embedment, of being in and living through embodied reciprocity with the 'more-than-human world' (Abram, 1997). Burns (2012) suggests that DMT can be a means of connecting to sensory experience, the environment and an embodied sense of belonging within the personal, cultural and/or collective unconscious that can evoke a felt sense of one's 'ecological self' (Naess, 1995). This awareness of interdependence through the body, where what goes on inside the body on a deep level resonates with the landscape, earth and all life-forms dwelling within the ecology (Frizell, 2019; Payne, 2023), can contribute to healing ourselves, our relationship with the Earth, and the Earth itself (Olsen, 2002).

In a South African context, where the impact of past and present ongoing trauma on the body continues to take place (Kaminer et al., 2018), a body-based therapy such as DMT potentially has an important role to

play. This is particularly significant given DMT's inherent understanding of the need for flexibility and adaptability in co-constructing culturally appropriate practices that respond to and resonate with indigenous means of knowing and expressing (Harris, 2007; Orkand, 2020), within an approach of parity between therapist and participant/s. This offers dynamic ways of working in South African environments where inequality and power dynamics form such a fundamental part of historically embodied trauma and exclusion.

The study

This study is based within the Eastern Cape Province of South Africa (see Figure 1).

The researchers who participated in the study conduct research mostly with communities in the Eastern Cape; often within rural contexts (for example, Cockburn et al., 2018). The post-apartheid Eastern Cape province faces fundamental and multiple challenges of deprivation relating to: unemployment; struggles with leadership; accountability; citizen participation and service provision (Makiwane et al., 2021).

Engaging both with natural resources, which are essentially embedded in social systems, and DMT, involved working at the boundaries between knowledge systems (Wolff et al., 2019). Within transdisciplinarity it was possible to explore some relevant principles of DMT as a new practice within



Figure 1. Study area – South African Provinces with Eastern Cape highlighted.

water resources management and allow for the researcher's 'voice' and experience to be part of an emergent process in dealing with the complexity of social-ecological systems. In order to work with DMT, however, the methods for its use and application had to be learnt and adapted to a South African context. After investigating cultural-contextual relationships (Copteros, 2017; Copteros et al., 2017), the research focus moved on to exploring the application of culturally-adjusted principles of DMT practice with members of the TD Group, with the hope that embodied practice could potentially offer a transformative communication medium for researchers working with traumatised communities.

This article focuses on the second stage of the research study (Copteros, 2017) that was part of the wider topic of adapting DMT practice in a South African context. The aim of the research presented here is to apply selected culturally-relevant principles of DMT practice within a TD complex social-ecological systems researcher group. In particular, there was an interest in exploring researchers' views and experiences of participating in an introductory session and five DMT based sessions that were facilitated following the culturally-sensitive principles and practices of DMT developed by Copteros et al. (2017).

Methodology

This research was an exploratory interpretivist study drawing on qualitative methodology that acknowledges complex systems. The research methodology used was hermeneutic phenomenology, a particular approach to phenomenology founded by Heidegger (De Vos et al., 2011). Hermeneutic phenomenology is a tradition within qualitative research that supports a study on life world or human experience as it is lived and also supports an interpretative stance (Kafle, 2013). The principles of phenomenological philosophy fundamentally question the Cartesian split between mind and body, questioning notions of objectivity, empiricism and positivism (Howell, 2013). According to Osborne (1994) and Lavery (2003), phenomenology questions a view of the world that is linear, predictable and objective, echoing complex social-ecological systems, transdisciplinarity, DMT and the healing of the mind body split.

Data collection

The sample was made up of participants from the TD Group who showed an interest in further exploring the application of principles of DMT practice. Respondents' privacy and confidentiality was respected at all times, adhering to the principles of both ethical research and therapeutic integrity

(Kvale, 1996). A group of eight researchers came to the introductory session and participated in the five two-hour long DMT-based sessions thereafter. These sessions were based on the interactive DMT approach of Marion Chace (Bernstein, 1986) and the culturally-sensitive principles and practices identified of: an awareness of power and difference; therapeutic adaptability; safety and ownership; and connecting with the environment. The interactive DMT approach is used mostly within groups (Payne et al., 2016) and emphasises equality, inclusion and an indigenous connection to the role of dance for healing (Chaiklin & Schmais, 1986).

The group agreed on the topics they wanted to explore in the sessions using the body as a means of creating meaning. These topics were: how to limit variables of power, privilege and difference; how to maintain lively curiosity and acknowledge one's own racism; how to learn from each other and share practice with a range of disciplines; how to extend healing to wider community; how to include oral histories and indigenous knowing. Participants represented various stages of academic endeavour, from post-graduate students to a professor, and came from a range of educational backgrounds, and disciplines. After the sessions finished, each participant reflected on their experience in an individual two-hour-long semi-structured interview (Smith & Osborn, 2008).

Data analysis

Data analysis was influenced by Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009; Smith & Fieldsend, 2021), which locates a participant's experience within the broader social, cultural and theoretical context (Harper, 2012). IPA has close links with embodiment and enactment (Koch & Fischman, 2011), both very relevant for this study, as it endorses the view that human beings are creative agents who construct their social world through intersubjective interpretative activity (Fuchs & de Jaegher, 2009). Reality is seen as inextricably bound up with people and that they have an impact on this reality, despite limitations imposed by material, biological conditions and social and linguistic processes (Hacking, 1999).

Consistent with the hermeneutic methodological premise of the study, the researcher engaged in an interpretive relationship with the transcript of each recorded experience, which was taken through the following process of analysis:

Level 1 - Reading

Level 2 - Free textual analysis

Level 3 - Emergent theme or code

Level 4 - Clustering into superordinate themes or family units

Level 5 - Repeat levels 1-4 for each transcript

Level 6 - Cross case analysis

Findings and discussion

Four superordinate themes emerged from the analysis: 'community engagement'; 'embodiment'; 'individual and group identity' and 'integration'.

Community engagement

'Community engagement' refers to the awareness of participants in wanting to include elements of DMT practice in their research work with communities. In this context, the term 'community' is used mostly to refer to 'rural communities' in the Eastern Cape. Participants indicated various ways in which they would like to include aspects of DMT practice in their research work with these communities in the future.

Participant A indicated his awareness of how DMT techniques can be valuable in community decision-making:

But now I am actually starting to see well sheesh [a South African expression of surprise] these techniques, the actual techniques themselves, how very valuable they'll be in integrating community decision making and I suppose that's the core of what we do in water resources management. (Participant A)

The literature suggests that by viewing the human-environment relationship as a complex social-ecological system, there is more possibility for co-learning and the co-development of knowledge towards sustainability and justice (Palmer et al., 2015; Wolff et al., 2019). However, as suggested before, there is an inherent difficulty in shifting to a complexity frame of reference (Roux et al., 2010). Participant A shared some of his past work experience, where community engagement was only a convenient term in which pre-conceived ideas still predominated. He suggested that DMT practice can potentially bring some humanity into 'real' community engaged decision-making:

[...] I think like if this stuff that we're doing like using the movement-based stuff maybe it does then, even if you were like the manager or whatever, the government official going with your pre-conceived thing, it might actually bring in some humanity into the decision. (Participant A)

With indigenous knowing in South Africa tending to be relational, holistically integrating kinetic and spiritual realms (Makanya, 2014; Nebe, 2016), research originally based on positivism and western worldviews is not appropriate within community-engaged and community-centred research such as water resources management. With the inclusion of DMT as a knowledge system in a TD research practice, traditional models of engagement are challenged. The participants commented about their DMT experience, how it related to transdisciplinarity in a meaningful way, and the impact it had on them and their work.



Figure 2. Participants connecting with themselves through movement part of Session One 'How to limit variables of power, privilege and difference'.

For participant D the DMT sessions brought in an element of transdisciplinarity, in which she was 'allowed' to express more of herself and engage in a way that was rich and meaningful (see [Figure 2](#)):

And possibly this drive for TD is this need to work more richly and to allow, to be allowed. I mean working with you is one of those. You know I'm allowed, goodness me! I'm allowed to spend 10 hours moving and it's work (laughs). (Participant D)

Participant E mentioned how there is a healing aspect and a growing sense of connection to social-ecological systems, which emerged from embodying the DMT experience (see [Figure 3](#)):

But just experiencing the process, through repeated experiences your state of being and just through that process of experiencing, you might not acknowledge it, but you probably do get a bit of a healing aspect and more connection to the concepts that we're speaking about, social-ecological system issues. So, start to feel more connected to us being part of social-ecological systems. (Participant E)

The very particular collective and individual experiences of the DMT process that participants had, allowed for a co-constructed yet personally meaningful body of personal and individual knowledge to emerge. It contributed towards a new experience of community engagement for participants, one that was potentially more relevant to community-based research, with potential for further application in their lives and research. The manner in which DMT engaged them and led to their comments above is through connecting and working with the body. This leads us to the second superordinate theme that emerged: 'embodiment'.



Figure 3. A pair of participants dancing opposing dance types as part of Session One 'How to limit variables of power, privilege and difference'.

Embodiment

'Embodiment' refers to the enjoyment expressed by participants in the use of body and movement in the DMT sessions. Participants expressed appreciation for body and movement as a knowledge system. Here participant D shares her delight in being able to express her imaginary space through body and movement, as opposed to it being 'locked away' in her head:

Oh yes when I wanted to walk with my heart. The freedom to translate what is a very maverick kind of imaginary space in my head into movement was huge for me. Not just fun, it was hugely meaningful expression of imagery, which I don't do. So much of what I do is locked in my head. (Participant D)

Participant A appreciated the circle as a means of sharing movement (see [Figure 4](#)):

Yes like in the circle when we were passing the movement, that was a very useful thing to do cause you getting that energy from other people and I remember at first like people were, like certain people you could see if they were reserved, they [...] would always do like his small movement and then eventually once we'd shared enough and the group was closer, then [they were] letting loose you know. (Participant A)

For participant C the movement created new ways of thinking about things:

So, and I did enjoy how you think about what something means to you and you find a movement for it and then it sort of like things that you wouldn't think about them normally (Participant C)

Embodied concepts in DMT, of human meaning emerging from organic, sensorimotor and emotional transactions with the world, involves body-felt



Figure 4. Participants sharing in a circle part of Session Two ‘How to maintain lively curiosity and acknowledge one’s own racism’.

movements as the cornerstone of well-being and self-discovery (Koch & Fischman, 2011). Connection to the body was critical in sessions and every session began, after the initial greeting, with an awareness of breath (Panhofer, 2017). This created a sense of ritual and ‘arrival’ for the group. Here participant B expressed how the group came to expect the breathing at the beginning of sessions (see Figure 5):

I think that was quite interesting is that sense of like we’ve come to expect and that’s another thing, you expect things to happen in this space now. And I mean we’d all get there in our tracksuits ready to go right we have to do the breathing. After a while everyone knows this is how we begin it, this is how we end it. (Participant B)

By its very nature DMT allows for a particular awareness of immediate environment and of one’s own bodily presence within it through embodiment (Payne et al., 2019). DMT may thus offer a means of engagement that embraces complexity and can assist with the shift to a post-reductionist position, by grounding knowledge in embodiment that can transcend cultural differences, foster interactive inclusivity, value indigenous knowledges and consciously subvert historical power inequities.

Individual and group identity

The participants felt a ‘growing’ connection with themselves and the group during the DMT- based sessions. The sessions allowed participant C for



Figure 5. Participants breathing together and connecting to body as part of Session Four 'How to extend healing to wider community'.

example, to express herself in a way that facilitated her reflecting on her own life and insecurities:

Personally, without talking about my project, I would say I've had time to also reflect on my own life. And my own insecurities and things that I've ignored. So, on that aspect I think it has helped me (Participant C).

Here participant E commented on how elements of DMT contributed to the diverse group of participants engaging in a different way, within the context of social-ecological systems and building relationships (see [Figure 6](#)):

I think for our group, there are elements of DMT that allowed a diverse group of people to engage differently with social-ecological systems. And if we say an important component of TD is to build relationships, then DMT was great for that. (Participant E)

With participants expressing and embodying a connection to themselves and each other through a safe creative expression practice, there is the potential to deepen connections and build mutual respect and understanding, which is a critical aspect of transdisciplinary teams (Roux et al., 2010). The interactive DMT approach that was used, promoted the integration of intra-actional (within the individual) and interactional (relating with others and the environment) systems (Capello, 2009). Here participant E commented on a more holistic outlook, in which there was healing of the group's own social-ecological system through the building of relationships; breaking the isolation often experienced by researchers in academia:

You're starting to feel a little bit more connected, whereas previously you imagine a system of all us working in our own little spaces, doing our various things, all in isolation mostly. And then through the process of



Figure 6. Participants created this sand tray from items of nature as well as the animal that symbolic represented each one of them as part of a free moving experience during Session Four ‘How to extend healing to wider community’.

listening and acting and expressing, you slowly got to know people a bit better. (Participant E)

For participant B, the connections formed during the introductory and DMT-based sessions are embedded in who she is now (see [Figure 7](#)):

I feel like I know those people that were in that space much better than I know any of the other students in the building. It’s like a soul thing almost you know, like you created something together and so you cherished it for the time it was there and now you’re in your thoughts with it. And it’s embedded in who you are now. It’s in my DNA kind of thing, which is great (Participant B)

Transdisciplinarity inherently includes a range of people from different disciplines and varying academic levels. It is important to be aware of the incredible influence power dynamics have in group processes within academic contexts, which are inherently hierarchical and where supervisors hold a lot of power. If transdisciplinarity is truly to engage both with academics and community members (Max-Neef, 2005) this issue needs to be considered very carefully and addressed. Dealing with difference and ‘the other’ is challenging. This is discussed further under ‘integration’.

Integration

On the superordinate theme of ‘integration’, participants commented on their awareness of perceived separations between group members, which



Figure 7. Participants mirroring each other's movements in the circle part of Session One 'How to limit variables of power, privilege and difference'.

referred back to apartheid era divisions. Group members differed not only in terms of educational backgrounds and disciplines, but also in terms of home backgrounds. Below are some comments by participants about perceived differences. Here participant F mentions the fact that the group was a mixture of 'black' and 'white' and that this suited him, implying that there often is not enough of this kind of interaction amongst 'black' and 'white' people:

The other thing what was important for me you know, I don't want to be a racist, but the fact that it was mingled you know – blacks and whites, that was really cool for me. And also seeing how people interpret power relations and how we see it. (Participant F)

He went on to say that listening to other peoples' stories created understanding and respect for others:

And also one of the things was the session we did 'wider community'; it was emotional when I was listening to some of the stories and also it gave me that understanding, you know the respect we talked about. We need to respect one another. We don't know where we come from you know. Where you come from, why you've gone through what you've gone through. (Participant F)

DMT acknowledges that our bodies hold different emotional, cognitive and multisensory aspects of self, which develop in relation to the experience of the body in a particular time and space, with its social and cultural influences (Bloom, 2006). The creative movement process (Wengrower, 2009) was an important means of allowing participants to be with their bodies and their movements, without judgement or comment.

In the interactive DMT approach, clients are given leadership at different points within sessions. Leadership is passed back and forth from members of the group to the dance movement therapist (Karkou & Sanderson, 2006).



Figure 8. Participants moving together in a circle part of Session Four 'How to extend healing to wider community'.

Passing leadership involves a natural usurpation of power as different participants take the lead.

South African history is littered with the tragedy of unequal power. In South Africa today, water service provision is still based on affordability and thus continues to be based on fixed demographic inequalities (Hutete & Sibanda, 2023). In a country where the abuse of power historically created so much division, pain and trauma, the symbolic sharing of leadership is critical. Mirroring each other's movements in the circle and offering empathetic reflection (Bernstein, 1986) was an important way to level the experience of everyone in the group and create connectivity between individuals (Berrol, 2006; Fuchs & de Jaegher, 2009):

Here participant E commented on the circle as an opportunity to build relationships but also a space of equality (see Figure 8):

And just being in a circle definitely is the best way of creating and enabling relationships to build, to cut down the power dynamics. (Participant E)

For participant A the mirroring in the circle made it easy for participants to go with the rhythm of the experience of sharing and of allowing themselves to express freely:

It's a good way of equalizing everybody and making everyone feel comfortable in the space. I suppose if you've shared part of yourself with everybody you're not afraid then to share more, because everyone shared some of their experience. (Participant A)

The expression of inner feelings through rhythmic, symbolic action seemed to cut across cultural, language and ethnic barriers. By applying some relevant principles of DMT practice in this study, it appeared that there was facilitation of difference and a sense of integration and inclusion, not only of others, but of sometimes hitherto unexpressed or unexplored aspects of self. The cycle of inter- and intra-relationality in many ways

defines the practice of DMT in its 'integrational' role of facilitating inclusive group process in transdisciplinary teams and environments.

Conclusion

The application of DMT, as practiced in South Africa in a transdisciplinary, complex social-ecological systems research context, affirmed that creating and flexibly but firmly holding a safe space where equitable engagement is fostered through the body, is a fundamental starting point to transdisciplinary engagement for participants. DMT in South Africa has to include a deep awareness of South Africa's psycho-social dynamics as embedded realities, which are rooted in people's bodies and their relationships with each other and the environment. This goes a long way in constructively engaging with embodied trauma, through the enactment and expression of empathy, as well as the experience of equal partnership in the process. The embodied connectedness to each other through communal activity, together with the involvement of movement and ritual, which a practice such as dance movement therapy introduces, at the same time also powerfully resonates with many indigenous cultures and practices in South Africa.

The very nature of embodied co-creation of identity and meaning-making in DMT, together with its integration into the self and environment through process, makes it highly relevant in a context of sought-after environmental sustainability, particularly in addressing and redressing environmental injustice. It has the potential to facilitate imaginative problem solving by means of egalitarian, collaborative participation and co-constructed process and meaning-making. It may transcend the simplistic need for pre-conceived outcomes, echoing the fundamental principles of transdisciplinary complex social-ecological thinking. It may do so by facilitating power-free engagement on common ground in an embodied way that connects one to oneself, one's environment and to the group context.

Author contributions

All authors contributed to the final approval of the paper.

Disclosure statement

Two of the three co-authors are qualified and registered dance movement therapists in their respective countries of residency. The Institute for Water Research's Ethics Committee approved the research.

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