

INTEGRATING TRANSDISCIPLINARY LITERACIES INTO HIGHER EDUCATION

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ABSTRACT

Transdisciplinary teaching, learning and philosophical dialogues have long been a part of global higher education, yet their significance is increasingly being recognised today. The concept of transdisciplinary philosophy, particularly within the context of an academic literacy framework, involves the integration and synthesis of knowledge from across various disciplines, in collaboration with local communities, to address real-life challenges. Despite the growing prominence of transdisciplinary teaching, learning and assessment methods, there remains a knowledge gap that explicitly connects these processes to academic literacy. This gap, which the article addresses, is significant as transdisciplinary literacies – including critical thinking, reading, listening and writing – are crucial mediums through which teachers, researchers, students and local stakeholders cultivate knowledge.

To explore the role of transdisciplinary literacy within higher education, the researcher undertook a systematic review of literature to identify instances where academic literacies intersect with disciplinary, and communities' activities. Academic literacies intersect with transdisciplinary approaches in the ways knowledge is constructed and how culture influences the spread of disciplines into greater society. To maximise the potential of transdisciplinary literacies in enhancing knowledge generation in higher education, this article advocates for more strategic interactions between academic literacy specialists, disciplinary experts, local communities and industrial stakeholders.

Keywords: Transdisciplinary, academic literacies, higher education, integrated strategies

Introduction

Transdisciplinary theory and its affiliated practices have circulated in higher education discourses for roughly thirty years. In educational contexts, Jean Piaget, as noted by Bernstein (2015), is one of the first scholars to articulate the concept of transdisciplinarity (Nicolescu 2006). According to Piaget, transdisciplinarity represents a higher order of

knowledge generation whereby scholars and key stakeholders step outside of disciplinary boundaries to address complex societal problems (Nicolescu 2006). In addition, transdisciplinarity involves cooperation between specialists from different fields within a framework that goes beyond traditional disciplinary boundaries (Bernstein 2015).

The astrophysicist Jantsch (1972) expanded Piaget's theory of transdisciplinarity. According to Jantsch (1972), combining knowledge across disciplines in a transdisciplinary way is more complex than doing so in multidisciplinary, pluridisciplinary, cross disciplinary and interdisciplinary approaches. The complexity of transdisciplinarity when contrasted with the aforementioned models is its aim to coordinate all disciplines in an educational system that shares principles and a commitment to developing a unified knowledge body.

Transdisciplinary education is becoming more important in higher education for several reasons. Firstly, enduring problems like war, cultural conflicts and unequal social hierarchies are increasingly seen as transdisciplinary issues. Consequently, single disciplines are incapable of independently generating the necessary knowledge to address and solve these crises. The limitations of single disciplines in resolving broader societal challenges is related to the issue of sustainable knowledge development (Eyong 2007).

Some scholars argue that atomistic approaches to knowledge generation, which oppose transdisciplinarity, do not encourage strategic interactions between local communities and academic specialists to solve important problems. Accordingly, Chilisa (2017) suggests that a framework is needed to combine the philosophical foundations of local communities and on-campus specialists with the scientific goals of both leading to new knowledge and solutions.

The issue of creating societal solutions through teaching, learning and assessments is a significant concern for academic literacy facilitators. Within specific disciplines, academic literacy specialists are responsible for assisting novice scholars in mastering the relevant knowledge systems and addressing the societal problems associated with them. In this context, literacy specialists help students to develop the knowledge and abilities needed to succeed in their disciplines and advance through degrees (Shanahan and Shanahan 2012).

Similarly, for the benefit of the broader society, developing academic literacy aims to nurture future experts who can apply the specialist knowledge gained at universities to benefit communities and nations. In specialised contexts, Geisler (2013) views academic literacy as expertise communicated through professional knowledge. However, this article argues that while disciplinary literacies are powerful tools, they have limitations in addressing challenges both on- and off-campus.

Transdisciplinary literacies can be viewed as a response to the limitations of discipline-based literacies. In 2023, Lemieux et al, based in Canada, published a text titled "Working towards more socially just futures: The five areas of transdisciplinary literacies research". The five areas of transdisciplinary education identified in the text are culturally responsive pedagogies, equity training, safe and inclusive environments, reforming harmful policies and authentic community collaborations (Lemieux et al. 2023). In this framework, students' cultural backgrounds and require a broader approach to developing academic literacy that acknowledges their pre-university origins (Lemieux et al. 2023).

Lemieux et al. (2023) propose a transdisciplinary literacies framework that is relevant to Africa. Integrating communities' and specialists' knowledge in higher education is essential for addressing unemployment, poverty and economic underdevelopment. This is particularly critical in South Africa where the official youth unemployment rate exceeds sixty percent (Khan et al. 2024) and annual university dropout rates are approximately twenty-five percent (Mabunda 2023).

This article's stance is that since academic literacies are ubiquitous across all disciplines, they can help address South African students' dropout rates and social crises through several pathways. Such support is achievable by creating inclusive learning environments and generating authentic collaborations with local communities (Lemieux et al. 2023). As such, the current analysis explores strategies that universities and academic literacy facilitators can implement to leverage transdisciplinarity on- and off-campus.

METHODOLOGY

This study conducts a qualitative, systematic review of literature that integrates academic literacy with transdisciplinary approaches and teaching and learning issues in higher education. A literature review is a methodical approach to evaluating published research relevant to a specific topic and question. In this context, this article addresses the question of how transdisciplinary literacies can be integrated into students' development in disciplines. The three primary objectives of this literature review are to synthesise the existing body of knowledge, identify gaps in the research, and provide a rationale for applying transdisciplinary literacies in African higher education contexts.

Data was accessed through multiple databases including JSTOR, Google Scholar, PubMed, Scopus and Web of Science. A comprehensive search strategy was employed that integrated the following keywords: transdisciplinary, transdisciplinary literacies, transdisciplinary theory, academic literacy, higher education and Africa. While there were no

strict exclusionary criteria for the literature review, texts published before 2014 were excluded unless they were identified as seminal to transdisciplinary practices and theory.

Data extraction primarily focused on transdisciplinary literacies and academic literacy methodologies and theories within transdisciplinary contexts. Through this process, the researcher aimed to understand the philosophical foundations of transdisciplinary literacies in higher education. Additionally, key indicators of quality from integrating transdisciplinary practices with academic literacies were central to the data extraction process. Finally, the data synthesis is presented in the discussion section of the article, where the theory, practice and pedagogical outcomes of transdisciplinary literacies from the literature are critically analysed.

Research problem

Transdisciplinary literacies are essential for developing knowledge which address the social crises facing African cultural communities, such as unemployment, poverty and higher education dropout rates. Despite their criticality, there is a significant gap in the designing, implementation and evaluation of transdisciplinary literacies in African higher education systems.

Research question

How can transdisciplinary literacies be effectively integrated into Africa's higher education systems to address critical societal challenges including high youth unemployment and university dropout rates?

Research objective

To identify strategies that African universities can implement to harness transdisciplinary literacies, foster culturally sensitive pedagogies and robust university engagement with local communities to tackle social challenges.

LITERATURE REVIEW

Current state of transdisciplinary literacies

There were two articles the researcher could access that explicitly incorporate the concept 'transdisciplinary literacies'. The first article was mentioned above where Lemieux et al.

(2023) explore areas of transdisciplinarity where literacies are emphasised. The second article which was published in 2013 is entitled, “Transdisciplinary and community literacies: Shifting discourses and practices through new paradigms of public scholarship and action oriented research” (Licona and Russell 2013). Like Lemieux et al., Licona and Russell (2013) construe transdisciplinary literacies as the interplay of various disciplinary knowledge, methods and perspectives. However, what distinguishes Licona and Russell’s (2013) theory of transdisciplinary literacies is its integration with local communities’ knowledge systems. Licona and Russell’s (2013) community literacies theory is essential for educators and academic literacy practitioners who aim to integrate students’ cultural epistemologies into classroom settings and address local community issues using transdisciplinary knowledge. In this light, the characteristics of communities include lived experiences, relationships and cultural systems (Licona and Russell 2013). Another key aspect of transdisciplinary literacies is the knowledge generated both within and across multiple communities (Licona and Russell 2013). Therefore, transdisciplinary literacies enable communities to share insights and information generated internally with broader cultural groups, including universities.

Licona and Russell’s (2013) study is notable for describing a collaborative project, the “Crossroads Collaborative” (Licona and Russell 2013, 3), where transdisciplinary literacies were incorporated. The scholars established the Crossroads Collaborative to unite faculty, postdoctoral research associates, graduate students, youth-orientated community leaders and local youth in exploring how young people interpret their identities, sexualities, health and rights (Licona and Russell 2013). Licona and Russell (2013) empowered community members' by using an action research design methodology that enabled them to influence literacies, including data collection, analysis, and interpretation.

Through these transdisciplinary literacies, Licona and Russell (2013) established relationships between on- and off-campus societies that were previously non-existent or marginalised. For example, the researchers worked alongside community members to co-develop research agendas that reflect the needs of local communities (Licona and Russell 2013). Additionally, the data and knowledge generated through transdisciplinary literacies resulted in the co-authorship of journal articles and other scholarly publications by on- and off-campus actors.

Transdisciplinary digital literacies

Where community is a central concept in Licona and Russell’s (2013) framework of transdisciplinary literacies, Rupnik and Avsec’s (2020) work emphasises technological

literacies. Specifically, whereas Licona and Russell's emphasise community agency in transdisciplinary literacies, Rupnik and Avsec highlight the role of technological literacies in fostering transdisciplinarity. However, it is important to note that Rupnik and Avsec's (2020) integration of technologies into their construct of transdisciplinary literacies is not mechanistic. Instead, they view literacies that depend on technologies as essential tools that cultural groups need to access knowledge and make data-based decisions on scientific issues circulating in public discourses (Rupnik and Avsec, 2020).

The interplays between transdisciplinary literacies, technology and the socioeconomic worlds of local communities warrant increased scrutiny. This convergence is significant as it creates opportunities for higher education instructors, researchers and off-campus agents to interact. Rupnik and Avsec (2020) suggest that when academic literacy developers shift from traditional skills-based to technologically enhanced paradigms, they can improve transdisciplinary interactions among scholars. This technologically-oriented method develops practical skills, higher order logic, evidence-based decision making, problem solving, and knowledge perspectives from diverse disciplinary angles (Rupnik and Avsec 2020). By doing so, students, in collaboration with communities, can concentrate on real-world challenges, integrate knowledge from various disciplines and produce data that transcends campus boundaries (Rupnik and Avsec 2020).

Rupnik and Avsec worked with grade eight scholars to gather their perspectives on technology as learning tools and as potential instruments for their future careers. Interdisciplinary methods were activated as the researchers leveraged knowledge from multiple knowledge fields. These disciplines included science, technology, engineering, mathematics as well as the social sciences (Rupnik and Avsec 2020). By involving students as a distinct community in co-designing the project's outcomes and leveraging the academic literacies, transdisciplinarity was achieved. This process specifically acknowledged students' views of the practical use of technology in society.

Rupnik and Avsec (2020) strategically integrated the community agency characteristic of transdisciplinarity by involving the families of the grade eight participants in their research. To demonstrate, part of the investigation relied on scholars' learning about their parents' views on the practical application of digital tools in their workplaces and in general. By involving parents and extending research literacies beyond the school, the transdisciplinary study gave the researchers new insights into how parents perceive technology as important in the workplace. Through their analysis and co-designing the research with students, the investigators discovered that many of their student co-researchers

were unaware of the widespread use of technological tools across various industries (Rupnik and Avsec 2020).

Role of transdisciplinary literacies in African Higher Education

As noted, this article is situated in South Africa, a country with some of the highest youth unemployment and poverty rates in the world. Consequently, the researcher is concerned with the potential of transdisciplinary literacies practiced in universities to help produce future experts who are not only technologically skilled but also trained with values centred on social development. In this context, transdisciplinarity is seen as supportive of the interactions of future experts with local communities and sectors that rely on specialised literacies (Jubane 2020).

Thondhlana et al. (2021) initiated a transdisciplinary, continent-wide African project aimed at generating new insights into urban sustainability. The researchers collaborated across disciplines including environmental science and climate systems analysis (Thondhlana et al. (2021). Members of their institution's international collaboration and planning departments also participated in the research. They define sustainable cities as those which meet the needs of inhabitants without unsustainable exploitation of resources and systems (Thondhlana et al. 2021).

Three African cities participated in this transdisciplinary project: Harare in Zimbabwe, eThekweni (Durban) in South Africa and Kumasi in Ghana. The researchers collaborated with civic organisations, local governments, academics and non-governmental organisations (Thondhlana et al. 2021). Each participant critically reflected on the challenges faced by their respective cities – and these reflections considered essential transdisciplinary literacies – were used to develop decision-making tools for sustainable resource and systems development.

Thondhlana et al. (2021) provide crucial insights into the effectiveness of transdisciplinarity literacies in addressing real-life and community challenges. They demonstrate how scholars crossing campus boundaries into communities can yield multiple benefits for all stakeholders. From the outset, they co-designed research operational principles with local organisations. This approach required effective communication and multilingual skills to maintain understanding and collaboration. Transdisciplinary literacies enabled the scholars and societal members to engage in reciprocal learning, overcome language barriers and cultural differences (Thondhlana et al. 2021). Thus, transdisciplinary literacies allow transgression of cultural boundaries.

Research events that relied on transdisciplinary literacies in Ghana, Zimbabwe and South Africa, including workshops, learning labs and recorded interactions, co-opted team members into knowledge generation. Reflective writing and dialogues allowed analysis of the knowledge produced to be disseminated in journals, community networks and videos (Thondhlana et al. 2021). In these approaches, transdisciplinary literacies are conduits for African scholars to spread the results of their studies to various stakeholders.

The text by Kruger and Adams (2018), titled “A transdisciplinary exploration: Reading peace education and teaching English to speakers of other languages through multiple literacies theory” is a significant contribution to the discourse of transdisciplinarity in Africa. The researchers suggest that transdisciplinary literacies intersect in the reading domain of peace education. For example, linguists and peace facilitators are often required to jointly resolve conflict (see Garing et al. 2023). Therefore, transdisciplinary literacies, as demonstrated in peace studies, are significant due to their capability to contribute to conflict resolution.

RESULTS

At the beginning of this article, the question was posed: How can transdisciplinary literacies and strategic interactions be effectively integrated into Africa’s higher education systems to address critical societal problems including high youth unemployment and university dropout rates? From the review of both conceptual and empirical studies, several pathways emerge through which transdisciplinary literacies can contribute to reducing university attrition figures and youth joblessness. These pathways will now be explored.

Improving engagement with disciplinary knowledge

Transdisciplinary literacies are capable of enhancing students’ engagement with disciplinary knowledge. One of the ways in which students’ engagement is strengthened transdisciplinarily is through authentic learning. In this context, authentic learning takes place when scholars strategically explore real-world issues with local communities that are relevant to their lives. Rupnik and Avsec's (2020) technological literacies and the multi stakeholder investigation of Thondhlana et al. (2021) demonstrate the capacity of scholars and community members to strategically collaborate. Developing and enhancing academic literacies that engage students in discipline-specific and real-world problem-solving provides benefits for the students and the community collaborators (Richards 2012).

Enhancing university students' learning engagement through transdisciplinary pathways is relevant to African states, including South Africa. For instance, when students perceive the relevance of their disciplines to real-life situations, their interest and commitment to their studies increase (Richards 2012). Moreover, when educators utilise transdisciplinary literacies in the classroom, the focus is not solely theoretical, but practical and actionable. Rupnik and Avsec's (2020) study exemplifies this, demonstrating how the involvement of students, families and communities can generate transdisciplinary praxis. Similarly, in South Africa, educators, including academic literacy facilitators, can design authentic and engaging pedagogic models by developing partnerships with local communities and industries.

Developing transdisciplinary thinking

Novice university scholars cannot progress in their degrees without increasing their critical thinking skills. Critical thinking is manifested through transdisciplinary literacies when students produce knowledge with local communities, solve problems, and apply what they have learned (Wilson, 2021). Maringe and Chiramba (2023) provide an example of how critical thinking and literacies are understood within transdisciplinary frameworks. Transdisciplinary critical thinking compels scholars to challenge bounded disciplinary knowledge systems – closed academic fields where the transfer of knowledge is restricted, limiting strategic interactions between academic departments belonging to the same faculty (Maringe and Chiramba 2023). Closed academic fields often maintain strong boundaries between their discipline and local communities.

However, when educators introduce novice scholars to the concept of bounded knowledge systems, they equip future disciplinary leaders with the ability to identify overlaps between disciplines through critical thinking. In doing so, teachers enhance students' critical thinking by integrating knowledge within alternate, open-systems approach to knowledge development. In this context, transdisciplinary approaches expand democrat access to knowledge by blurring disciplinary boundaries (Bunders et al. 2010).

Maringe and Chiramba (2023) emphasise that overcoming border thinking through transdisciplinary knowledge is an essential decolonial methodology. Given the centuries of colonial and epistemological warfare in Africa, there is a pressing need to reintegrate pre-colonial, Indigenous life views and knowledge systems into the curriculum. These provide African students and local communities familiar modes of integrating critical thinking with knowledge production (Maringe and Chiramba 2023). Here, indigenous African languages are vital as they serve as conduits of knowledge between on- and off-campus stakeholders.

Enhancing employability through transdisciplinary literacies

One of the challenges faced by African academic literacy facilitators working in isolated, disciplinarily-generic modules is the difficulty of connecting the curriculum to real-life and expert knowledge, as emphasised by Geisler (2013). This scenario is problematic because students need exposure to expert, community, and industrial literacies. For instance, the autonomous model of literacy, which still holds considerable influence in South Africa's former-Afrikaans universities, regards academic literacy as neutral skills, detached from expert, disciplinary and vocational contexts (Street 2003).

The ideology underpinning autonomous literacy models hinders strategic transdisciplinary interactions in higher education, leading to fragmented relationships between academic literacy development and the needs of local communities. The generic model perpetuates the isolation of disciplines and academic literacy modules, causing them to operate in silos. In contrast, transdisciplinary literacies encourage the integration of local communities' knowledge, expert insights, and industrial practices into various academic fields. This approach is exemplified by the work of Licona and Russell (2013) who incorporate the knowledge systems of local communities into the curriculum. Additionally, Rupnik and Avsec (2020) incorporated communities' technological perspectives into students' literacies.

Transdisciplinary literacies, while not a standalone solution to African students' dropout rates and under-employment, can equip new university entrants with access to expert, specialist and professional knowledge. Specifically, transdisciplinary literacies help students' connect academic content to expert contexts, thereby providing them with essential competencies to enhance their employability. Furthermore, transdisciplinary literacies allow for the incorporation of local communities' and industrial sector needs into teaching and learning. In this way, students acquire literacy practices that are reflective of transdisciplinary work environments.

Promoting entrepreneurial initiatives

As a result of the theoretical and practical insights gathered thus far, it is apparent that transdisciplinary literacies can promote entrepreneurship among African scholars. Entrepreneurial literacies are particularly crucial in African states such as South Africa, where official statistics indicate that more than 60 per cent of the youth are unemployed

(Khan et al. 2024). There are numerous analytical pathways through which the benefits of transdisciplinary literacy can be linked to future entrepreneurial initiatives in Africa. Applying transdisciplinary literacies in entrepreneurial contexts requires students to integrate knowledge from various disciplines with the economic needs and opportunities of local communities. Hence, transdisciplinary literacies are vital for developing new businesses, where novel approaches are needed to address challenges such as joblessness.

Transdisciplinary literacies equip students with practical skills that are integral to successful entrepreneurship. In this context, transdisciplinary literacies foster “invention [...], innovation, [and] future scenario building” (University of Technology, Sydney 2024, 1). This means that as students apply transdisciplinary literacies alongside local communities in entrepreneurial contexts, they engage in innovative thinking and strategies aimed on problem solving. This firsthand experience is crucial for students’ preparation in applying knowledge from academic fields to start and manage business ventures. Scholars rely on transdisciplinary literacies to build networks with communities to understand their needs and establish new businesses. In turn, local communities leverage transdisciplinary knowledge students bring to gain new insights into market practices.

DISCUSSION

The findings from both theoretical and empirical research support the integration of transdisciplinary literacies into universities’ teaching and learning models. For example, transdisciplinary literacies and strategic interactions draw on knowledge from diverse academic disciplines, students, their families, local communities and industrial stakeholders to generate new insights, as demonstrated in Licona and Russell (2023). In this regard, transdisciplinary literacies benefit novice African scholars by broadening educational relevance, enhancing epistemic inclusivity, promoting collaboration and empowering local communities.

The student participants in Licona and Russell’s (2023) transdisciplinary project strengthened their literacies through participatory, collaborative knowledge production. Therefore, with the combined efforts of instructors’ and community members, enabling students’ access to transdisciplinary literacies can be considered an inclusive pedagogy.

A significant finding in this investigation is that the transdisciplinary nature of academic literacies permits the development of strategic interactions that leverage the knowledge and expertise of local communities and industries. As noted by Richards (2012), students’ reading literacy improves when educators integrate knowledge from multiple disciplines to enhance

their understanding of course content. For example, since reading is essential across all disciplines, when academic literacy facilitators move beyond the confines of autonomous, disciplinarily sterile educational models, they can collaborate with instructors from diverse fields and community members to address real-life problems relevant to students' degrees.

Implications for African higher education

Transdisciplinary literacies are essential for understanding the role that higher education knowledge plays in Africa's post-colonial era. In contrast, as reflected in Achebe's title, "Things Fall Apart", the dismantling of transdisciplinary Indigenous social structures in favour of Global North models, which separated African cultures from disciplines, became the norm. However, as Bhatt (2021) notes, Achebe's use of African oral traditions illustrates how scholars and communities can create alternative, post-colonial realities by reviving ancient, transdisciplinary literacies. This approach opens new opportunities for future scholars, activists and entrepreneurs dedicated to addressing real-life, post-colonial challenges.

The involvement of local community members in transdisciplinary literacies is essential for inclusive knowledge development. In a transdisciplinary groundwater preservation collaboration in the Gujarat and Rajasthan states of India, community members and scholars employed multiliteracies to promote environmental sustainability (Maheshwari et al. 2014). These literacies included community members' involvement in groundwater monitoring and field trials, which were communicated to local government officials ((Maheshwari et al. 2014). This example illustrates how transdisciplinary initiatives that engage local communities in the design, implementation and evaluation of scientific projects offer both educational and ecological benefits.

The Maheshwari et al. (2014) study holds significant relevance to academic literacy developers, universities, local communities and governments in Africa. Similar to other parts of the world, Africa faces environmental crises such as drought, unsustainable energy practices and unpredictable weather patterns. As recently as June 2024, like parts of North America, South Africa was hit by a destructive EF3 rated tornado close to the city of eThekweni (Bega 2024). Within a transdisciplinary framework, academic literacy facilitators, together with scientists from various disciplines, can aid communities and governments in implementing sustainable practices that promote environmental protection.

Integration of transdisciplinary literacies into pedagogical practices

There are three institution wide strategies universities can implement to integrate transdisciplinary literacies into the curriculum. Firstly, under the transdisciplinary framework, universities should facilitate structured interactions between disciplines, communities and local stakeholders. Khoo (2017) argues that such interactions, characterised by collaborations, systems thinking and visionary leadership, are essential for meaningful integration. The groundwater initiative reported by Maheshwari et al. (2014) provides tangible evidence of the positive outcomes that can emerge from on- and off-campus collaboration, driven by these principles.

In addition to creating formal platforms for collaboration between community, scholarly and industrial partners, as established in the initiative by Licona and Russel (2013), it is essential to identify transdisciplinary methods to maximise their outcomes. This article, therefore, recommends revising universities' curricula to emphasise transdisciplinary literacies, including critical thinking and problem-solving, which are vital across disciplines.

Methodologically, these literacies can be developed through several approaches. Students can master essential transdisciplinary literacies when educators from various disciplines co-design assignments (see Brown 2022). This method integrates the knowledge-systems and discipline-specific vocabularies necessary for progression in degrees within an inclusive framework. However, implementing such a transdisciplinary system requires cultural sensitivity and awareness, given the diverse knowledge systems of students, staff, local communities and industrial stakeholders.

The importance of cultural sensitivity in co-designing transdisciplinary projects that emphasise academic literacies cannot be overstated. EDIA (equity, diversity, inclusion and accessibility) principles of disciplinarity (Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal 2024) highlight the delicate nature of transdisciplinary interactions. These principles are vital, especially considering that many African nations experience stark societal contrasts regarding equitable access to education, jobs and other economic opportunities to support their families. To reiterate, South Africa is often labelled as one of the most unequal countries in the world (Valodia 2023).

Given the sensitive nature of transdisciplinary work, which can be complex, it is essential to consider the potential limitations that may arise when integrating transdisciplinary literacies into universities' teaching and learning cultures. Developing transdisciplinarity in higher education necessitates identifying individuals who are willing to cross disciplinary boundaries, both on- and off-campus (Horn et al. 2024). To effectively

cross these boundaries, advocates of transdisciplinary knowledge must gain insights into the cultures and epistemologies of the disciplines, local communities and professional sectors to foster collaboration. For this reason, Horn et al. (2024) propose a transdisciplinary model that nurtures the literacies involved in transdisciplinary actions and cultivates transdisciplinary attitudes.

The notion of transdisciplinary actions and attitudes is essential for implementing academic literacies that transcend community, academic fields and institutions' borders. Transdisciplinarity, therefore, is more than a methodology; it is an epistemology that shapes the attitudes and actions adopted of stakeholders as they tackle real-life challenges (Horn et al. 2024). When viewed as a knowledge system, transdisciplinarity unlocks the potential for transformative action through higher education. After all, epistemologies shape ontologies, which in turn influence the realities and lived experiences of transdisciplinary actors (Eybers & Dewa 2025).

CONCLUSION

Future studies on transdisciplinary literacies should assess the efficacy of transdisciplinary pedagogic philosophies and strategic interactions in higher education. Such investigations should include evaluating the measurability of successful transdisciplinary literacies projects worldwide. Additionally, these studies could explore the long-term impact of transdisciplinary literacies on student retention. Measurable factors may include student employability, entrepreneurship development, local community collaboration, and innovative capacity. Encouraging partnerships between scholars, local communities and industries is crucial for cultivating a practical and impactful learning environment that transcends social boundaries.

Transdisciplinary literacies are powerful tools for bridging the boundaries that separate actors in diverse disciplines. When applied in the classroom and through research, these literacies foster problem-solving dialogues and strategic interactions. By closing epistemological and ideological gaps among individuals with different philosophies, transdisciplinary literacies enable scholars to develop integrated course structures. This approach to teaching and learning encourages holistic discussion and knowledge generation on critical issues such as joblessness in local communities, youth dropout rates, and environmental sustainability. By utilising transdisciplinary literacies, scholars can create innovative models that transcend the limitation of isolated academic literacy structures

In conclusion, transdisciplinary literacies are not mechanistic technologies; rather, they are social tools, epistemologies and methods of strategically engaging with knowledge to solve real world problems. These literacies cultivate collaboration, critical thinking, problem solving, and innovation. By integrating transdisciplinary literacies and strategic interactions into teaching and learning, universities in Africa and around the world can enhance their relevance and contribute to social development, thereby equipping future leaders to tackle the pressing challenges of today and years to come.

ETHICS STATEMENT

The researcher confirms that human participation was not involved in this analysis, and therefore, ethical clearance was not required by the University of Pretoria. The investigation relied exclusively on secondary sources.

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