


A transdisciplinary approach to literacy research, practice, and policy

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Patriann Smith, Associate Professor at the University of South Florida's Department of Teaching and Learning, discusses transdisciplinarity and how it could inform approaches to literacy research, practice, and policy

Transdisciplinarity, defined as 'that which is at once between the disciplines, across the different disciplines, and beyond all disciplines' (Nicolescu, 2010, p. 22), was first identified in the research of Jean Piaget (1986-1980), a Swiss philosopher and psychologist. Emerging then as that which existed 'between' and 'across' disciplines, and later by Austrian thinker Erich Jantsch as that which existed 'within' disciplines, transdisciplinarity eventually came to connote freedom of thought as espoused by Edgar Morin.

So why transdisciplinarity for education?

The eventual inclusion of the notion of 'beyond disciplines' in the definition of transdisciplinarity by Basarab Nicolescu, informed by three axioms grounded in the sciences of quantum physics and molecular biology, has allowed transdisciplinarity to emerge as the opening up of varied cultures to that which cuts across as well as transcends them. In such a dynamic, transdisciplinarity aims to demonstrate unity of knowledge and the symbiosis of unity and diversity, illustrating how the two function as 'opposite sides of the same coin' – *e pluribus unum* – out of many, one. To do so is to transform the education system by reconciling dichotomies through informing one's 'learning to know,' 'learning to do,' 'learning to live together with,' and 'learning to be' (Nicolescu, 1999, p. 4; Smith 2013, p. 29).

What does transdisciplinarity have to do with literacy?

Literacy, because it largely and globally forms the basis for individual, institutional, and collective understandings of what exists simultaneously between, across, and beyond *all* disciplines, holds significant potential for achieving such symbiosis of unity and diversity, a key goal of a transdisciplinary approach in a polarized world. No longer just the ability to read and write, literacy is now '*literacies*' (Street, 1984) or '*multiliteracies*' (Cazden et al., 1996) – a multifaceted and social process of engaging with and (re)creating the world, its texts, and sub-texts in numerous forms – *linguistic, gestural, audio, visual, spatial*, and so on – through making meaning with and beyond it.

Through a transdisciplinary approach to literacy research, practice, and policy, it is possible to consider how the three axioms generated by transdisciplinarity's methodology – *ontological axiom, logical axiom, and complexity axiom* – make it possible to mobilize

the quantum imaginaries that remain invisibly untapped in humanity.

Which axioms undergird transdisciplinarity?

The three axioms – ontological, logical, and complexity – emerge from constantly evolving understandings of sciences such as quantum physics and molecular biology, positioning knowledge undergirding all disciplines as *limitless, forever open, and interdependent*.

With the *ontological axiom*, levels of reality of nature and knowledge, as well as levels of perception of a person, are central. With ‘multiple levels of reality,’ laws that govern a certain level of reality do not apply to other sets of systems because each system has different laws. The inability to apply laws from one level of reality to another creates ‘discontinuity in the structure of the levels of reality,’ allowing humans to move beyond levels of reality present only in natural systems to those which hold in other systems (e.g., social systems) — levels of perception of a person. In addition, the principle of relativity allows for an incomplete nature of each level of reality and for one reality to enhance the understanding of another. With this axiom, distances are separating one level of reality from another. Due to these distances, it is possible to have infinite levels of reality, positioning knowledge as *limitless* (Nicolescu, 2005).

With the *logical axiom*, a contradiction is derived as a result of what Nicolescu (2005) presents as the ‘classical logic’ — a logic that governs the habits of the human mind. However, this contradiction represented by an ‘excluded middle’ is transformed into an ‘included middle’ because of the affordances of ‘levels of reality’ made possible by the ontological axiom. Due to this transformation, it is largely impossible to arrive at theoretical conceptions of knowledge (e.g., theories) that are ‘complete and exclusive’ because the logic inherent in this axiom requires openness to continuous revelation: knowledge is ‘*forever open*’ (Nicolescu, 2005).

With the *complexity axiom*, universal interdependence – a principle that ‘highlights simplicity in the interaction of all the levels of reality’ – is a distinguishing feature. This is because ‘symbolic language, which holistically reflects human beings’ thoughts, feelings, and emotions, is indispensable to maintaining the interdependence present among individuals’ (Nicolescu, 2005, p. 32). Knowledge-based on this axiom is thus *interdependent* (Nicolescu, 2005).

How can a transdisciplinary approach to literacy function based on these axioms?

Though admittedly multifaceted, transdisciplinarity’s axioms present *levels of reality* that enhance levels of perception of a person, the *logic of an included middle* that inhibits finality of knowledge, and the *principle of universal interdependence* that maintains interconnectivity, all of which together signal opportunities for considering how knowledge of literacy can be advanced through research, practice, and policy.

Ideally, a transdisciplinary approach to literacy research, practice, and policy would disrupt the compartmentalization of disciplines. Literacy instruction would be leveraged such that disciplines such as science, mathematics, social studies, and literature, currently taught in isolation, would be amalgamated, allowing for interaction across content areas governed by the desire to solve authentic problems emerging from the societies in which students function. For instance, when governed by the logic of the included middle, literacy instruction using content from Islam, Hinduism, or Confucianism may require students to identify symbolically similar tenets across these streams of thought, thereby illustrating how the common elements among them transcend what makes them different. Teaching literacies in a way that eliminates disciplinary boundaries dismantles the current practice of situating knowledge within domains and, instead, positions emerging meaning-making with the world as fluid, interdependent, and never-ending.

Through perpetuating interaction and learning based on such literacy practice, it is possible to emphasize the necessity of differing views to arrive at a limitless range of solutions, views that are often deemed contradictory to each other but which can nonetheless operate together on multiple levels of reality. For instance, literacy research from such a transdisciplinary perspective would engender scholarship that cultivates a *both-and* ethos such that in the case of a quandary surrounding the ‘science of reading,’ it becomes possible to adopt *both* the science that ‘explicit phonics instruction supports word recognition in English literacy’ *and* also, the science that ‘meaning-making/ comprehension is central to literacies across all languages.’

Literacy policy informed by such an ethos would, in turn, consistently require students to be forever open to engaging with seemingly opposing and contradictory viewpoints, albeit morally and ethically sound, in their quest to address real-world challenges and cultivate unity through diversity. For instance, a transdisciplinary approach to literacy policy would require teachers to support students’ expression of their emotions as they engage with empirical evidence in their quest to solve problems in the real world. This approach would ensure that literacy policy balances the spiritual and material sense of self. Literacy policy that cultivates awareness of students’ personal reactions to scientific knowledge increases the likelihood that they remain open to infinite ways of

knowing – *continuous revelation* that extends beyond what they can touch, see, hear, and feel. It also enhances their capacity to recognize how students’ backgrounds and predispositions in making meaning of the text and the broader realities in which they function influence the empirical evidence with which they interact. Through positioning literacy policy as a basis for teachers to harness students’ emotions and feelings in conjunction with the scientific, *sans* disciplinary boundaries, transdisciplinarity liberates students’ abilities to make meaning of and solve problems in the world.

References

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