

Multiplicity versus Singularity: In Favour of Transdisciplinarity**Jean Dsouza***Ph.D. Associate Professor, H.A. College of Commerce, Ahmadabad, Gujarat, India***Abstract**

Charles Eames, one of the founding fathers of NID, Ahmadabad, famously said, “Eventually everything connects.” In the search for meaning and the hunger for ---, (higher) education today needs to redefine, restructure and revive itself not only to accommodate itself with changing times but also to create sustainability in gen-next. The times, sang Bob Dylan, are a-changing’, and are emerging as more complex, inter-connected and enmeshed on the global scene. In such a context, this paper intends to do what most conferences and papers do – discuss an ideal world of what higher education ought to be, imagine an academic utopia. And from a personal perspective, this utopia is trans-disciplinary in nature, soliciting multiplicity and limitlessness in the face of singularity and circumferences. The theory of education in general and higher education in particular is researched not so much in terms of pedagogy but more in terms of enculturation and cognitive discernment. Specifically, this paper intends to make a case for trans-disciplinarity in higher education as the need for the hour, though not denying the relevance of specialization and focus, but nonetheless stressing the significance and bearing of plurality in academics. Based on the opinion that trans-disciplinarity is the only apt option for (higher) education today, this paper is divided into three obvious and simple parts: the meaning and context of trans-disciplinarity; the advantages and limitations of trans-disciplinarity; and a conclusion of the potential of trans-disciplinarity.

Key Words: Multiplicity, Singularity, Transdisciplinarity**Introduction**

In an ideal world, human education should replicate human beings. Education should therefore be able to multi-task, perform various roles and adapt to circumstances, be flexible, variegated, open to higher wisdom – in short, it should, like all of us, be continually evolving. If the human body and mind cannot be compartmentalized into distinct systems, sections or modes of thought and feeling, then human education ideally must also evolve as holistic, complete and integrated in order to suit human life.

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ideal world of what higher education ought to be, imagine an academic utopia. And from a personal perspective, this utopia is trans-disciplinary in nature, soliciting multiplicity and limitlessness in the face of singularity and circumferences. The theory of education in general and higher education in particular is researched not so much in terms of pedagogy but more in terms of enculturation and cognitive discernment. Specifically, this paper intends to make a case for trans-disciplinarity in higher education as the need for the hour, though not denying the relevance of specialization and focus, but nonetheless stressing the significance and

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Meaning and Context of Trans-Disciplinarity

In a very interesting paper on “The Transdisciplinary Evolution of Learning”¹, Basarab Nicolescu says “Disciplinarity, multidisciplinary, interdisciplinarity and trans-disciplinarity are like four arrows shot from but a single bow: knowledge.” But what really is a discipline? How do we define it in practical terms? To explain it as simply a classification of subjects in the university does not seem to suffice. What is a discipline ideally supposed to do or accomplish? How does it correspond with human learning individually and collectively? If all disciplines are shot out of the self-same bow of knowledge, then discipline is simply a construct that defines a particular type of leaning in academics. In other words, discipline is a set of paradigms on which learning is based, a series of thought processes which an individual needs to experience in order to identify with a particular structure of knowledge, a prescribed stipulation of topics within a curriculum. However can knowledge in the substantive sense of the term be “structured” and distinctly constructed?

There are fields of knowledge, we are told, but studying them shows how these abstractions of structure are extensively fluid and shifting. They do however have a

range of prefixes in general that connote various nuances in these fields:

- Cross disciplinary: Viewing one discipline in the form of the perspective of another, for example, the history of maths or the physics of music.
- Multidisciplinary: The juxtaposition of several disciplines focused on one problem with no direct attempt to integrate them. For example, a painting by Leonardo da Vinci can be studied not only in terms of art and colour/design, but also in terms of geometry and art history. Similarly, Marxist philosophy can be understood in terms of economics, psychoanalysis as well as literature. Such blending of perspectives will enrich the study of the topic, it is true, but multidisciplinary studies always enrich the “home” discipline.
- Pluridisciplinary: The juxtaposition of disciplines assumed to be more or less related. E.g. biology and anatomy, or accountancy and commerce
- Trans-disciplinary: Beyond the scope of the disciplines; that is, to start with a problem, question, idea or issue and bring together different forms of knowledge to find an understanding of it.

Disciplines indicate that there are specific boundaries between fields of learning. The division between science and culture which took place three centuries ago according to Nicolescu is one of the most dangerous ones. This separation makes one imagine a distinct separation between one form of knowledge and the other, and is inevitably reflected in universities and in

their functioning. Not only do we see a bifurcation of knowledge, we also find in the mindsets of the members of universities and of society at large a hierarchy of sorts, favouring one “discipline” over another, favouring the scholars of one discipline over those who study another. Sciences and rational disciplines seem to be valued more than literary or artistic fields, putting a premium of worth on the former and a demeaning discredit over the latter.

This perspective has been formed on the narrow-minded logic that one discipline cannot include another line of thought from an appositional discipline, and that there is nothing in between the two disciplines. Real life, however, has overlapping and non-distinct lines of thought and one is often left wondering about what lies between any two divided and separated disciplines. For instance, our educational system and its followers believe physics cannot include literature or painting in it, because physics is a science, and cannot be blended with Art/s. But, one may ask, what about the excluded middle which is in between physics and literature, or physics and painting? “Pure” sciences and logical fields of knowledge may not even consider an idea of physics being connected in any way with literature or art, both departments being firmly separate. However, if one wishes to bring education to a real life and use it as a means of sustainability instead of specialization, if one wishes to be in a globalized reality wherein predictable job/career options are impracticable, if our world is to transition to a more tolerant, egalitarian and creative reality, we need to evolve into trans-

disciplinarity for a transformation of mentalities.

The term “trans-disciplinarity” was introduced by Jean Piaget in 1970ⁱⁱ in his studies on thought, education and cognition, thus bringing forth the perception of an over-reaching and under-cutting unity of knowledge.

UNESCO states that a trans-disciplinary approach is needed at all levels of society to devise options for a future based on the concepts of sustainability, equity, justice and peace. A trans-disciplinary, holistic understanding of the world’s problems – when transmitted to the public at large – is the starting point for developing a new global consciousness to drive changes in behaviour and lifestylesⁱⁱⁱ. It is with this view that this paper endorses trans-disciplinarity in higher education in particular and in all human thought in general. “Trans” in the term “trans-disciplinarity” indicates going across and beyond different disciplines.

The Advantages of Trans-Disciplinarity

Human language and meaning are in a continual flux. Saussure stated that language is arbitrary in nature, and Barthes wrote a treatise about the death of the author and the birth of the reader. Culture, therefore, is also continually evolving, and in this context, being singular and exclusive in mindsets or academia would imply discord, inconsistency, even conflict. The University is a cultural artefact, says Hyun, and is the most legitimized social agent creating, discovering, conveying, disputing, accepting, and disseminating epistemology and its agreement process^{iv}. (Hyun, 2011) A university, thus, is one of the privileged

places for an education geared towards the exigencies of our times. Instilling complex and trans-disciplinary thought into the structures and courses of the university will permit its evolution towards its forgotten mission today, which is the study of the universal. With a dialogue between “disciplines” and segregated arts and sciences, the university would become a site that welcomes humanism with a reunification of scientific culture and artistic culture, among other things.

Mono-disciplinarity makes for specialization and focus, it is true. Pure sciences and pure Arts are what give rise to experts and specialists in different fields of knowledge. However, on the other hand, knowledge from traditionally defined scientific disciplines could also be viewed as represented fragmented, compartmentalized and segregated knowledge. This leads to “blind spots”, says Hyun, in humans’ way of knowing, and when we attempt to apply discipline-specific knowledge to a complex task of real-life problem solving.

Moreover, mono-disciplinary perspectives are derived from binary systems of thought, which are the root of fragmentation in the world. Ideas of this and that, good and bad, high and low, worthwhile and worthless – are all results of binary mindsets, which not only pervade in academia, but also in the intelligentsia of society, and in the social order at large. Many transdisciplinary researchers have argued that mono-discipline-specific specialization is a reductionist method and is influenced by the system of division of labour that prevails in all human endeavours, where productivity and efficiency are at focus.

However, this kind of singularism perpetuates a manageable, clear-cut and “easy to control” framework for evaluation and organization. But is this how the human mind is – manageable, clear-cut and easy to control? In order to be faithful to the intent of the developing the human mind, academicians need to see their serious ethical obligation to borderless trans-disciplinarity.

In other words, the problem with mono-disciplinarity is not its emphasis on specialization, but its defining of boundaries and its fragmentation of knowledge. Academics may sit more comfortably with bifurcations and classifications. Knowledge and problem solving do not. Trans-disciplinarity is usually taken with the explicit intent to solve complex and multi-dimensional problems.

Because of globalization and increased inter-connectedness, human problems individually and collectively have become more complex and interdependent. Their solutions therefore also need to be thought out from multi-dimensional perspectives. For instance, the problem of poverty in India is not merely economical in nature. There are socio-cultural causes like excessive population, illiteracy, immobility of labour, and to some degree, even the caste system which prescribes and restricts professions based on lineage and caste.

Not only problems, but situations and positive conditions can also be understood and maximised upon with multi-dimensional perspectives. For instance, if one looks back at the recent economic recession in the world, and tries to evaluate why India was not as badly affected as

other countries, socio-cultural and religious causes may emerge as responsible. Since India has immense religious and cultural diversity, there is a continual flow of festivals celebrated wherein people spend money even from the little that they have earned. Consequently, the market keeps alive and recession may not seem as hard on the Indian economy as it would appear otherwise.

The point is that human beings face non-linear dynamics and circumstances, coupled with highly complex ethical dilemmas arising from psychological or socio-cultural paradigms. Higher education institutions therefore have the responsibility to create trends and develop mindsets that are equipped and prepared to deal with such circumstances and issues. This is only possible with trans-disciplinarity, not because it equips human minds with particular different disciplines, but because it creates a mental environment of multiplicity and plurality. A Trans-disciplinary perspective is therefore trans-cultural, trans-national, encompassing ethics, spirituality and creativity. Thus, such a perspective has the capacity to enable individuals to become citizens of a borderless world so that they can (a) articulate complex human problems intertwined with different aspects of human thought, (b) engage in collective and holistic problem solving, as against symptomatic or specialized approaches, (c) develop new knowledge that is beyond cultural, regional, national and disciplinary differences, and (d) enable a pluralistic society. UNESCO invites global education at large to reorient itself towards a holistic approach to learning,

which will lead individuals to sustainability in addressing the complex problems of today's world. Consequently, this type of learning not only breaks out of boundaries of disciplines, but also challenges time-bound structures. In drawing attention to lifelong learning, the UNESCO charter states that "learning requires that education not only be as broad as life itself, but that it continues throughout the full span of life."^v

Conclusion

The only type of education that will work effectively in human sustenance is an education that matches with the human spirit. The innate uniqueness of the human mind is the immense range of "differance" it is capable of, and its potential vastness of complexities can only be matched with trans-disciplinarity. Trans-disciplinarity is, in my opinion, the only viable option for education in our times. As Nicolescu states, "Transdisciplinary education has its origins in the inexhaustible richness of the scientific spirit, which is based on question, as well as on the rejection of all a priori answers and certitude contradictory to the facts. At the same time, it revalues the role of deeply rooted intuition, of imagination, of sensitivity, and of the body in the transmission of knowledge. ... Universal sharing of knowledge – a necessity of our world – cannot take place without the emergence of a new tolerance founded on the transdisciplinary attitude, one which implies putting into practice transcultural, transreligious, transpolitical and transnational visions."^{vi}

Today, coexistence and harmony in the global context does not mean only tolerating the other person's different opinions, colour of skin, and beliefs. It

goes beyond these, addressing and arousing the innate core unrestrained “freedom-ness” of the human mind, where in the true sense of Tagore’s words, “knowledge is free” of restrictions, fragments and boundaries. Trans-disciplinarity is the only approach which seems to lead towards this type of cognition, rationale and perspective. Higher education, then, does not need to

focus so much on specialization, singularity and logical reasoning, but more substantially on multiplicity, pluralism and fluidity. Intuitive knowledge is as relevant to the human condition as scientific thought; spiritual development is as valuable to the human spirit as mental development; creativity and emotional maturity is as profitable in human life today as mathematics and reasoning.

Endnotes:

1. <http://perso.club-internet.fr/nicol/ciret>
2. <http://cgu.edu/pages/8628.asp>
3. “Education for Sustainable Development -a Transdisciplinary Approach to Education: An Instrument for Action” (http://portal.unesco.org/education/en/file_download.php)
4. Eunsook Hyun. "Transdisciplinary higher education curriculum: a complicated cultural artifact" *Research in Higher Education Journal* Vol. 11 (2011) Available at: http://works.bepress.com/eunsook_hyun/1/
5. “Education for Sustainable Development -a Transdisciplinary Approach to Education: An Instrument for Action” (http://portal.unesco.org/education/en/file_download.php)
6. <http://perso.club-internet.fr/nicol/ciret>