

## Role of Interdisciplinary Studies in Higher Education in India

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### Abstract

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In India, the scenario of higher education is continuously evolving with time. As a result, Indian higher education is facing the challenge of interdisciplinary educational approach. This article is an effort to make understand the role of interdisciplinary studies in higher education in India. This new approach of study has become an important and challenging technique in the modern educational system. As the disciplinary specialization restricts faculties from broadening their intellectual horizons, the new interdisciplinary nature of study in higher education has enabled the growth, expansion and stature as a discipline and field of academic inquiry in its own right. Moreover, this approach helps students to broaden their disciplinary perspective as well which, in future will enhance their compatibility for job opportunities. However, implementing the interdisciplinary studies in an institute is quite problematic, such as both lack of interest and expertise of faculties and researchers to do interdisciplinary studies, departmental infrastructure, problem of using technical language etc. create obstacle in the path of implementing interdisciplinary studies in higher education. Now-a-days, the government is taking initiation to promote interdisciplinary studies in higher educational system.

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**Keywords:** Interdisciplinary, Monodisciplinary, Multidisciplinary, Types of Interdisciplinary

Education plays an indispensable role in the social and economical development of people and the nation at large. In this regard, the movement of 'higher education reform' in India in terms of its linger history of disciplinary and interdisciplinary studies are always debatable.

In post-independent India, the disciplinary format was reconsolidated in a new way.

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The existing separation between arts and science was then restructured into pure (or basic) and applied disciplines. This division of disciplines was thus predicted upon the ends to which a particular knowledge form could be put. Principles that govern and control all the systems in the universe are considered as pure or basic; and instrumentation or applicability of those principles comes under the applied category of concerned disciplines. However, in later time the disciplinary distinctions were no longer simply to do with methods, because by this time, the so called scientific methods had colonized all disciplines, including a conventional humanities subject, such as history. This was the hegemonic moment of Indian educational development.

India has made appreciable progress with regard to creation of infrastructure for higher education. However, according to the recent economic survey of India the unemployment rate is monstrous. There are more than crores of well-educated youth who are unemployed. This problem of unemployment probably emerges due to the gap between institutional input and industrial requirements, which can be filled only by inculcating two capabilities in students. Firstly, task performance capability where focus is on acquiring skills required by employers, and secondly, building conceptual performance which is not job-related rather behaviour and knowledge oriented. Moreover, these skills and knowledge are the engines of economic growth and social development. Now-a-days interdisciplinarity in higher education is often associated with liberal educational tradition, which is related to the cultivation of certain values, knowledge and ideals, and maintaining academic standard (Fraser, 1998). Here in this paper we will try to illustrate the role of interdisciplinarity in higher education.

However, the arguments for interdisciplinarity stem from debates surrounding disciplinarity. A discipline is knowledge or a concentration in one subjective field of study or interest. But the accelerating rates of scientific and technological innovation, globalization, hybridization of cultures, new information, and growing fluidity in employment are among many changes that portrayed as forces of fundamental transformations in the social and educational landscape and vis-a-vis. As a result, it is required to structure the intellectual and educational field. According to Christie and Martin (2011), "Disciplinarity is now out-moded and quickly becoming supplanted by 'cross-', 'multi-', 'trans-', 'inter-', 'postdisciplinarity'". Let's see how the concept of interdisciplinarity emerges.

- In monodisciplinary study, educator's focus is on one specialization (perspective or domain), gain confidence and comfort in that particular area, and yet not communicating and sharing knowledge actively with neighboring fields. Now-a-days, most often problems are less likely to reach upto satisfaction through concentrating on one discipline alone. This realization compels to advance in our thinking beyond monodisciplinarity.
- In multidisciplinary study, the subject under study is approached from different angles, using different disciplinary perspectives. However, neither the theoretical perspectives nor the findings of the various disciplines are integrated at the end. One of the major barriers to the multidisciplinary approach is the long established tradition of highly focused professional practitioners cultivating a protective boundary around their area of expertise.
- An interdisciplinary approach, on the other hand, creates its own theoretical, conceptual and methodological identity. Consequently, the results of an interdisciplinary study for a certain problem are more coherent and integrated. Moreover, the skills of synthesis and integration necessary for the cultivation of proficiency in multiple disciplines cannot easily be taught within the individual disciplines themselves. For Newell and Green (1998): "This process of synthesis requires an appreciation of the full complexity of the disciplines involved, especially an awareness of their often unconscious assumptions, in order to discern the underlying common ground or conflict between their insights. It is in these acts of conciliation and integration of disciplinary insights that the art of interdisciplinary inquiry is fully realized".

Thomas Kuhn (1962) likened up disciplines to the concept of paradigms. He proposed that there exist mainly three elements in a discipline: symbolic generalizations, models and exemplars which are continually evolve with 'paradigm shift'. Aram (2004) put forward the notion that disciplines are "thought domains – quasi-stable, partially integrated, semi-autonomous intellectual conveniences – consisting of problems, theories, and methods of investigation". They are quasi-stable because of its changing nature; partially integrated because they are internally fragmented and specialized; and semi-autonomous because the boundary of each discipline is not clearly defined. Although, disciplinarity leaves vacant certain unanswered "interstitial gaps" (Campbell, 1969). Thus, the prior notion of disciplines is varied continually and therefore, new entrants must "find their place".

According to Chettiparamb (2007) interdisciplinarity “filling the gaps that disciplinarity leaves vacant or in terms of transcendence surpassing what disciplinarity can ever hope to achieve”.

Again in contrast with disciplinarity Payne (1999) notes that “whereas modern interdisciplinarity dreams of the end of disciplines with their awful jargon and fallacious divisions of knowledge, the newer postmodern interdisciplinarity respects difference and heterogeneity, proliferating several dozen new interdisciplines.....etc. Significantly, these fields directly challenge modern humanistic objectivity and the idea of the university..... So it’s a mixed phenomenon, postmodern interdisciplinarity.” In an interview with Ruiz published in the e-journal Interculture, Leitch (2005) states: “In recent decades, not surprisingly, the autonomy of many academic disciplines has given way, to a greater or lesser extent. It seems an era of interdisciplinarity. “Theory” is born out of this moment. It is an unstable fusion of literary studies, linguistics, psychoanalysis, anthropology, Marxism, philosophy, gender studies, post-structuralism, new historicisms, postcolonial and ethnic studies, an open-ended postmodern assemblage that displaces the modernist formalism dominant from the 1930s to the 1960s.....”.

Heckhausen (1972) identifies six types of interdisciplinarity. They are presented in an ascending order of maturation:

1. Indiscriminate interdisciplinarity: This consists of “encyclopaedic endeavours” that end up in “curriculum mix-ups”. Here introductory studies of various fields are thought to counteract disciplinarity. However, it mainly provides vocational training for pre-university practitioners, but is also found when an “imperialistic” discipline claims other disciplines to be “auxiliary”.
2. Pseudo-interdisciplinarity: While two different disciplines sharing the same analytical tools such as mathematical models or computer models are claimed to be interdisciplinarity, this is then called pseudo-interdisciplinarity. Topics such as pattern recognition, game and decision theory and models of social action may form the topics whereby and through which integration is claimed.
3. Auxiliary interdisciplinarity: This happens when the method used by one discipline yields data that has an “index-value” for another discipline at its level of theoretical integration. If the level of theoretical integration is not achieved, it can lead to criticism and revision causing more sophistication and the development of more advanced interdisciplinarity.

4. Composite interdisciplinarity: This happens when different disciplines are brought together to apply different techniques in an effort at problem solving. This type of interdisciplinarity is engaged in technological instrumentality, wherein hierarchical sequences of clear-cut goals are pursued which might change a "person-environment" system or even innovate one.
5. Supplementary interdisciplinarity: This happens when disciplines in the same field develop a partial overlapping with certain subject matters. The overlaps come about by a correspondence between theoretical levels of integration. However, beyond that particular category there might not be an overlap. The overlap is seen, recognized and established to provide more complete picture of the subject matter. This type of interdisciplinarity exists in the borderlines of disciplines.
6. Unifying interdisciplinarity: This happens when there is a consistency between two disciplines in subject matter, levels of theoretical integration and methods. For example, in areas where biology reaches physics.

In India, the scenario of higher education has changing quite rapidly. The Yash Pal Committee report (2009) on Renovation and Rejuvenation of Higher Education laments that "what we have currently is a steel box of a system within which there are smaller boxes with no interaction with the outside or with each other". The report emphasizes the need for interdisciplinary experiences and this should help students sustain themselves "when the demands of a particular job market change." It would mean that students would be exposed to multiple subjects under the roof of one university or college. In order to promote interdisciplinary teaching and research in India, 417 departments of universities/colleges were provided with financial support (of up to INR 6 million per institution). Clark (1995) asserts, "The steady decomposing of disciplines into specialties, and then of specialties into more specialties, operates across universities as an uncontrollable, self-amplifying phenomenon. Disciplinary subdivision is a powerful pressure for departmental substructuring."

In spite of several benefits interdisciplinarity is not without criticism. Rahul Kanakia (2007) in one of his article quotes Donald Barr as saying "professors who focus on interdisciplinary studies isolate themselves from the core of their field." "In contrast, interdisciplinary studies focus on the fringes of a field, which lowers an academic's reputation in the eyes of his peers and hurts his chances for tenure" he adds on.

The academic system is still very much structured on the concentration of specific majors as disciplines and the integration of interdisciplinary studies have become unusual to the traditional fields of study. Rick Szostak (2007) explains that the methodology of the practice of interdisciplinary is lost when a single interdisciplinary course is then considered as a major field of study. He says "Most centrally, faculty members within interdisciplinary programs generally identify themselves primarily in terms of a particular interdisciplinary theme or question, rather than with interdisciplinary itself". The specialization in an interdisciplinary field thus creates a barrier for further integration. He is also worried that new interdisciplinary teachers "lack both interest and expertise in interdisciplinary research practice". Szostak argues against the interdisciplinary approach when noting that "It is sometimes argued (and I have witnessed these arguments myself) that the suggested material is too meta-theoretical, too far removed from the real world problems that interdisciplinary research usually addresses" (2007). Jeffrey N. Wasserstrom (2006) complains that interdisciplinarity has become "so fuzzy that a university's commitment to it is close to meaningless".

Even though the idea of interdisciplinarity in higher education is lucrative and beneficial, but in reality it is difficult to implement. It is time consuming and needs collaborative team work for its existence, which seem to be hard and exhausting disadvantage. However, at the end, the interdisciplinary approach inhibits many favored skills that are sought out by future academicians and employers. Students and their teachers will advance in critical thinking, communication, creativity, pedagogy, and essential academia with the use of interdisciplinary techniques.

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