

# The Significance of Interdisciplinary

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## Abstract

Interdisciplinarity is today crucial in seeking solutions to global social, environmental and economic challenges. Many of the world's great problems require an interdisciplinary approach in order to solve them. This is true of problems like that of health, politics, or cities or intellectual problems like relation between reasoning and emotion, the study of culture and identity, the link between music and learning. The traditional disciplinary boundaries that are cemented in the academic world are regularly questioned by the real world.

**Key Words:** Interdisciplinary Studies, Disciplinary Studies, Academic Boundaries and Global Problems.

“We are not students of some subject matter, but students of problems. And problems may cut right across the borders of any subject matter or discipline”. (Karl Popper). Problems do not come in neat packages: the impacts of global warming equally call on experts in geology, anthropology, natural hazard specialists and policy makers. The traditional disciplinary boundaries that are cemented in the academic world are regularly questioned by the real world.

“Interdisciplinarity consists in creating a new object that belongs to no one.” (Roland Barthes). The goal, then, is

not merely to produce new knowledge but also to engender new fields of inquiry. Interdisciplinary studies provide the essential mechanism by which the discipline questions itself and opens itself up to external examination—ultimately perpetuating reform. *Disciplinary without interdisciplinarity is a dead discipline.*

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problems like relation between reasoning and emotion, the study of culture and identity, the link between music and learning.

Let's say we want to find out why a particular disease is spreading among a community. You need to know about the disease, so you need some aspects of biomedicine. If the disease reoccurs at different times and in different places, you may need to use statistics and computer modeling to understand better how it is spreading. You may notice that the disease spreads more where people live in close communities or have a particular diet. So you may need to investigate the economics or politics of the situation that obliges people to live in a certain way. Finally, if the disease is concentrated in a non-English speaking country, you may need a non-English language to understand properly what is going on. Thus, for a full understanding, you may need to combine the subjects of Biomedicine, Computer Modeling, Economics, Politics and a foreign language.

Interdisciplinarity can be defined as:

A process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be

dealt with adequately by a single discipline or profession... [It] draws on disciplinary perspectives and integrates their insights through construction of a more comprehensive perspective. (293-4)

Interdisciplinarity is the employment of multiple disciplines in the examination of a specific topic. Interdisciplinarity may be regarded as a form of co-operation between various disciplines, which contribute to the achievement of a common end and which, through their association, further the emergence and advancement of new knowledge. It can be defined in terms of filling the gaps that disciplinarity leaves vacant or in terms of transcendence surpassing what disciplinarity can ever hope to achieve. Interdisciplinarity strengthens connections between disciplines and in that process it weakens the division of labor in disciplines, exposes gaps, stimulates cross-fertilization and creates new field of focus for knowledge inquiry. It expands the boundaries of conventional knowledge exponentially, and thus should be considered at the forefront of academic inquiry. Interdisciplinary studies ask complex or vexing questions that cannot be answered

adequately within the boundaries of the given discipline. In order to answer these troublesome questions, the scholar reaches out to other disciplines, borrowing tools, methodologies, or knowledge. The goal is to answer these complex and vexing questions. The interdisciplinary scholar stands at the edge of the known world of the discipline and looks out further and further.

Few points in an exultation of interdisciplinarity:

1. Creativity often requires interdisciplinary knowledge.
2. Immigrants often make important contributions to their new field.
3. Disciplinarians often commit errors which can be best detected by people familiar with two or more disciplines.
4. Some worthwhile topics of research fall in the interstices between the traditional disciplines.
5. Many intellectual, social and practical problems require interdisciplinary approaches.
6. Interdisciplinary knowledge and research serve to remind us of the unity-of-knowledge ideal.
7. Interdisciplinarians enjoy greater flexibility in their research.
8. More so than narrow disciplinarians, interdisciplinarians often treat themselves to

the intellectual equivalent of travelling in new lands.

9. Interdisciplinarians may help breach communication gaps in the modern academy, thereby helping to mobilise its enormous intellectual resources in the cause of greater social rationality and justice.
10. By bridging fragmented disciplines, interdisciplinarians might play a role in defence of academic freedom. (201)

Interdisciplinary study allows the student to learn by making connections between ideas and concepts across different disciplinary boundaries. Students learning in this way are able to apply the knowledge gained in one discipline to another different discipline as a way to deepen the learning experience. For example, it is not too difficult to find a theme which crosses over disciplinary boundaries in literature, art and history or science and mathematics. Studying topics thematically is one way to bring ideas together resulting in more meaningful learning. This can occur by allowing students to choose their own subjects and their learning is deepened when they reflect on the connections between what they are learning in different disciplines. Interdisciplinary teaching and

learning is maximized when professionals from different disciplines work together to serve a common purpose and to help students make the connections between different disciplines or subject areas. Interdisciplinary study allows for synthesis of ideas and the synthesis of characteristics from many disciplines. This approach is sure to foster a love of learning and ignite a spark of enthusiasm for knowledge.

Few motives in interdisciplinarity:

- practicing interdisciplinarity makes it possible for students to adjust to inevitable fluctuations in the job market.
- practicing interdisciplinarity creates possibilities for careers in new fields.
- practicing interdisciplinarity makes it possible for students to continue to remain interested and curious about their work, and they are more highly motivated as a result of feeling that the subjects they are studying are relevant to reality, and as a result of sensing the newness of the subject and the chance to have more enriching personal contacts.
- practicing interdisciplinarity emphasizes concepts and methods more than subject content, and thereby makes it possible for students to learn to handle instruments and to become more creative. (49)

Educational experiences are more authentic and of greater value to students when the curricula reflects real life, which is multi-faceted rather than being compartmentalized into neat subject-matter packages." In their view real-world problems are complex, so no single discipline can adequately describe and resolve these issues. That is why interdisciplinary forms of learning are prevalent and growing in abundance and stature throughout higher education.

Engaging students and helping them to develop knowledge, insights, problem solving skills, self-confidence, self-efficacy, and a passion for learning are common goals that educators bring to the classroom but interdisciplinary instruction and exploration promotes realization of these objectives. Educational researchers have identified that interdisciplinary learning promotes critical thinking and cognitive development and it also promotes understanding in heterogeneous ways.

Interdisciplinary instruction fosters the acquisition of foundational knowledge, promotes integration of ideas from multiple disciplines and provides insight on how to apply knowledge. The very structure of interdisciplinary learning is consistent with the core features of significant learning, so

students find interdisciplinary education engaging and thus an effective way to advance their understanding of topics under investigation. It promotes the integration of ideas from relevant disciplines - including moral philosophy when exploring an issue. So, ethical considerations are often part of an interdisciplinary examination of an issue. Interdisciplinary instruction advances the notion that ambiguity results from alternative perspectives on issues that are advanced by different disciplines rather than a shortcoming of a particular discipline. Thus, students acquire a better understanding of the complexity of problems of interest and the associated challenges of solving them. A host of disciplines attempt to understand the same or related problems, but each discipline adopts different mechanisms of analysis and approaches. Obtaining a clear understanding of problems with roots in multiple disciplines requires the capacity to integrate ideas and this skill is advanced by interdisciplinary learning.

Some more benefits of interdisciplinary study are:

- By interdisciplinary study learning becomes meaningful, purposeful and deeper resulting in learning experiences that stay with the student for a lifetime.

- Students cover topics in more depth because they are considering the many and varied perspectives from which a topic can be explored.

- Critical thinking skills are used and developed as students look across disciplinary boundaries to consider other viewpoints and also begin to compare and contrast concepts across subject areas.

- Students begin to consolidate learning by synthesizing ideas from many perspectives and consider an alternative way of acquiring knowledge.

- Exploring topics across a range of subject boundaries motivates students to pursue new knowledge in different subject areas.

- Interdisciplinary knowledge and application of different disciplines can lead to greater creativity.

- Worthwhile topics of research can fall in the 'spaces' between the traditional disciplines.

However, interdisciplinarity should be solidly grounded within a discipline, employing, at least in part and at first, existing scholarship and methodology. Interdisciplinary research then transforms the discipline, but is nonetheless based in that discipline. This form of interdisciplinarity might

be called discipline-based, in which disciplinary work is essential to interdisciplinary studies, and interdisciplinary studies are essential to the future development of the discipline. The discipline provides the fundamental tools of education, core knowledge, and identification of the problem, peer review, and dissemination.

### **Conclusion**

Interdisciplinarity provides new methodologies and new areas of inquiry. The goal of interdisciplinary studies, then, is not just to look at the same objects from a new perspective, but to examine new objects that have previously not been considered noteworthy or sufficiently related to the discipline, and to do so in new ways. If disciplinarity and interdisciplinarity exist at opposite sides of a binary opposition, the terms lose meaning; the structure collapses upon itself. Instead, these notions can be seen as sliding along a continuum. Disciplinary and interdisciplinary studies should permeate and infuse one another, operating in a complementary relationship. Disciplinarity provides the basis for scholarship and the peer-

review process. Interdisciplinarity offers the opportunities for new questions, new tools, and new objects.

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