

Interdisciplinary Teaching and Learning:

As we know the traditional approach to learning organizes content into compartments based on subject matter boundaries. In interdisciplinary and multidisciplinary approaches, content revolves around questions, themes, problems and projects. Interdisciplinary and multidisciplinary approaches make educational experiences authentic. Curricula that reflect real life are more meaningful to students. Students are able to see natural and logical connections that cut across content areas.

Meaning of Interdisciplinary teaching and learning:

Heidi Jacobs defines interdisciplinary learning as "a knowledge view and curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience".

Keith Barton and Lynn Smith suggest that interdisciplinary learning is especially important in the early grades so as to "provide authentic experiences in more than one content area, offer a range of learning experiences for students, and give students choices in the projects they pursue and the ways they demonstrate their learning".

Barton and Smith explain that interdisciplinary units enable teachers to use classroom time more efficiently and address content in depth, while giving students the opportunity to see the relationship between content areas and engage in authentic tasks.

Academic disciplines are good platforms to impart and generate new knowledge.

But interdisciplinary learning is required to solve complex problems and gain an understanding of issues as it may be beyond the ability of one single discipline to address an issue comprehensively or resolve a problem effectively.

To summarise, Interdisciplinary Learning is 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, and draws on the disciplines with the goal of integrating their insights to construct a more comprehensive understanding.

There can be two distinct approaches to interdisciplinary:

- I. The integrationist approach**, which considers a process by which ideas, information, methods and tools from two or more disciplines are connected, synthesized or blended.
- II. The generalist approach** where there is a dialogue or interaction between two or more disciplines but the disciplines are not blended into one another. Some experts consider this approach multidisciplinary.

Characteristics of Interdisciplinary learning:

1. Interdisciplinary learning draws from more than one discipline. For example when studying about "War" we may draw from History (to study about wars that have occurred), Economics (to study economic causes and effects of war), Geography (to study which regions have been afflicted by war), Literature (to see how poets and writers express events related to war), Political Science (to see how Political affairs determine events related to wars). Various disciplines contribute towards interdisciplinary learning. The content drawn from each

discipline enables the learner to understand varied perspectives of the issue being investigated.

2. Interdisciplinary learning must have a definite focus which is beyond the sphere of a single discipline. In interdisciplinary learning, the focus is such that a single sphere cannot give a complete understanding of the same. For example, the topic 'Health' is not just related to Science. It will include perspectives from Geography (as climate may be related to health) and Economics (as some diseases are related to economic status).
3. Interdisciplinary learning is pragmatic in approach meaning it should promote new understanding or a new solution about the issue being investigated. Students using interdisciplinary approach to learn develop a problem-solving attitude.
4. Interdisciplinary learning is a dialectical process requiring team work between people from more than one discipline. There is logical discussion of ideas and opinions that draw from different disciplines. To gain understanding of an issue from varied perspectives, one may need to confer with people from various fields and this help to come to logical and more objective conclusions about the issue being investigated.
5. Interdisciplinary learning is integrative. Students and teachers integrate disciplinary perspectives deliberately and productively. Elements of different disciplines (knowledge, understanding and skills) are put into a productive relationship with one another, and connections made help students to accomplish a new, deeper and broader understanding of the topic under study.

Allen Repo, Director of Interdisciplinary Programmes at University of Texas identifies four cognitive abilities fostered by interdisciplinary learning.

- A. Perspective Taking Techniques:** The capacity to understand multiple viewpoints on a given topic is improved. Students develop an appreciation of the differences between disciplines and especially their perspectives on how to approach a problem.
- B. Development of structural knowledge:** Problem solving requires declarative knowledge and procedural knowledge. Declarative knowledge is factual information related to the problem and procedural knowledge is information about the process involved. Both these are enhanced due to use of interdisciplinary learning.
- C. Integration of conflicting insights:** Variety of ideas from different disciplines is incorporated due to interdisciplinary approach. Rather than use approaches from a single discipline, students are encouraged to look out for alternatives from different disciplines and hence insights are enriched.
- D. Interdisciplinary understanding:** increases and hence holistic thinking occurs. It promotes higher order thinking skills such as creativity, critical and systems thinking, synthesis, evaluation and analysis.