

UNDERSTANDING OF INTERDISCIPLINARY CONCEPT AND EFFECTIVENESS FOR TEACHING- LEARNING PROCESS

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Introduction:

What does "Interdisciplinary" mean? The incorporation of information from other fields into study or education is known as an interdisciplinary approach. Every day, a tremendous amount of information is poured into our brain. One way the brain organizes and stores pertinent information for speedy recall is through its capacity to spot patterns.

Any educational problem is solved using an interdisciplinary exples approach, which may involve the use of two or more disciplines. Some Lace examples are educational psychology, educational sociology, and Sor educational Philosophy, Biology, Chemistry and Engineering, Technology, Computer science, Physics, Economics, Arts, culture, Humanities etc.

In today's world some challenges are inherently complex and cannot be addressed or resolved by any single discipline, so it requires a multifaceted and integrated approach across disciplines (Gibbons et al., 1994; Frodeman et al., 2010; Aldrich, 2014; Ledford, 2015). Rosalind Franklin, a chemist, and Maurice Wilkins, a physicist and molecular biologist, were the first to the ever-increasing complexity is what drives the need for multidisciplinary research. Surprisingly, one of the most significant and sometimes disregarded advantages of interdisciplinary education is that it empowers students to reflect on their specialty and understand the true nature of their disciplines.

Keyword: *Interdisciplinary, Effectiveness, Teaching, Learning Process.*

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Interdisciplinary Concept: Interdisciplinary or interdisciplinary studies involve the combination of multi academic disciplines into one activity (Like research projects). It gives knowledge from several other fields like chemistry, biochemistry and biology, biotechnology etc. it is like thinking in beyond limits and boundaries. Also it draws knowledge from several other fields like Science, Enginnering, Technology, sociology, civics, political science, anthropology, psychology, economics etc.

In simple terms, the term interdisciplinary or inter-discipline means an organizational unit that involves two or more academic disciplines. Interdisciplinary

teaching refers to the concept of learning a single subject from multiple perspectives. Proven to boost learning outcomes and enthusiasm around learning, interdisciplinary teaching allows students to think critically identify their own prejudices, accept the unknown and respect ethical quandaries.

In order to cooperatively address a topic of shared concern, the interdisciplinary method brings together the expertise of two or more fields. In order to support students' many learning styles, diverse backgrounds, interests, abilities, and values, interdisciplinary instruction relies on multiple content cogs working together to enhance student knowledge, problem-

solving skills, self- confidence, self efficacy, and a passion for learning and progressive thinking Interdisciplinary education builds solid frameworks for effective, overall development and students experiences in different ways and it will lead to innovation, skill teaching development etc.

As we see, The challenges facing by the globe are complex and increased day by day and it requires multidisciplinary or interdisciplinary approaches. The students will get a good learning experiences that incorporate information and they can adjust to new situation and give response to the particular problems in different ways.

Fellows of the Higher Education Academic should engage in "creating trans disciplinary or professional/work based materials." according to the UK Professional Standard Framework (UKPSF). Department of Business, Innovation & Skills' Teaching Excellence Framework (TEF), which states that "the challenges facing the globe are complex and increasingly require multi- or interdisciplinary approaches, "makes a similar suggestion. Offering students, a learning experience that incorporates information and abilities from various areas can be done in a variety of ways.

Challenges Of Interdisciplinary Research: As we grow as animals but having different brain development, we interact in different and collaborative way than any other animal, so as we are progressive toward new knowledge and better new worlds problems, possibilities. For each concept is somewhat connected that understanding we need inter-relational studies.

Over last some years, Interdisciplinary research is-

- Breaking boundaries
- Applicable for Problem solving
- Making bridges to connect
- Lack of single subject understanding

- Government polices and experts understandings results
- Focus in one way with depts using different areas
- How to connect subjects
- How to connect disciplines
- World need common solution
- Easy solutions in innovative way
- Good collaborations great results
- Working together
- Different problems are there for understanding of concepts

Practical barriers to interdisciplinary research include the difficulties of organizing meetings, developing a common language and knowledge, and understanding the task at hand. The causes of critical health problems are many and varied complicating the essential task of deciding on the focus of the group.

Although disciplinary approaches are used in interdisciplinary education, it goes beyond them by drawing conclusions from a range of pertinent disciplines, synthesizing their contributions to understanding, and then incorporating these concepts into a more comprehensive and ideally, cogent framework of analysis.

By switching from Trans disciplinary instruction and evaluation to walled content area learning, educators and students will have the opportunity to pursue material that is both relevant and engaging to them, creating an atmosphere that motivates learners and fosters ongoing curiosity. Teachers may feel overburdened by the demands of teaching when we view each subject area or academic discipline as a component of the educational system. Schools may integrate several academic subjects by applying an interdisciplinary approach to teaching and learning.

In order to support students' various learning styles, diverse backgrounds, interests, talents interdisciplinary instruction relies on multiple content cogs working well

get to develop student knowledge, problem-solving skills, self-confidence, self efficacy, and a passion for learning.

Understanding a complicated system's various facets enables us to get a more precise and thorough understanding of the system.

When we see some phenomenon like photosynthesis, then for school children's it is different and for masters students it is different level of teaching and learning. Up until the bachelor's or master's level (depending on the student's area of concentration), a science student continues to study it in more detail in each succeeding grade. In fact, some people have spent their whole careers researching this phenomenon, even at the elementary school level, we can explore this process from a variety of angles.

Student involvement in learning rises when emphasis is placed on offering interdisciplinary and project-based learning opportunities, leading to a culture where student directed learning becomes the rule rather than the exception. This classification begins rather early in our lives. For instance, science is taught separately in school or college and should not be combined with other courses. Even people who choose to work in science are frequently expected to gain specialized knowledge over time.

For instance, a cancer biologist might lack the knowledge necessary to identify and treat malaria, just as a chemist is unlikely to be expected to be able to use an X-ray machine. In general, it is expected that your emphasis would get more limited as you delve more into a scientific topic. Due to the complexity of the difficulties facing the globe today, many specialist people must now work together to combine their knowledge.

Since the professional world is interdisciplinary, higher education learning and teaching must adjust and take this into account. The Higher Education Academy and the Department of Business, Innovation, and Skills

both vehemently support this approach in the United Kingdom. The academic exchange between boat building and yacht design students was done to develop and evaluate an interdisciplinary learning pedagogical model, building on the well known advantages of multidisciplinary education. The suggested approach, which primarily focuses on the marine industry, has three bases: learning, reflection, and capabilities.

These bases promote studies, close the skills gap, and improve employ-ability, respectively. Scientists have made groundbreaking scientific discoveries outside the parameters of their specialized field of study. The most frequently noted benefit is the ability of pupils to draw connections between ideas and concepts from other domains, which produces a positive paradigm that results in deeper understanding. A more meaningful educational experience is one of the benefits of interdisciplinary teaching and learning, according to Nissani and Appleby, although this is not a complete list. Showcasing the new possibilities created by interdisciplinary cooperation.

The concept of the WBL (work based learning) pedagogical triangle created by Brodie and Irving might be modified based on the advantages emphasized to create a preliminary interdisciplinary learning (IDL) triangle, as given. Interdisciplinary teaching and learning are promoted at different levels in the United Kingdom. All of these methods are tried and true, but Maine DOE's encouragement of interdisciplinary learning better equips our students to choose a path those interests and rewards them. These are the approaches and the definitions we give for each.

The practical exercises deepened their past understanding while putting their skill sets to the test by transitioning from traditional lumber to modern composite. The exchange's professional relevance was also evaluated in terms of how the students felt it would improve their employability. In all situations, every student from both colleges gave different response. The

student has also been able to expand his or her knowledge and acquire new practical skills thanks to the multidisciplinary approach

Conclusions:

- In order to promote employment and effectively address the difficulties the different industries are currently facing, it also looks necessary to strengthen multidisciplinary learning and teaching.
- Capabilities that foster critical thinking, self assurance, and creativity with the goal of developing the crucial transferable skills for the workplace.
- Learning fosters fresh and inspiring learning opportunities as well as learning experiences that help student's better grasp their own discipline.
- As per the enhanced employability as a goal, one main goal was to promote the students' learning through an interdisciplinary interaction. Therefore, students were asked about the exchange's academic value, or how they felt it would advance their current studies. And how it will connect many dots to understand the concepts more clearly and it will apply knowledge for further study and life's problems for better solutions in any areas of life.
- Due to its many advantages, an interdisciplinary approach to education has long been appreciated. In some of the developed countries Professional Standard Framework and the Teaching Excellence Framework like United Kingdom provide national support for this practice, as do local initiatives like different University's having their particular strategy.
- Reflex ion, which demonstrates the practical applications of a studied theory and encourages a

variety of viewpoints on a particular subject, improving inter professional communication and enhancing problem- solving flexibility.

- Learning encourages new and inspiring learning experiences as well as helps student's better grasp their own discipline.

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