

## **Paper #2 Interdisciplinary Studies**

Clarence V. Kimbrell Jr.

Old Dominion University

IDS 300W Introduction to Interdisciplinary Theory and Concepts

Dr. Jeanie Kline

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## **Interdisciplinary Studies**

Interdisciplinary studies bring together pre-existing fields such as science, art, humanities, economics, etc., and many others to study ideas or concepts from multiple angles. Some fields work so well with one another that educators started grouping them to create programs like STEM. This program includes science, technology, engineering, and mathematics. When these single disciplines are utilized together, they create an interdisciplinary approach to a problem. For example, a phenomenon in the natural sciences could be approached with a mathematical background to solve why or how something occurs. There are countless benefits to interdisciplinary approaches such as speeding up resolutions or deepening the learning experience (Weller, 2021).

## **History of Disciplines and Interdisciplinary Studies**

In the past two hundred years education has changed drastically, moving away from information taught as influenced by classical texts (Misiwicz, n.d.). Teaching organized this way hit a roadblock when employers began to need specialized talent in the workplace. Thus began the shift to a larger focus on disciplinary studies in education. Splitting existing disciplines into subcategories, as seen extensively in science fields, allowed educators to emphasize the specific subdisciplines required to prepare newer generations of the workforce. The shift came at a cost, despite having highly specialized employees in the workplace it created countless situations where it was difficult for them to accept change (Payne, 1998). After practicing a single discipline-oriented education for decades, another shift has begun towards a more interdisciplinary-oriented one.

## **Interdisciplinary Studies of Natural Sciences and their Benefits**

Some disciplines work so well together that their combination creates new fields of interest. Plato Kapranos, editor of the *Interdisciplinary Future of Engineering Education Breaking Through Boundaries in Teaching and Learning*, suggests that there needs to be an emphasis on linking education with employability (Kapranos, 2018). As an example, combining chemical engineering and chemistry could be beneficial to students. Despite the disciplines having similar names, they are vastly different in practice. Verret (2022) states that “chemistry tends to focus more on understanding chemical systems rather than applying this understanding”. Verret then stated (2022), “Chemical engineering focuses on using science, particularly chemistry, but also physics, math, and biology, to create valuable products for society”. If someone chooses to pursue a chemical engineering career such as environmental engineering or petroleum engineering, they will also be exposed to other disciplines to help resolve problems and new products. When chemistry and chemical engineering are combined it can have some great benefits. A deeper understanding of chemical composition and reactions than is typically taught to chemical engineering students could enable the development of new products or systems. This is one of the thousands of combinations of interdisciplinary studies and their benefits.

## **Interdisciplinary Approach to Social Sciences**

Social Sciences is a term used to cover a multitude of disciplines that cover a broad spectrum of human behavior and its aspects (Greenfield & Nisbet, 2021). Take accounting for example which is a social science profession under the economics discipline. It is described as a recording and summarizing of financial transactions (Iwuzor & Main, 2023). Accounting takes the core academic disciplines of economics and mathematics and combines them. To be a

successful accountant you must understand the formulas taken from mathematics and apply them. This is not exclusive to just traditional accounting there are many subcategories within it such as financial, managerial, cost, and tax accounting (Iwuozor & Main, 2023). A great example is tax accounting, this is because tax varies on location and business. Tax accountants have formulas that they have to follow and adjust the values for their economic environment to produce an accurate solution.

Within the social science discipline, you can find another popular sub-discipline called demography. Demography is the statistical study of human populations (Brown, 2022). In this profession, the source material for statistical analysis is from many sources. Demographers have to pull information from many disciplines such as anthropology, biology, economics, geography, history, psychology, public health, sociology, and statistics (Curran, 2023). Demographers can then use this information to make analyses about population trends and declines around the globe or in certain places. They also provide crucial information to financial sectors such as whether it would be profitable to open a business in this location. Accounting and demography show an exemplary number of interdisciplinary approaches within their respective professions.

These professions accounting and demography are heavily interdisciplinary focused occupations. Without this approach, it would make for inaccurate solutions and biased data sets respectfully.

## **Conclusion**

Interdisciplinary approaches have been a main focus in education and the workplace. It provides countless benefits for human development (Misiewicz, n.d.). A study conducted in 1988 by William Newell and James Davis found that students who were taught in an interdisciplinary

way developed better reading, writing, and thinking skills. This approach is currently being challenged by politicians and educators because of the lack of funding (Misiewicz, n.d.). Despite studies providing sufficient evidence against the idea. It could all change in a matter of decades.

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