

Interdisciplinarity: An Understandable Trend but Laborious Undertaking

Tristan Woodard

Old Dominion University

IDS 300W

Dr. Jeanie Kline

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An interdisciplinary approach seemingly allows those using it to utilize more wisdom and knowledge than a purely disciplinary approach could alone. This extends not only to a scientific or natural sciences discipline, but also to the humanities and arts as well. The flexibility and universal applicability of an interdisciplinary approach could then be seen as one of its primary advantages. To illustrate this, one could look at a discipline within the natural sciences, and identify how it has changed since the advent of more interdisciplinary approaches, outline how professions within the field benefit from an interdisciplinary approach, and outline which disciplines might be used by those within said field. To detail further, it may also be helpful to also showcase an interdisciplinary approach in a field in the humanities, and detail which disciplines can intersect in the field, and how a purely disciplinary approach compares to an interdisciplinary one.

Interdisciplinary studies are an immensely valuable approach to use when engaging in the world of the natural sciences. An important reason why it is so, is because life and the world itself can be seen as not being limited to one single discipline. Taking a look at the field of Chemistry, for instance, can provide insight into understanding the topic better. Firstly, when discussing something like Chemistry, it's important to accept that not only can

one use numerous other disciplines to help better understand chemistry, but chemistry itself is so deeply tied into other disciplines, it is almost impossible to isolate numerous life and natural sciences away from chemistry's influence (Taylor et al. 2009). Biology, for instance, is a discipline so deeply tied to chemistry, that approaches one would almost guarantee that a deeper understanding and insight into one discipline would be achieved by also utilizing the other. Spreading out to other disciplines, imagine if knowledge of chemistry were not able to transfer into knowledge of what chemicals do to the human body in the real world. If interdisciplinarity did not exist between health sciences and chemistry, then such a thing may be the case then. It's the same with a discipline like physics. Imagine a scenario where researchers understood the properties and reactions of chemicals, but did not know why they reacted certain ways, how the constituent parts of the elements and chemicals functioned, and how to potentially expand the knowledge of new chemicals and reactions. Many chemicals on the periodic table only exist within our realm of knowledge today due to the fact that physics disciplinarians worked together with chemists, engineers, and other scientists to understand the physics of the elements, how to engineer a scenario to create them, and what chemical analysis can be taken from the reaction. With this in mind, it's important to understand just how vital it is that other disciplines intersect and interact during study and research. With chemistry as an example, one could easily see how stunted the collective knowledge of chemists would be if other disciplines were not utilized in pursuit of knowledge and understanding. Interdisciplinarity, however, is not just a ceiling raiser, providing only further leaps into expanded knowledge. At least one study has also posited that using the tools provided by multiple disciplines, understanding could be spurred in the application of certain disciplines like chemistry. This effect may even have benefits for helping students of lower socioeconomic backgrounds and minority students learn more effectively (Taylor et al. 2009). Chemistry is also a good example of the changing nature of how the sciences are

being approached. While fewer chemists are attaining PhDs, and some think that perhaps Biology or similar fields are becoming more attractive, with traditional Chemistry paths taking a back seat, the reality is different (Perks 2007). The chemistry field is not necessarily shrinking, but simply changing. Opening and opportunities for chemists are not necessarily going away. In fact, in some instances, there is a dire need for chemists. Multidisciplinarity among chemists is also becoming increasingly valued in this new landscape. This can be seen by how valuable it is to have skills within customer relations and advertising disciplines as a chemist. This all points to an overall trend of Chemists expanding their skill set and the field as a whole becoming more multidisciplinary. For instance, a Chemical engineer may seemingly benefit from having advertising or customer relation skills. Likewise, a Chemistry teacher is likely to increasingly be expected to have a better understanding of psychology, ethics, human relations, among numerous other skills. Overall, this look at chemistry is emblematic of the wider trend of the increasing use of and need for an interdisciplinary approach to learning, research, and work in general.

Choosing a discipline from the humanities can also help detail just how important interdisciplinarity is, and how it stacks up when compared to a disciplinary approach. Using linguistics, for instance, can provide a powerful look into just how different the two approaches would be in understanding and furthering growth for the wider field. At the outset, one would be hard-pressed to imagine a world where linguistics was not able to grow and develop using its adjacent and intersecting fields and disciplines. Imagine a linguistics that would not utilize anthropology to understand the cultures that created the languages within the field of linguistics. Imagine if archeology were not able to be utilized to provide insight into primitive forms of languages, and the earliest development of languages in general. Again, imagine attempting to teach linguistics without being able to use sociology or psychology to provide insight into how language is used to influence and communicate.

These all seem like not only fruitless exercises, but quite harrowing endeavors, as such a world where these were not possible would be a world with significantly less knowledge about the world around us and about the languages spoken within it. Even for those simply wishing to understand linguistics from the perspective of a student seeking to learn, interdisciplinarity is an all powerful tool. Imagine attempting to learn the words for dates in a language based on the use of a different type of calendar than the one the student might be familiar with. If one were not able to apply an anthropological lens to the situation, surely the understanding of the language would turn out improper. One may attempt to rigidly transpose the concepts of one culture onto another, when no such parallels exist. Psychology provides another helpful perspective, as the insight it provides into why language is used, in what contexts, and how it is used by individuals can surely help a student learn. Imagine attempting to learn when to use the polite forms of words with no insights into when and where to be polite, and in what context to do it. These are just a few examples of the innumerable intersections linguistics shares with numerous other disciplines. In such an interdisciplinary field then, it's no wonder that a purely disciplinary approach to linguistics has fallen out of favor, and at least three distinct interdisciplines in their own right have appeared within the wider discipline of linguistics itself (Nekvapil 1991).

In conclusion, the move towards interdisciplinarity is an important and fruitful undertaking within the sciences and humanities that has taken hold in numerous fields. With chemistry as an example, an interdisciplinary approach can be seen as an integral part of what is needed to properly understand the initial discipline, but also an integral part of learning within other disciplines as well. The humanities are no different, as taking a look at linguistics provides an insight into how impactful a proper interdisciplinary approach can be to achieving new knowledge in a field, as well as learning within the field itself.

References

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