Miller, M. & Boix-Mansilla, V. 2004, Thinking across perspectives and disciplines, GoodWork project report series, no. 27. Retrieved from: http://thegoodproject.org/pdf/27-Thinking-Across-Perspectives-3_04.pdf

Summary

This article explores the challenges associated with using knowledge from different domains (and people) to work on a common problem, issue or puzzle. It acknowledges that the differences in how disciplines structure their knowledge raise challenges when working across disciplinary boundaries. The article identifies these challenges and proposes ways of making integration happen.

Analysis

The authors contend that the different types of questions, language and priorities of what 'counts' (perspectives) in each discipline pose challenges for breaking down disciplinary boundaries. A disciplinary perspective includes its system of theories and its way of seeing and thinking. For example, a discipline's epistemic dimension (way of knowing) uses its own set of symbols (mathematical, scientific, algorithmic etc.) and it has its own set of professionals.

The authors define interdisciplinary work as building on and combining disciplinary perspectives to 'create a product, develop an explanation or propose a solution' that could not be achieved through a single disciplinary means. The authors posit that there are three key elements to their definition of interdisciplinary work:

- integration is a means to attain a worthwhile goal, and not the end in itself
- disciplinary expertise is considered seriously
- disciplines are intertwined and not just 'juxtaposed' – a finding in one domain should have an impact on another.

The authors identify a range of challenges in working across perspectives; these include different languages, standards of acceptability and units of analysis (attribute or entity). Different terminology (language) can hamper communications as well as misunderstandings, hence there needs to be a shared understanding of the differences. The authors contend that the best language/perspective to use is situational, depending on the purpose.

The authors offer the following strategies to support the effective integration of disciplinary perspectives:

- Develop reasoning through analogies – this involves mapping the properties and relations of one domain onto another. For example, mapping the concept of systems onto a discipline-connected topic.

- Create compound concepts – this means creating terms that straddle domains and represent an integrative understanding.

- Build complex and multi-causal explanations – this involves coordinating multiple perspectives by borrowing concepts and findings from a variety of disciplines to construct explanations about a phenomenon. It's a weaving process, bringing together analysis to reveal causes not previously considered.

- Advancing through checks and balances – this is using different perspectives to check the strength of a proposition.

- Bridging the explanation–action gap – this involves applying different perspectives at different stages of the project (maximising leverage of each discipline).

The authors also propose that the degree of integration of the disciplines can vary from a stereotypical approach that demonstrates significant misconceptions about disciplines to 'perspective-taking' where there is a willingness and ability to consider other perspectives to merging, where a new hybrid way of thinking is developed, almost abolishing the pre-existing perspectives.

The authors conclude by stating that the important dilemmas in the world are cross-disciplinary – they don't fit comfortably in one box; hence we should be engaging in practices that synthesise knowledge from multiple disciplines to capitalise our expertise.

Reflection

This article provides sound advice on what makes disciplines different and how these differences can be harnessed when collaborating on projects to solve problems, resolve dilemmas or address puzzles. The need to have a shared understanding of each perspective's language is important, and this begs the question as to the need for 'cross-discipline' terminology. The article also highlights that constructing an integrated program is complex, requiring more than an allocation on the timetable and teachers with expertise.