

A WIDER PALETTE

Shobhit Mahajan

A few years ago, the University of Delhi introduced a new, integrated course for some of its science undergraduate courses. The aim was to rationalize the curriculum and introduce new subjects. Among the papers introduced was an optional paper in Biophysics for the Physics students with the intention of exposing the students to a relatively new discipline which had hitherto not been taught at the undergraduate level. However, as it turned out, the course was not offered at any college. The basic reason for this was that no one could decide who will teach the course- Biologists or physicists!

This incident to me highlights several issues related to curriculum in general and interdisciplinary studies in particular- the design of curriculum, the suitability of the curriculum given the available human resources and infrastructural constraints, and of course the philosophical issue of the desirability of interdisciplinary studies.

An undergraduate curriculum is basically a formal academic plan for the learning experiences of students in pursuit of a college degree. The term *curriculum*, can have many definitions, but we can broadly define it as including goals for student learning (this could be skills and knowledge), content (the subject matter), instructional methods, activities, instructional resources (materials and settings) and finally, evaluation.

Given this broad definition, it is clear that a lot of attention needs to be paid to the development of curricula since it is ultimately that which will decide on the efficacy of education to meet its stated goals, namely of producing not only degree-holding individuals, but in fact a literate and

educated population in the broadest sense of the term. However, the situation in our universities on this front is dismal.

In most Indian universities, the curriculum is designed not by the people who will be responsible for teaching it, but instead by committees with minimal real representation from college teachers. The college teacher is the fulcrum around which education at the tertiary level revolves. This is not only because s/he is the person most informed about the actual ground reality but is also the person who has the potential to excite students about the subject. Unfortunately, his/her inputs into critical things like curriculum development are mostly ignored. This has a major impact on the quality of teaching since there is no sense of ownership of the curricula.

The curricula themselves in most places are outdated and uninspiring. Even where syllabus revision takes place frequently, there is little connection with reality in terms of capabilities of teachers to teach the syllabus, the infrastructure required to teach and most importantly, the level of the students. For instance, introducing new experiments in laboratories, without adequate preparation makes it impossible for the colleges to actually undertake them. Or, introducing new subjects (like microprocessors, computer programming, genetic engineering etc) without training the faculty members (who in most cases may not be familiar with them) leads to teaching becoming a farce.

Curriculum thus reduces to putting together a lot of content in a particular subject without any attempt to integrate the other components mentioned above, namely, delivery, evaluation, instructional resources etc. This whole exercise becomes even more facile in the case of the so called inter-disciplinary subjects.

Although we tend to think of interdisciplinarity as something novel, the fact is that for most of human history it has been the dominant paradigm in the pursuit of knowledge. From the times of ancient Greeks to the Middle Ages, subject boundaries for knowledge were fairly porous. It

was only with the immense growth in knowledge that specialization became the norm in academics.

However, a few decades ago it was realized that in a few areas, cross fertilization between disciplines has the potential of enriching them individually. What is more, it was realized that certain tools used in some subjects were eminently suited for completely different ones. For instance, the tools used in chaos theory, initially a branch of physics and mathematics, found use in areas as diverse as economics of the stock market and ecology.

From this, it was but a small step for the growth of inter-disciplinary courses which exposed the students to the tools and concepts of two entirely different disciplines. Though this approach of uniting two hitherto separate subjects yielded dividends in research, the experience in pedagogy was somewhat mixed. In certain institutions, mechanisms like joint teaching and appointment (across disciplines) enabled the success of interdisciplinary studies, but this was the exception rather than the norm.

However, in the Indian context, the experience has been, by and large disappointing. The interdisciplinary courses floated in universities are invariably caught in various traps, not the least of which is the syllabus being a simple minded concatenation of the individual syllabi into one, thereby losing out on the connections at the interface which is what makes the subject interesting. Add to this the orphan syndrome that is of the course being not owned by anyone and we have a recipe for disaster.

What is required of course is a variety of initiatives which empower the faculty into designing the curriculum, teaching it and evaluating the students. In the case of interdisciplinary studies, what needs to be added to this is an appreciation of other disciplines and a paradigm shift towards cross-discipline collaboration. Sadly, in our context, where collaboration even within a department is frowned upon, this seems like a distant dream.