

**EDITORIAL: TAILORING TERTIARY  
EDUCATION TO ADDRESS GLOBAL  
SUSTAINABLE DEVELOPMENT**

Most students embark on and complete their university education without adequate knowledge of the larger contexts of issues that need the investment of their intellectual capital. Essentially, grand challenges to human development and global sustainability have dimensions that are nested in humanities/social science, physical science, and engineering. An example is the set of issues that surround the frequent occurrence of natural and technological disasters in many parts of the world. This is an issue that challenges the capabilities of governments, educators, policy analysts, researchers, and corporations worldwide. Indeed, engagement in assessments of circumstances that surround the central focus of an individual's research or educational program can be very useful in framing fundamental questions for research and/or interpretation of observations. It may also be helpful in sustaining an individual's interest through his/her appreciation of the larger impacts of the research/educational program. Sustainable development provides good opportunities for engagement of university students on issues that span wide temporal and spatial scales. The three principal pillars are economic growth, sustainable resource utilization, and environmental quality. Basically, every social science, physical science, and engineering field can be shown to be capable of addressing one or more of these three pillars or/and their constituent parameters. At jurisdictional levels ranging from ward to multi-state regions, many options are available for addressing sustainable development issues. The major classes of options are engineering, communication/education, regulation, enforcement, market incentives, international/intergovernmental cooperation, and implementation of environmental management systems.

An important aspect of education for sustainability should be a focus on methodologies for optimization of these options to address specific issues and circumstances. Circumstances are indexed by constraints such as time, budget, and jurisdictional authority. Optimization of the myriad of factors that are

determinants of sustainable development requires the formulation and adaptation of both qualitative and quantitative models, data acquisition and analyses, and integration of methodologies and systems into decision support systems. Students should study and research into approaches to applying these systems to projects in economic sectors such as transportation, energy, health, environment, civil works, telecommunications, and agriculture. As many countries seek the attainment of sustainable development, the availability of program analysts and implementers that can address issues using the optimal combination of the options mentioned above, is critical. Beyond the availability of natural resources, the wealth, stealth, and health of nations depend on this factor.

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