

Globalization and Engineering Education: The Pendulum Has Swung Again

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Abstract

World-wide trade is transforming critically the production and distribution of goods and services and changing fundamentally the engineering profession. As critical technological skills migrate abroad, the competitiveness of nations is impacted severely and fundamental social and economic patterns are disrupted. Globalization has changed the nature, organization and location of engineering and research and development and necessitated significant changes in engineering education. Modern engineering curricula are expected to promote innovative thinking and to develop the interdisciplinary skills needed to become a successful practitioner in a global context. Dedicated courses on Globalization and Engineering are often part of an array of advanced course reinforcing the issues, concepts and methodologies shaping engineering in a world increasingly without borders. Currently, there are growing concerns about the impact of globalization on the maintenance of critical technological skills and research capacity within the context of the enterprise or the national interest. The uncertainty surrounding the changes advanced by globalization has led to spirited debates in many companies, regions and countries regarding the way globalization forces impact the competitive environment. Free trade has come under attack worldwide, after years of discounting the possibility of significant losses from its advance. The backlash against globalization and the emerging trade wars are again re-shaping engineering education. In a world becoming rapidly compartmentalized, engineering education is asked to address the needs of the increasingly national enterprise. It is imperative that the learning outcomes that have enriched engineering curricula in the last decade should not disappear with the receding popularity of globalization.

Keywords: competitiveness; curriculum; free-trade; higher education; research & development.