



From Nano to Macro: Engineering and the World's Transformation

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Recently, our country have experimented a considerable amount of changes when it comes to choosing a career for studying in a public university. In later years the authorities in charge of education have realized that if our nation wants to turn into a “first world” country, the investment in educating youth ought to be oriented to science and technology careers. The current situation of world’s economical market makes almost an obligation, for countries who want to reach “first world”, to have a high-technologically specialized manpower. Now the actual question is: How to make a country progress in terms of economy and technology in a society that moves very quickly in both aspects? The answer is to create a working class with access to both education and information, which also learns to move on as fast as the world; a group of versatile professionals as well. Engineering is the clear answer.

Nevertheless engineers are not raised in a day, not even in a year. If Costa Rica, as a nation, aspires to become a technologically developed country it needs to make a change in the way people are taught to think. It may sound like a tongue twister, but since pre-school ages, children are introduced in a teaching-based system, the teachers says and evaluates, but there is not a true warranty of the student actually learning; in learning system instead, the student “does” with the approval of the teacher, who at the same time evaluates. Nano – a term used for describing objects in a scale of 10^{-9} meters- could fit in the context of children learning how to reason scientifically since early ages, for applying this knowledge in “macro” ages and help the country to develop. Furthermore, these terms also have a big importance in engineering and science. The wide amount of nanotechnological applications for solving engineering problems and enhancing scientific research are simply too many for mentioning them all in a five-hundred-word essay, from materials nanometrical analysis to human tissue cultivation and the wide amount of biological, chemical and physical applications ranging between those two arbitrary parameters.

In addition, nanotechnology is a discipline that combines in a very delicate and subtle way many disciplines inside science and engineering. Biochemistry, electronics and medicine are just three examples of what can be nanotechnology useful for. Notice as well, these disciplines also have macro scale applications; actually most of their applications are in the “macro world”, ergo versatility is must have quality for all future

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engineers and scientist, the capacity of visualizing things through a microscope or one's own eyes with the same pragmatism and scientific accuracy without discrimination from one another .

As a reminder, or why not a postcard, education is the social mover and, as Bill Hicks would say, if we spent every cent wasted on war on feeding, dressing and educating the poor we can explore the space, inner and outer...

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