Biochemistry education in the knowledge-based Society

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ABSTRACT

A knowledge-based society (KBS) is a society with strong capacity to synthesize and apply knowledge, which is an asset of social economy and well-being. Education and research (E&R) are highly valued in a KBS. In this study, selected indicators were compared among some major developed-countries, in terms of their Gross Domestic Production (GDP) on E&R. E&R lead to the three pillars of a KBS, they are 1) educated manpower, 2) hardware and infrastructure, and 3) the 'software' of the society. Biochemistry, being closely related to E&R, is a foundation discipline of life sciences. Our survey revealed that, in addition to factual knowledge, other educational components, such as generic skills, ethical values, and social/cultural issues, should be included in biochemistry education (BCHE) on university level. Moreover, some KBS-oriented training for career success was identified; although there was a positive correlation between income and education in general, the income of equally educated individuals varied considerably because of different occupations. This phenomenon suggested that BCHE should be multidisciplinary so as to expand the career options for the graduates. Biochemistry students study not only science, but also medicine, law, or management; as a result, the skills from other disciplines are integrated to BCHE curriculum that expand students' choices of occupations. Finally, our study also recommended certain skills in the context of a KBS, which focused on a shift of mentality from a traditional society to a KBS. Taken together, our study proposed some ideas and visions for the future of BCHE in the KBSs.

Keywords: biochemistry; curriculum; education; generic skill; knowledge based society