Problems of engineering education and training in developing countries: Nigeria as a case study

A. A. AKINTOLA†, G. A. ADEROUNMU† and O. K. OWOLARAFE‡

Technological advancement serves as a major key to a nation’s development. On the other hand, proper engineering knowledge (acquired through appropriate structures) plays a major role in the attainment of a high level of technological advancement. Most developing countries find it difficult to impact adequate knowledge and training to engineers at different levels of training. An overview of the problems militating against proper engineering education in Nigeria is taken in this paper. The paper identifies poor funding, inadequate equipment, students’ population explosion (without commensurate facilities), lack of high-quality manpower (in terms of trainers or teachers), inadequate industrial training and poor attitude of employers as the dominant problems faced by engineering education in Nigeria. The paper, in addition to finding solutions to the above problems, recommends better remuneration for practising engineers, appropriate government policy and disposition and intervention of professional and international bodies (through provision of financial and material assistance) for assisting in the training and practice of engineers in Nigeria and in order that the country may achieve meaningful development comparable with foreign countries.

1. Introduction

Today, more than ever before, the ability of any nation (Nigeria inclusive) to realize its potential and sustain any form of national growth depends almost entirely on its ability to build and develop high-quality local human resources. Increased competition in a global market-place adds to the need and urgency to get the right people, with the right skills, in the right place, at the right time. To keep these people motivated, they must also be adequately remunerated. Considering the fact that the main thrust of current global competition is technologically driven, a well-articulated and co-ordinated nation-wide strategy for the development and training of engineering personnel becomes a critical success factor (Mbonu 2000).

The training of engineers in Nigeria is based on the traditional model of theory and practice in the university followed by 4 years’ pupilage through attachment in an industry to acquire necessary engineering experience. According to Salawu (2000), the theoretical aspect includes:

† Department of Computer Science and Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria.
‡ Department of Agricultural Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria.
* To whom correspondence should be addressed. Email: hadetoro@oauife.edu.ng or aakintola69@yahoo.com