



302/C

Engineering students' learning styles and their perceptions to become professional engineers

M I Sudasinghe* and C J Basnayakage

The Open University of Sri Lanka, Nugegoda

Students' enrollment for engineering studies has significantly increased recently with the establishment of private institutes of engineering education in the country. Owing to this rapid growth, a significant increase in engineering graduates entering the workforce of the country in the near future is envisaged. Student's knowledge, skills and attitudes are the most important aspects to be considered in order to train them as competent, professional engineers in the future. Hence, the facilitators in the teaching and learning process should understand the students' perspectives and their learning styles and how these could be accommodated in multidisciplinary engineering studies.

In this study attention was thus focused on investigating newly enrolled engineering students' perspectives and their learning styles based on Kolb's learning theory. A questionnaire survey was conducted with 116 randomly selected students to obtain relevant information for the study. Female enrollment in engineering studies was 13.8% while male enrollment was 86.2% of the total sample of students that represented different disciplines of Civil (21.55%), Mechanical (18.97%), Mechatronic (10.34%), Electrical and Electronic (25.86%) and Computer (23.28%) Engineering. Kolb's learning styles inventory distributed among the selected study groups was considered in order to identify the students' learning styles. According to Kolb's inventory analysis, 7.1% of male students and 2.6% of female students were "assimilators", i.e. those who are best at creating theoretical models. They are learners who take in new information abstractly and transform it through reflective observation. 20.7% of male students and 4.3% of female students were categorized as "divergers", i.e. who are best at viewing concrete situations from different perspectives. They are learners who grasp the experience concretely and transform it through reflective observation. 19.8% of male and 3.4% of female students in study group were categorized as "convergers", i.e. who are best at finding practical uses for ideas and theories. They are learners who perceive new information abstractly and transform it through active experimentation. 38.8% of male and 3.4% of female students were "accommodators" i.e. who enjoy carrying out plans and involving themselves in new challenging experiences. They grasp the experience concretely and transform it through active experimentation. Based on Kolb's learning style, learners in the "convergers" category can be considered as dynamic engineers who are capable of abstract thinking and having the strength on practical application of ideas and functioning of facts gathered by practical experience.

Kolb's learning style inventory is very important to assess the students' learning styles and the students enrolled in different engineering disciplines indicated different learning styles, perspectives and attitudes. The majority of students were not in the "convergers" category which is the learning and teaching model well suited for engineering profession. The facilitators' responsibilities are to design engineering curricula and evaluation methodologies to accommodate all learning styles to reduce the dropout rate in the learning process and to increase the students' interest in engineering studies.

Keywords: Kolb's learning theory, engineering, learning styles