Assessing the Outcomes of 2007 NKU Engineering Camps

Abstract

This paper compares and contrasts the outcomes of two, one-week-long summer engineering camps conducted with mostly similar components but for two different groups of pre-college students. One group consisted of mostly male students whereas only female students constituted the second group. The outcomes of the camps were assessed to evaluate the accomplishment of the objectives of the engineering camp project which was supported by the Center for Integrative Natural Science and Mathematics (CINSAM) at Northern Kentucky University. The results of the assessments will be used to modify the program in order to maximize its efficiency in terms of the program’s educational contents, its target audiences, and its outreach impacts.

Introduction

Interest is growing in the reorientation of educational programs to make them more outcome-based and results-oriented [1-4]. Outreach programs, as parts of recruitment efforts of educational institutions, are especially appropriate for outcome assessment. The results of such assessment allow evaluation of the accomplishment of the objectives and provide for fine tuning of outreach activities leading to the improvement of the quality of the educational programs.

Assessment tools used to evaluate the accomplishment of the outcomes of conventional educational programs that include class and laboratory activities may not be directly applicable to outreach programs which are not degree-based. A modification of such tools may be helpful in the evaluation of outreach programs such as summer camps intended for high school students. This is even more critical in the light of the fact that some programs such as engineering summer camps can be broad-based with a multifaceted agenda that includes exposure to science and engineering topics, hands-on activities in those fields, tours of firms and manufacturing plants and information-sharing sessions. The assessment process is even more intricate for collaborative camps in which the participants receive their training by instructors from several competitive programs including the physical sciences, pre-engineering, and engineering technology.

Recruitment efforts targeting different types of audiences may require appropriately tailored schemes that maximize their efficiency. The need for customization may become necessary for recruitment efforts intended for programs less populated by the target