Development and Application of Educational Programs to Provide New Opportunities to Engineering Students: Focus on CNU Engineering Fair

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ABSTRACT
This article presents the development and application of educational programs at Chungnam National University (CNU). College of engineering in CNU developed the engineering education program, CNU Engineering Fair, in 2009, and it is annually holding in September or October. The purposes of the fair are to show superiority of the college of engineering students of CNU, to strengthen the industry-university cooperation and to motivate students to lead their engineering interests. As a result of the fair, the opportunity to understand the college of engineering has been increased for students in the college of engineering as well as the public. As the development of human resources has been concerned, it gives us a chance for individual development and career development. Finally, the fair causes interests in engineering to high school students.

Keywords: Engineering Fair, Education, Educational Programs, Development, Application

I. Introduction
Recently, most engineering colleges have tried to develop and apply various educational programs to increase educational capability and employment rate of engineering students by enhancing their competitiveness.

According to the trend, College of engineering in Chungnam National University (CNU) has gathered various educational programs which are held in different seasons in a fair, Engineering Fair.

The purpose of CNU Engineering Fair is as follows:
First, the fair is held to show the superiority of engineering students in CNU.
Second, it is promoted that students and professors’ education and research capability in engineering field through the fair.
Third, it makes students as engineers trained up to the international level by motivating normal students who are not in high rank.

Fourth, it is also held to induce high school students’ interest in engineering and to attract outstanding students to the college of engineering in CNU through the invitation of local high school students and residents.

Fifth, cooperation system with college of engineering and industries is strengthened by holding the fair.

Finally, it helps improve engineering students’ awareness and knowledge for employment.

II. Engineering Fair 2011
The Engineering Fair has been annually held in September or October since 2009. The most recent fair was held on September 29–30, 2011. In this study, we introduce the Engineering Fair 2011. The opening is shown in Fig. 1.

1. Competition for Capstone Design
Sixteen teams, consisted of students having different majors, participated in the competition for capstone design. And the participants have prepared for the research and work from April. College of engineering sponsored each
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2. Competition for Graduation Work

Forty-three teams from 16 departments participated in the competition for graduate work. Each team consists of one professor and from 2~4 students. During the fair, visitors can watch the panels with students’ explanation as shown in Fig. 3.

3. Cooperation Fair between Industries and University

Fourteen industries, medium and small sized companies, participated in the cooperation fair between industries and university to inform their competitiveness and visions. A lot of engineering students visited to the industries’ booths and received consultation for their employment. The booths shown in Fig. 4 were provided by the college of engineering.

4. Job Fair

Job Fair is newly included in the program in 2011. For students in high ranks, it is a good opportunity to get the information for recruiting while it is a meaning to enhance awareness for job for students in low ranks. It consisted of corporate recruiting briefing, lectures by an employment specialist, lectures about patent attorney examination preparation, and booths for employment consultation.

In the corporate recruiting briefing as shown Fig. 5, two large companies informed guidelines for applicants with their information. After the briefing, they received a
question and answered to the question.

In the lecture by an employment specialist and lecture about examination preparation by patent attorneys, the employment specialist guides to preparation strategies for employment to all the participants. In Fig. 6, the lecture by the employment specialist is shown. On the other hand, in lectures by the patent attorney, two patent attorneys graduated in CNU gave the lecture for how to prepare patent examination and study respective majors to all the participants.

Finally, booths for employment consultant, consisted of image-making booth, aptitude-test booth, career-consultation booth, women’s career-consultation booth and women’s image-making booth As shown in Fig. 7 and Fig. 8.

5. Junior Engineering Camp

College of engineering annually has invited local high school students made them experience and understand about engineering. During Engineering Fair 2011, 82 students from 19 local high schools participated in a camp. The students were divided into two groups: each group experiences three different themes in engineering majors. The themes are as follows: designing cellular phone utilizing 3D design program, synthesis of metal nanoparticles, solar boat, making energy aluminum, and robotics. They are educated by engineering professors and graduate students in the relevant field. Further, students visited the exhibition hall where competitions are held in such as the competition for capstone design and competition for graduation work. Students’ activities are shown in Fig. 9 and memorial photo after the ceremony is shown in Fig. 10.

III. Conclusion

In the Engineering Fair 2011, approximately 2,000 people
took part in various programs. The survey result for participants’ satisfaction was high (4.58/5.00).

The advantages of the fair to the engineering students are as follows: 1. to provide the opportunities to be able to judge potential and creativity of the students. 2. to improve the leadership, followership and the presentation skill through competition. 3. to enhance thought way to solve the problem. 4. to collect recent information for the industries.

As a result of the fair, the opportunity to understand the college of engineering has been increased for students in the college of engineering as well as the public. As the development of human resources has been concerned, it gives us a chance for individual development and career development. Finally, the fair causes interests in engineering to high school students.

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