Discussion on Training Mode of Packaging Engineering—Taking Beijing Institute of Graphic Communication as an Example

Guo-Rong CAO1,a,*, Wen-Cai XU1,b, Quan-Xiao LIU1,c and Ling CHENG1,d
1School of Printing and Packaging Engineering, Beijing Institute of Graphic Communication, Beijing, China
a caoguorong@bigc.edu.cn, b xuwencai@bigc.edu.cn, c drlqx@163.com, d chengling9229@163.com
*Corresponding author

Keywords: Packaging Engineering, Training Mode.

Abstract. According to the characteristics and training objectives of packaging engineering, this paper analyzes the it’s training mode of Beijing Institute of Graphic Communication on the theme of "Individualized, classification training", which highlighting the professional characteristics of packaging engineering and providing reference for the reform of training mode of packaging engineering in China.

Characteristics and Training Objectives of Packaging Engineering

Packaging engineering is based on packaging engineering and packaging design, which integrated of a variety of natural science and social science. It’s a new, multidisciplinary and comprehensive science, it’s the combination of technology, engineering, art and humanities[1,2]. Packaging engineering face to modern packaging and related industries, actively adapt to the needs of national economic construction and social development, train advanced talents with comprehensive ability and innovative spirit of packaging engineering, which mastering the basic theory and skill of packaging engineering, having the ability of packaging structure and decoration design, packaging printing and post-press finishing and strong practical ability and innovative spirit. They can be engaged in packaging design, packaging printing and post-press finishing, quality inspection, technical management in the department of commodity production and circulation, packaging and printing enterprises, scientific research institutions, foreign trade, commodity inspection.

Packaging Engineering

Packaging engineering in our institute is divided into two directions of packaging system design and intelligent packaging technology. They are different mainly in the fifth and sixth semesters of professional courses. For example, the direction of packaging system design set up specialized compulsory course of packaging CAD, packaging machinery, ergonomics and so on in the fifth semester, and the other direction set up introduction to packaging technology, packaging anti-counterfeiting technology, logistics technology and management, etc. In the fifth semester, the direction of packaging system design set up specialized compulsory course of packaging standards and regulations, graphic design, packaging management, graphic design and so on, and the other direction set up intelligent packaging technology, packaging technology and application of radio frequency identification, etc.

Packaging Engineering Personnel Training Mode

Excellent Class

Actively explore the training mode of "excellent class". Ministry of education listed printing engineering in our institute as "excellent engineer training program" in 2011. Our school started-up
“excellent engineer training program” and establish excellent class in the end of 2012. According to the comprehensive score of freshman, apply the way of voluntary registration and balance interview to generate candidates, whom trained according to this program. This plan has been implemented for 6 years, and there are 5 differences between regular classes, which are unique training program, excellent teachers, adequate funding for research, attach importance to practice teaching, double tutors in graduation design.

**Cross Training**

"Cross training program of high level talents for colleges and universities in Beijing " including three sub projects, "double training program", "foreign training program" and "practical training program".

"Double training program" is a measure that training excellent students together by Beijing municipal colleges and central universities in Beijing. In accordance with "3+1" and "1+2+1" training mechanism, Beijing municipal colleges and universities each year will transport about 2000 outstanding students to more than 100 advantage of professional in 20 central universities located in Beijing, for a period of 2 to 3 years long-term visiting. At the same time, select students to urgent need professional of Beijing society set up by Beijing Central Universities for 1 year short-term visiting or attend a minor.

"Foreign training program" is a measure that training excellent students together by Beijing municipal university and overseas well-known university. Municipal universities will transfer students abroad for a period of 2 years visiting each year. City board of education set up a number of foreign training base belong to Beijing higher education, which receiving municipal university students for visiting term. Meanwhile, encourage and support municipal universities to establish and improve the long-term mechanism of joint training with overseas well-known universities actively, continue to broaden the channels for students to study overseas. There are 5 packaging engineering students in our college participate in this program in 2015, and 7 students in 2016, mainly in Taiwan University of the Arts, Bauer State University, University of the Arts in London, and other media art majors conducted a visiting term(students are sophomores).

"Practical training program" mainly includes three parts, which are Beijing college graduate design (thesis) project, deepening project of research and training project for university students from Beijing, Beijing entrepreneurship project. The first project use double tutorial system and select outstanding students to Chinese Academy of Sciences, Chinese Academy of Social Sciences and other well-known research institutions to accept scientific research and innovation training. The second project also adopt double tutorial system and select excellent students to go into the extracurricular practice teaching places, such as the training base of extracurricular talents and the base of engineering education practice. With graduation design (thesis) as the carrier, cultivate the students' scientific research innovation ability and fund science and engineering students with 60 thousands yuan one person each year. With the goal of solving problem, let the student practice the ability of innovation and the solving practical problem, fund science and engineering students with 20 thousands yuan one person each year. The third project also fund science and engineering students with 20 thousands yuan one person each year. All of the funds come from municipal finance.

### “3+1” Training Mode

This training mode has 3 years of basic and professional courses and internship and graduation project in the last 1 year. According to the scores of college entrance examination, students are trained in different class. In the first half of the year, through the approach of voluntary and selection students can enter the excellent class to learn for 3 years, also can be shortlisted foreign training program, learning time is 1 to 2 years. In the last year of university, students can be shortlisted practical training program, the learning time is 1 year.
Exchange Training

The university jointly educates students with Tianjin University of Science and Technology and Hangzhou Dianzi University. Each year, 10 students are selected to study at these universities, and their students are accepted to train in our institute. This project is selected from sophomore, exchanging time is half a year.

Training Mode of Practice Issues

The training mode of practice includes curriculum design (Sketch and color based training, Metalworking Practice II, basic training of package design, Packaging innovation training, Course design of packaging materials, Electronic technology practice I, Course design of graphic information processing and reproduction, Course design of packaging structure design, Course design of packaging and printing technology, Packaging printing practice, Course design of Packaging decoration design, Course design of packaging information detection and processing technology), packaging design comprehensive training, engineering training, graduation design, social practice (packaging and printing production practice, graduation practice), university research project (scientific research and experiment), all kinds of competition (packaging design competition), conference and exhibition services, etc.

Effect of Training

Remarkable Results of Training

The passing rate of CET_4 for students in excellent class in 2011 is 79% and the rate of passing examination of postgraduate is 15%. The passing rate of CET_4 for students in excellent class in 2012 is 92% and the rate of passing examination of postgraduate is 31%.

Enterprises Recognition

The employment rate was 100% in grade 2011 and 97% in grade 2012 for excellent class. Nearly 5 years, the average employment rate is 97.14%, signing rate is 87.24%, counterpart rate is more than 73%, 30% higher than 5 years ago. According to the survey, each year graduates from our institute go into the large enterprises of printing and packaging accounted for more than 60%.

Acknowledgement

This research was financially supported by the packaging engineering teaching team (construction) of Beijing institute of graphic communication (22150116006/017); A study on the cooperative cultivation of innovative talents in printing and packaging engineering in Beijing, Tianjin and Hebei province (22150116007/055); Development and application of micro level high speed visual quality testing instrument (10000200211).

References
