

Exploration on the "Innovation and Entrepreneurship" Talent Training Program of Design Class in Local Colleges and Universities*

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Abstract—As a kind of new education ideal and mode, the “innovation and entrepreneurship” education points out the direction of the path for training of applied talents of colleges and universities in a certain future period. This paper explores the integration mode of innovation and entrepreneurship education ideas based on the reform conditions of cultivation schemes for professional talents of design major in Baoshan College, the newly constructed local college from three aspects including training objective, training standards and curriculum system and proposes that the revision of talent training scheme oriented by major and the construction of curriculum system based on learning are the realization path worthy of further exploration.

Keywords—innovation and entrepreneurship education; ability structure; local colleges

I. INTRODUCTION

In 2014, Premier Li Keqiang put forward the idea of “mass entrepreneurship and innovation” on the World Economic Forum for the first time. And the idea of “entrepreneurship and innovation” was promoted to strategic perspective of new engine for national economic development in the Report on the Work of the Government made on the third meeting of 12th National People's Congress.

The mass entrepreneurship and innovation is the important strategy proposed based on the requirements of transformation development and domestic innovation potential which aims at optimizing the environment for innovation and entrepreneurship, inspiring the infinite intelligence and creativity of the mass and providing the opportunity for those who have abilities and want innovation and entrepreneurship to show their talents and realize the self-reliance through entrepreneurship and become amazing through innovation. In recent years, the study of “innovation and entrepreneurship” has caused extensive international and domestic attention and the domestic colleges and universities at different levels have gradually strengthened the attention on innovation and

entrepreneurship education and actively developed many studies which are developed mainly by referring to foreign experiences and have relatively slower progress. In 2015, it was clearly pointed out in the Guidance of Ministry of Education, National Development and Reform Commission and Ministry of Finance for Guiding Part of Local General Colleges to Transform to Applied Type that we need to closely centre on the national key strategies including innovation driving development and mass entrepreneurship and innovation and capture the origin of force and point for breakthrough to truly strengthen the ability of local colleges for serving the regional economic and social development and the ability for serving the technological advance of enterprises as well as the ability for creating values for the learners. The document pointed out the direction of the path for training of applied talents of colleges in a certain future period: the exploration of training mode for applied talents based on “innovation and entrepreneurship” education idea and action method becomes the foundation for local college development. It is a typical case that the talent training modes and methods of many colleges cannot keep up with the realistic society. The actual situations including “employment difficulty” and “labor shortage” reflect the structural contradictions existing in higher education [1]. The innovation and entrepreneurship education and training of applied talents are the integrated paths for jointly promoting the college education in the era [2]. The applied colleges need to timely adapt to the new situation of innovation and entrepreneurship and base on the essence and features of applied type to actively develop the exploration and practice of training mode for innovation and entrepreneurship of applied colleges and practically integrate innovation and entrepreneurship education elements into the whole process of talent training so as to practically train the innovation and entrepreneurship abilities of college students.

II. ABILITY STRUCTURE ANALYSIS IN TRAINING OBJECTIVE

A. Contrastive Analysis of Ability Structure in the Training Objectives of Different Majors of Design Class

At the beginning of 2018, the Ministry of Education issued the National Standards for Undergraduate Professional

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Teaching Quality of General Colleges which stipulated the requirements on the training objectives of design major: possessing strong sense of duty, scientific rational spirit, leading aesthetic judgment, systemic professional knowledge and mastering corresponding design thinking, expression, communication and management skills, being capable of design and research, promoting major development, undertaking design education and related research works, possessing independent entrepreneurship ability and meeting the requirements for socialist modernization. The determination standard for training objective is based on the professional ability level that can be reached in five years after graduation. While the top-level design of innovation and

entrepreneurship abilities in talent training schemes is to penetrate the idea of “innovation and entrepreneurship” education into the whole process of teaching and cultivate the abilities of each teaching module based on the idea of innovation and entrepreneurship but not to specially design a module or arrange several kinds of curriculum. Innovation education is to train the innovative thinking and innovation ability of students; while the entrepreneurship education is to guide the students to put the consciousness of innovation and innovation ability into practice, find opportunities, and be brave to grasp opportunities to realize the objective of turning abilities into productivity.

TABLE I. CONTRASTIVE ANALYSIS TABLE FOR THE TRAINING OBJECTIVE OF DIFFERENT MAJORS OF DESIGN CLASS OF BAOSHAN COLLEGE

Major	Training Objective (Professional Level Reached in Five Years after Graduation)	Extraction of Key Abilities
Visual communication design	Possess high sense of social responsibility and basic cultural intelligence and artistic appreciation.	Sense of social responsibility, design skills, innovation and entrepreneurship, international view and adaptive capacity
	Possess encyclopedical theoretical attainment, solid professional basis and rich design skills.	
	Possess cultural self-awareness, active innovation spirit, practical skills and international view.	
	Have an idea of sustainable development.	
Environment design	Possess high sense of social responsibility and basic cultural intelligence and artistic appreciation.	Sense of social responsibility, humanistic quality, system method, creative thinking, integral consciousness, aesthetic quality and engineering qualification
	Put the system design methods, creative thinking and comprehensive design expression and other application abilities into practice.	
	Possess strong environmental integral consciousness and comprehensive aesthetic quality.	
	Possess the career development ability and market adaptability of engineer qualification.	
Product design	Be capable of solving the problems of product design and innovation.	Design innovation, practical skills, secondary education teaching, independent entrepreneurship and adaptability
	Possess strong operational and practical skills and pay attention to the inheritance and development of traditional technology.	
	Possess strong drawing foundation and speech abilities and be capable of teaching works in primary and secondary education institutions.	
	Possess strong communication and marketing planning abilities and be capable of independent entrepreneurship in related fields.	
	Grasp the design development trend and new design philosophy and realize professional development.	
Costume and clothing design	Possess scientific world view and correct view of life.	View of life, practical skills, R & D skills, communication and cooperation and independent entrepreneurship
	Possess the ability to engage in the works including costume and clothing design, platemaking and technology, presentation and marketing, production and management, etc.	
	Possess the ability to engage in costume and clothing design, research and development.	
	Possess the ability of costume and clothing product design and development.	
	Possess strong ability of teamwork and interpersonal communication.	
	Possess the ability of using professional expertise to establish teams or enterprise.	
Industrial art	Possess the ability of using the theoretical technology, policies and regulations related to the major to solve problems.	Practical skills, innovative research and development, special research and development, education service and independent entrepreneurship
	Possess the ability of holding the innovation and development of products of industrial art series.	
	Possess the ability of participating in preparation of industrial standards, specifications or study and training materials.	
	Possess the ability of further research of theory and overcoming technical difficulties in certain field.	
	Possess the ability of managing, teaching or training the technical personnel in industrial art major.	
	Possess the ability of using professional expertise to establish teams or enterprise.	

B. Ability Structure Category and Characteristics

There are four kinds of consciousness, four skills to be mastered and five abilities to be possessed for the requirements of training objective in National Standard. It can be found through comparison of graduation requirements and training standards for talent training of different majors (see details in "Table I"): first, from the perspective of extraction of key abilities, the training requirements of different majors are mainly concentrated on sense of duty, professional skills, aesthetic judgment, design thinking, communication and cooperation, basic study, design education and innovation and entrepreneurship, etc; and the aspects including management skills, scientific spirit, professional research and development and promotion of professional development still need to be improved; second, on the aspect of "innovation and entrepreneurship", the environment design and visual communication design focus more on innovation education while product design, costume and clothing design as well as industrial art focus more on entrepreneurship. There are large difference and personalization among different majors; third, environment design major proposes engineer qualification to measure the individual professional development standards while industrial art advocates that the team spirit is worthy of promotion.

III. INTERPRETATION OF GRADUATION REQUIREMENTS AND TRAINING STANDARDS

A. Analysis of Training Standards of Different Majors of Design Class

The fabrication of training standards (graduation requirements and training standards) is to assess the

professional level that can be achieved after four-year undergraduate education of students. The National Standard for Teaching Quality of Undergraduate Major of General Colleges and Universities puts forward three assessment requirements including quality, knowledge and ability. In addition, it also requires the different majors of design class to strengthen the knowledge conveyance and ability training for the specific contents of professional fields. It is found through the comparison of graduation requirements and training standards of different majors of design class that (see details in "Table II"): first, different majors prepare the graduation requirements and training standards basically according to three assessment requirements and there will be certain differences in support indicators; second, The requirements on quality standards of product design major lack professional spirits and those of costume and clothing design and industrial art lack the requirements on training of physical and mental quality; third, there will be certain defects if the requirements on knowledge standards of visual communication design major are classified according to subject system which is against the guidance logic from top to bottom of revision of talent training; fourth, on the aspect of "innovation and entrepreneurship" training, visual communication design, environment design and product design majors focus more on the training of innovation ability while costume and clothing design and industrial art focus more on the training of entrepreneurship ability.

TABLE II. CONTRASTIVE ANALYSIS TABLE FOR GRADUATION REQUIREMENTS AND TRAINING STANDARDS OF DIFFERENT MAJORS OF DESIGN CLASS OF BAOSHAN COLLEGE

Standard/ Major	Visual Communication Design	Environment Design	Product Design	Costume And Clothing Design	Industrial Art
Quality standard	Political quality	Political quality	View of life and values	Humanistic quality	Humanistic quality
	Occupational qualities	Occupational qualities	Citizen quality and humanistic quality	Professional spirit	Professional spirit
	Physical and mental quality	Physical and mental quality	Physical and mental health		Professional integrity and standards
Knowledge standard	Public basis	Public basis	Humanities & social sciences	Humanities & social sciences	Humanities & social sciences
	Discipline basis	Professional basis	Professional knowledge and thinking	Discipline basis	Discipline basis
	Basic knowledge of major	Environment design and society	Application of modern tools	Costume and clothing design	Product design
	Professional core	Construction of Human Settlements	Technological practical skills	Clothing and custom making	Model and material fabrication
Ability standards	Professional practice	Environment design	Solution for design and development	Discipline basis	Discipline basis
	Scientific research	Innovation and research	Marketing planning and communication	Professional basis	Professional basis
	Major innovation	Problem analysis and solving	Design research and writing	Innovation and entrepreneurship	Innovation and entrepreneurship
	Professional development	Communication and negotiation	Aesthetic appreciation and drawing ability	Communication, cooperation and competition	Communication, cooperation and competition
		Professional development	Design and society		Internationalization

B. Exploration of the Path for Integrating “Innovation and Entrepreneurship” Education Idea into Training Standards

Training standards are the first step for realization of training objective and are also the most important step. The integration of “innovation and entrepreneurship” idea into training standards aims to the training of innovative thinking, consciousness of entrepreneurship and practical abilities of college students but not the overlay of supervision on innovation education and entrepreneurship education [3]. And the implementation paths can include following three aspects: first, complete the education system based on the education purpose of morality education and combine the education of professional abilities and training of innovative thinking and entrepreneurship abilities to build the curriculum system in a scientific and systemic mode; second, build the core abilities trained in each year based on the three training requirements and professional orientation including quality, knowledge and ability to form ability module. For example, environment design major requires students to gradually master the four abilities including model, design and engineering management in the four years in college; third, advocate to establish the practical teaching mode centered on students with guidance of application issues, program driven interactive inversion, etc to comprehensively train the critical thinking and lifelong learning and enhance their teamwork consciousness, etc. [4].

IV. CONTRASTIVE ANALYSIS OF “INNOVATION AND ENTREPRENEURSHIP” ABILITY TRAINING ABILITIES AND CURRICULUM SYSTEM CONSTRUCTION

The curriculum standard is the teaching guidance document which stipulates the curriculum nature, curriculum objective, content objective and implementation suggestion of

a certain discipline and is the definition and expression about what the students should know and can do after a certain period of learning. It actually reflects the expectation of the state on the learning achievements of students. Compared with the “innovation and entrepreneurship” ability training module of different majors of design class (see details in “Table III”), the clothing and costume design and industrial art majors specially set up the innovation and entrepreneurship ability module and also construct the curriculum system including “marketing and e-commerce” except for school public innovation and entrepreneurship curriculum. It also puts forward the post entrepreneurship and independent entrepreneurship ability training thoughts; while the visual communication design, environment design and product design focus more on the innovation ability training and specially set up creativity and innovation ability training module but lack the support of practice curriculum.

The curriculum standards usually include several kinds of standards with internal relations that mainly include content standards (designating study fields), expression standards (stipulating the level that students should achieve in certain field) and assessment standards. The construction of curriculum system generated based on learning is the effective approach for realization of sustainable construction of “innovation and entrepreneurship” education idea. The learning outcomes are the learning achievements expected which usually come from the duty list of each function. It is important that they are driven by outcomes. This means that the learning outcomes do not describe what the students will learn, what they will be taught or how they will be taught and how should they learn. Learning outcomes are described as what the student will be capable of after finishing the learning of the knowledge, skills or attitudes of a certain module.

TABLE III. CONTRASTIVE ANALYSIS TABLE OF “INNOVATION AND ENTREPRENEURSHIP” ABILITY TRAINING MODULE OF DIFFERENT MAJORS OF DESIGN CLASS OF BAISHAN COLLEGE

Major	“Innovation and Entrepreneurship” Ability Training Module			Core curriculum
	Level I	Level II	Level III	
Visual communication design	Ability standard	Professional innovation	Innovative thinking and comprehensive design expression	Internship investigation, professional social practice, graduation design and professional skill training
		Professional development	Sharing of preferential design achievements	Innovation and entrepreneurship and academic technology and professional competition
Environment design	Ability standards	Professional development	Preliminary entrepreneurship ability	Entrepreneurship foundation; college student career planning; innovation and entrepreneurship and academic technology
		Innovation, creativity and research	Innovative thinking manifestation	Professional internship, graduation practice, professional collection and graduation design
			Scientific research and professional competition	Digital design training
Product design	Ability standard	Design and society	Independent learning and continuous learning	Entrepreneurship foundation; innovation and entrepreneurship and academic technology
Costume and clothing design	Ability standard	Innovation and entrepreneurship	Career planning	College career planning; entrepreneurship foundation; employment and entrepreneurship guidance; innovation and entrepreneurship practice; cloth industrial standards and occupation training, cloth industrial standards and occupation training, graduation practice, marketing and e-commerce
			Post entrepreneurship	
			Independent entrepreneurship	
Industrial art	Ability standard	Innovation and entrepreneurship	Post entrepreneurship and independent entrepreneurship	College student career planning, entrepreneurship foundation, market expansion and industrial standards, oriented practice, employment and entrepreneurship guidance, innovation and entrepreneurship practice, professional internship, graduation practice, marketing and e-commerce
			Self-learning, cooperation and competition	

V. CONCLUSION

As a kind of new education idea and mode, “innovation and entrepreneurship” education does not just mean to establish an enterprise through financing and is not completely equal to innovation or entrepreneurship. It advocates “the unity of knowing and doing”, comprehensive development of abilities and the principle of possessing both political integrity and ability so that the students can fully use their innovation awareness and entrepreneurship skills and create more social wealth at the same time of meeting their employment requirements. The innovation and entrepreneurship education is just in the emerging stage in our country and is especially weak on the aspects including support and guarantee, professional curriculum system, study of realization path and faculty. And the talent training scheme revision based on major orientation and the construction of curriculum system generated based on learning are the path for realization worthy of exploration.

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