Mode of Innovative Design to Product Transformation of College Students

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Abstract. Since Premier Li Keqiang proposed the concept of “mass entrepreneurship and innovation” in 2014, innovation and entrepreneurship have become a force that cannot be ignored in economic development. "Made in China 2025" proposes to comprehensively upgrade and develop China’s manufacturing industry, which is undoubtedly inseparable from the deep integration of innovative design. The “China Good Design Award” came into being in this entrepreneurial and innovative environment. Company, research unit and individual’s independent innovation ability have received unprecedented attention. Among them, industrial design students have many innovative ideas and design creations, and much of them can be productized and put into the market. However, those high-quality innovations and designs don’t have a chance to face the market. Many excellent innovations that could be used as venture capital and help the country’s “double innovation” policy get lost, it is a great lost for the country, the unit and the individual. The new trend of economic development—“Internet +” has also brought new possibilities and ways for “double innovation”. Therefore, in such a vigorous environment, I hope to make full use of the existing conditions to find a way that can help college students to put their industrial innovative design products into market.

1. Research questions

1.1. Research purposes
We want to develop a model to help college students’ innovative design to transform into products and help them start their own businesses. College students, especially design majors, continue to experiment with innovative designs after starting professional courses. Many colleges and universities are gradually combining teaching with practical topics. There are many innovations in student curriculum design and they have practical utility. However, in fact, also there are many innovative designs and ideas, the ratio of those designs and ideas turn into entrepreneurship is still not high. Many practical designs and ideas are lost. So I want to explore the problems and find the corresponding solution.

1.2. Research significance
We can make full use of the innovative designs and ideas of college students, and combine various resources to help students start a business. Specifically for the following seven points: 1. Students can understand the company and the market in advance and expand their knowledge. 2. Deepen their professional knowledge, train their ability to work, and have an advantage in future employment. 3. Students can also enrich their research results, increase their personal income and improve their living
standards. 4. Develop professional talents for enterprises and society in advance. 5. Enterprises can also use this to develop new products, expand markets and acquire new business opportunities. 6. Respond to the “double creation” call to help economic development and increase market vitality. 7. Relieve employment pressure.

While college students and businesses gained profits, they will encourage more college students to carry out innovative design, encourage more enterprises and businesses to help students innovate and start their own business, form a virtuous circle, respond to the call for “double creation”, and help “China Manufacture 2025”, integrate innovative designs with other industries, and play the core strength of innovative designs.

2. Overview of research at home and abroad

In China, “popular innovation and entrepreneurship” is in full swing, while foreign countries have placed innovation at the forefront of development. In 2015, the United States released the “New Strategy for American Innovation” to promote innovation of various industries and make full use of the creativity of citizens. The UK also has a strategy paper entitled “Our Growth Plan: Technology and Innovation”. Organizations and countries such as the European Union and Japan also have corresponding policies to promote innovation.

From the perspective of design, the United States had the strategy of “designing the United States” as early as 1992, and regarded design, especially industrial design, as an important means of national strength growth. In Asia, Japan and South Korea were the first countries to raise their designs to the height of national industries. Although China started later than them, the development is relatively fast. “Guidelines on Promoting Industrial Design Development” in 2010, also promoted the development of the design industry to the national level.

The new words such as innovative design and creative design are the original creations of China, and there is no corresponding words in foreign languages. It can be said that the word “design” has its own meaning of innovation and creativity. When designing education abroad, it pays special attention to practice. Whether it is a research center in the school or a joint teaching between the school and the company, the actual design work is carried out while teaching. In China, innovation and entrepreneurship are closely linked.

Generally speaking, there are four main types for students that can make their design work turn into a real product at home and abroad: 1. Course teaching combined with actual projects. 2. Independent design that echoes the surrounding environment. 3. Product design through the competitions. 4. Promotion of design results based on new environments such as Internet+ and big data. However, these models do not elaborate on the specific process of design works’ transforming, and most of them are guided by company projects. Students are still only completing the design work itself, instead of turning their own innovative designs into products. Only some specific areas, such as ceramics, clothing, which are relatively simple for making and selling, can be completed by students independently. However, in general, productization needs to consider more factors: design feasibility evaluation, design requirements, materialization requirements, market evaluation, funding sources, sales channels, legal assistance and many more.

2.1. Course teaching combined with actual projects

The Art Center College in the United States directly invites famous designers or artists to teach at the school. Many well-known companies such as Nike, Sony, ADOBE, etc. will also cooperate and sponsor the school project. The University of Cincinnati pioneered the CO-OP, a paid internship program, which was emulated by more than 40 countries. A paid internship program means that students can participate in actual projects and receive salary during their school days. It not only improves the income of students, but also helps students gain professional experience in advance and increase employment opportunities after graduation. International students can earn between $40,000 and $60,000 in 12-18 months of paid internships. The School of Visual Arts in New York, the Bolimonta Fashion Institute in Italy, the internship base at Essen University in Germany, the studio
training system in France, and the project cycle practice in Japan are all project-oriented and guide students’ design. In China, Tsinghua University will invite professional designers to participate in student work review. The “Innovative Design Workshop” of the College of Art and Design of Hunan University also has many cooperations with famous companies such as Philips. Huazhong University of Science and Technology also has its own innovation base to help students innovate and start a business.

2.2. Independent design that echoes the surrounding environment

Students from the Jingdezhen Ceramic Institute in Jiangxi took their work to the creative market for sale; the Parsons School of Design in New York required students to interact with passers-by on the street during design; students from China University of Geosciences (Wuhan) collaborated with surrounding shops to conduct Jewelry design; teachers and students of Rhode Island College in the United States will sell their designs in the surrounding shops and so on. These are all using the surrounding business environment, combined with their own professional features to complete innovation and entrepreneurship.

2.3. Product design using competition form

For example, the “Huanghe Cup”, a competition jointly organized by our school and the Yellow Crane Tower Group and other universities, and various other alliance enterprises and universities and research institutes jointly held various competitions.

2.4. Promotion of results based on new environments such as Internet+ and big data

Nanjing Art Institute Shangmei College established its own website to showcase students’ graduation designs. Students from the School of Textile and Apparel of Nan University will sell and promote their clothing on Taobao.

In order to strengthen the technology transfer of research results of universities and research institutions, all localities have established their own cooperation platform for industry, university and research. In addition to the physical center, the online platform for industry, university and research also plays a key role in promoting and connecting.

3. Research content

3.1. Overview of the research content

In order to help college students complete their design works’ transformation and entrepreneurship of innovative achievements, build an efficient platform for communication, learning and work, and open up the communication channels between campus talents, campus teams and enterprises, so that more campus talents and talents can resonate. Let students work with each other to create teams and join teams. Let more campus talents and teams join the enterprise, let more enterprises go deep into the campus to support and create teams, establish long-term cooperation and understanding with campus talents and teams, help college students achieve innovative design and independent design, help enterprises get more business opportunity.

3.2. Innovations in research

Link students and use the power of the team to complete innovation and entrepreneurship. Industrial design students can work with other professional students to complete their innovative designs. Moreover, this can be done not only across disciplines, but also across schools and geographies, using current information and technological advantages to accomplish this collaboration.

The Department of Industrial Design of Huazhong University of Science and Technology has strong faculty, scientific research conditions. Huazhong University of Science and Technology has a good atmosphere of innovation and entrepreneurship, providing policy, economic and other aspects of help for entrepreneurial students. The business incubator of Huazhong University of Science and
Technology and the Industrial Technology Research Institute established in cooperation with the government also provided rich research materials for this study.

4. Introduction to research results - PFI platform
PFI is the abbreviation of “Platform For Innovation”. It is tentatively used to convey the core concept of this platform. It may be changed after the platform is launched.

4.1. User Analysis

4.1.1. Students
From the perspective of students, it provides students with a platform to participate in team and enterprise practice in schools, improve the overall quality of college students, cultivate project experience, and enhance the competitiveness of graduate job search: 1. Upload your own innovative design, innovative ideas and resume information to showcase your innovations and personal abilities and strengths to campus teams and companies. 2. Search for campus talents, campus teams and companies that you are interested in, and add them as friends to provide friend information push function. 3. Search for university campus competition information and lecture information in real time. 4. Find a part-time job and improve your ability through practice. 5. Download beautiful resume templates and a variety of contract templates.

4.1.2. Team
From a team perspective, it is convenient for the team to promote self-branding on campus. Provide a talent search platform for the school team, reduce team costs and stimulate the vitality of the school team: 1. Upload team resume information, campus talents and companies to showcase team characteristics and activities. 2. It is convenient for the campus team to search for talents in the school and recruit new personnel. 3. Facilitate cooperation and communication between campus teams and enterprises.

4.1.3. Enterprise
From the perspective of the enterprise, it is convenient for enterprises to enhance the influence of brand promotion in colleges and universities, provide a fast talent search platform for enterprises, assist enterprises to tap talents of potential colleges, and better connect talent resources in schools. Provide docking enterprise commissioning services to help enterprises develop targeted talents in the school: 1. Upload the resume information of the company, show the enterprise to the campus talents and teams, carry out brand promotion, and expand the campus market. 2. The company goes deep into the campus to support and create teams to absorb more campus talents. 3. Enterprises provide talent recruitment channels to find better and more suitable talents.

4.2. Product description

4.2.1. Platform function partition
4.2.2. Platform function flow chart

Figure 1. Platform function partition.

Figure 2. Platform function flow chart.
4.2.3 Platform effect display

Figure 3. Platform effect display.

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