

Original Paper

The Effectiveness of Innovation and Entrepreneurship Education in China

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Abstract

Purpose—The purpose of this paper is to trace the development of innovation and entrepreneurship education in China, and to evaluate its effectiveness and limitations.

Design/methodology/approach—Primary data are collected to reveal students' perceptions of the effectiveness of the innovation and entrepreneurship teaching and their knowledge about innovation and entrepreneurship.

Findings—The results show that innovation and entrepreneurship education in China is not matching students' skill expectations with skill acquisition. The findings also indicate that students have a low assessment of their ability to innovate.

Research limitations/implications—The paper only concerns students' perceptions towards the effectiveness of innovation education. Results from this paper are limited in terms of their ability to demonstrate "actual" outcomes of innovation education.

Practical implications—The paper provides an important exploratory analysis of the state of innovation education in China to enable further research to be taken in the area of innovation and entrepreneurship education. The findings provide valuable insight on effective teaching methodologies in the area of innovation and entrepreneurship education.

Originality/value—The paper provide a basis to improve the effectiveness of innovation and entrepreneurship education in China.

Keywords

innovation and entrepreneurship education, skills, China

1. Introduction

Entrepreneurship has become important driving force to the successful innovation and economic development of the countries in the world and also a symbol of one country's economic vitality and core competitiveness. On May 13, 2015, The General Office of the State Council issued and put forward the opinions on deepening the Reform of Innovation and Entrepreneurship Education in Institutions of Higher Learning. The strategic goal of the development of innovation and entrepreneurship education in colleges and universities in China by 2020 has also defined nine tasks to achieve the strategic goal. The state's emphasis on innovation and entrepreneurship education is not only a reflection of the new stage of higher education reform and development, but also a reflection of China's economic transformation urgent need for creative talents.

Under such an opportunity, Innovation education in Chinese colleges and universities ushered in the peak stage of development. Innovation basic courses were gradually included. In the compulsory courses of undergraduate colleges and universities, more and more colleges and universities begin to set up substantive Innovation education teaching and management institutions and innovation education. Education is gradually integrated with the mode of talent training in colleges and universities, and the theoretical research on innovation education shows a rapid growth trend.

College students in their 20s are in the stage of rapid physical and mental development. Most of them have active thinking and strong thirst for knowledge. They are initially equipped with independent thinking, but their ability to find and solve problems needs to be improved. At this time, participating in innovative education can provide them with good preparation for the future work. Indeed, innovation is the soul of a nation's progress, the inexhaustible source of a country's prosperity and the deepest national endowment. Young people, especially undergraduate students are the most dynamic and creative group in society, and they should take the lead in innovation and creation. Young people must have the courage to innovate and create. On the other hand, Undergraduate students are products of universities. Upon graduation, they become the source of manpower for developing the country's economy. In the era of powerful science and technology, cultivating students' innovative quality is one of the core goals of university education.

Even, colleges and universities innovation and entrepreneurship education is becoming more of a "business incubator" for future entrepreneurship. Undergraduate students are also the future mainstream of labor markets, employers are now paying more and more attention to employees' initiative, risk-taking spirit, pioneering spirit, independent working ability, technical ability, social ability and management ability, as well as professional achievement.

The exploratory nature of this research not only provides a platform for further research in the field of innovative education, but also provides valuable insights into innovative education for universities in China and even in other countries, the study is divided into five parts. The next section explores what innovation and entrepreneurship education is, then discuss the research methodology and highlights is related to the nature of the survey tools and data sets. In the following part, the research results are

analyzed in detail and the key research are discussed, which are related to the effectiveness of innovation and entrepreneurship education and the understanding of innovation among Chinese undergraduated students, while the last section concludes the study.

2. A Review on Innovation and Entrepreneurship Education

Schumpeter (1911) defined entrepreneurship as a person who breaks the existing economic order, creates and benefits from new structures by introducing new products and services, or by creating new organizational forms, or by developing new raw materials. Hamilton and Harper (1994), argued that entrepreneurs are people who take certain risks in order to take advantage of inventions.

Thompson (1999) thought entrepreneurs are people who can identify opportunities and take advantage of new business opportunities. There appears to be reasonable consensus that entrepreneurs are highly innovative people who can make a significant contribution to the economy and entrepreneurs are those who have a unique intuition, mindset, inspiration or vision, the ability, willingness and ability to conceptualize ideas and implement a business plans, and see change as an opportunity to create value. In fact, there are fewer entrepreneurial people in the population. But in China recently, the employment situation of college students is very severe, which also requires college students to have more ways to find jobs. More than a decade, Chinese universities set off a wave of innovation and entrepreneurship education.

Entrepreneurship education, broadly speaking, seeks to cultivate pioneering individuals. There is a close relationship between one nation's development of economy and the level and type of entrepreneurial venture (Jun, 2007). However, the success rate of Chinese college students in starting their own business is very low. Even some researchers argued that the key to becoming an entrepreneur is personality, an innate trait that can not be trained. Therefore, it is impossible to teach people to be entrepreneurs.

Innovation and entrepreneurship education needs a different teaching pedagogy in which innovation education is linked to work-related learning (Dwerryhouse, 2001), experiential learning (Kolb, 1984), action-learning (Smith, 2001) and entrepreneurial training (Gibb, 1999). Just as Kirby (2002) emphasised that innovation and entrepreneurial education is different to "traditional" management studies as the latter may impede the development of the necessary entrepreneurial quality and skills.

Entrepreneurship was first taught at Harvard Business School in 1947, entrepreneurship has been taught in colleges and universities around the world. The first reason is that colleges and universities hope to open exhibition entrepreneurship education cultivates students' knowledge, skills and understanding of entrepreneurship with the right attitude, maybe more students can start their own businesses after graduation and create jobs, thereby better fulfilling their responsibility for social and economic development. There are still many theoretical and practical challenges on whether innovation and entrepreneurship education has really achieved the desired effect and how to evaluate the effect of innovation entrepreneurship education. Menzies, T. and Paradi, J. (2003) looked career path, business

start-ups, ownership, performance and satisfaction with their entrepreneurship education are examined as effectiveness of entrepreneurship education. Cheng, M. Y. (2009) indicated the entrepreneurial education programmes conducted in Malaysia fail to create an impact to influence students to take up entrepreneurial challenges. In India, most of the entrepreneurship that has taken place tends to be born out of necessity than opportunity (Koster & Rai, 2008). From the findings above, the key to becoming an entrepreneur is personality, an innate trait that can not be trained. Therefore, it is impossible to teach people to be entrepreneurs.

In contrast, previous studies have shown that Innovation education does play an important role in fostering entrepreneurship among students (Ronstadt, 1987; Katz, 2003; Solomon et al., 2002; Robinson & Hayes, 1991; Sexton & Upton, 1984). Souitaris et al. (2007) concluded that an effective entrepreneurship programme was defined as one which is able to influence entrepreneurial intentions.

Kolvereid and Moen (1997) noted that students who took entrepreneurship courses were more likely than other students to face the challenges of starting a business and were more interested in starting a business. Webb et al. (1982) argued that students who participated in an entrepreneurship programme were more likely to start their own business than other students who did not participate in an entrepreneurship programme. Shrivastava, U., Acharya, S. R. (2020) focused on disadvantaged students in their final year of graduation. They found willingness of disadvantaged students to study entrepreneurship as a vocational course is highly driven by their family background followed by self-efficacy and need for achievement. The results further strengthen the theory of planned behavior and has implications for educators of entrepreneurship and a possibility of a widening of entrepreneurship education in disadvantaged community.

Ibrahim and Soufani (2002) believed Innovation Education plays a critical role in identifying and shaping the characteristics of entrepreneurs. Other studies have pointed out that Innovation Education, especially education that provides technological training, is crucial to enhance entrepreneurs' innovation skills in an increasingly challenging environment (Clarke, 1990; Menzies & Paradi, 2003). Creativity is the foundation of entrepreneurship, David Tanner (1992) pointed out creativity is not as vague as some people think, and even those who do not think of themselves as creative can be educated and applied in everyday innovation.

Colleges and universities, as the main battleground of talent cultivation, are the important support for the development of national innovative economy. Colleges and universities should combine their disciplinary advantages and talents training advantages to continuously innovate the upgraded version of education, running through the whole process of cultivating talents in high-level innovative and pioneering education to improve the quality of talents cultivation. Zhejiang Gongshang University, like other comprehensive universities in China, has launched innovation and entrepreneurship education since 2014, there are also entrepreneurship courses for some students who wish to start their own business, such as entrepreneurship practice, visiting entrepreneurs, and taking part in entrepreneurship competitions, as well as entrepreneurship courses for all undergraduate students, the main purpose is to

carry out entrepreneurial education activities by means of laboratory simulation which simulates the operation of market. The main objective of this paper is to evaluate the current situation and effectiveness of Zhejiang Gongshang University as a representative of innovation and entrepreneurship education in China.

3. Methodology

The sample consists of 209 Undergraduate Students and 35 post Undergraduate Students (110 females and 99 males) between 19 and 21 years (mean = 20.34 and standard deviation = 0.84). Participants administered a self-administered questionnaire on line that stated the purpose of the research. They answered questions regarding age, majors, gender and so on. The questionnaire responses also offered insight into students' knowledge of entrepreneurship. All participants spoke Chinese as their first language and were recruited from Zhejiang Gongshang University. Some of them served as a leader in student union (20%, $n = 41$). The distribution of respondents in terms of their majors and specialisations is business and management, art, computer science, information technology, finance, economics, and signals a vocational predisposition towards following entrepreneurship activities.

Researchers at Zhejiang Gongshang University developed a on-line survey to examine the current state of innovation and entrepreneurship education in China and to evaluate the extent and breadth of innovation and entrepreneurship education methods and course offerings during the 2019-2022 academic year.

4. Findings and Discussion

4.1 Demographic Information

Of the 209 respondents selected from Zhejiang Gongshang universities, five departments in the university, 9.4 percent are currently pursuing their studies at master business and administration degree level, while the remainder are undergraduate students. Figure 1 shows the distribution of respondents in terms of their majors and specialisations. The dominant major/specialisation is that of business and management and signals a vocational predisposition towards following innovation and entrepreneurial activities.

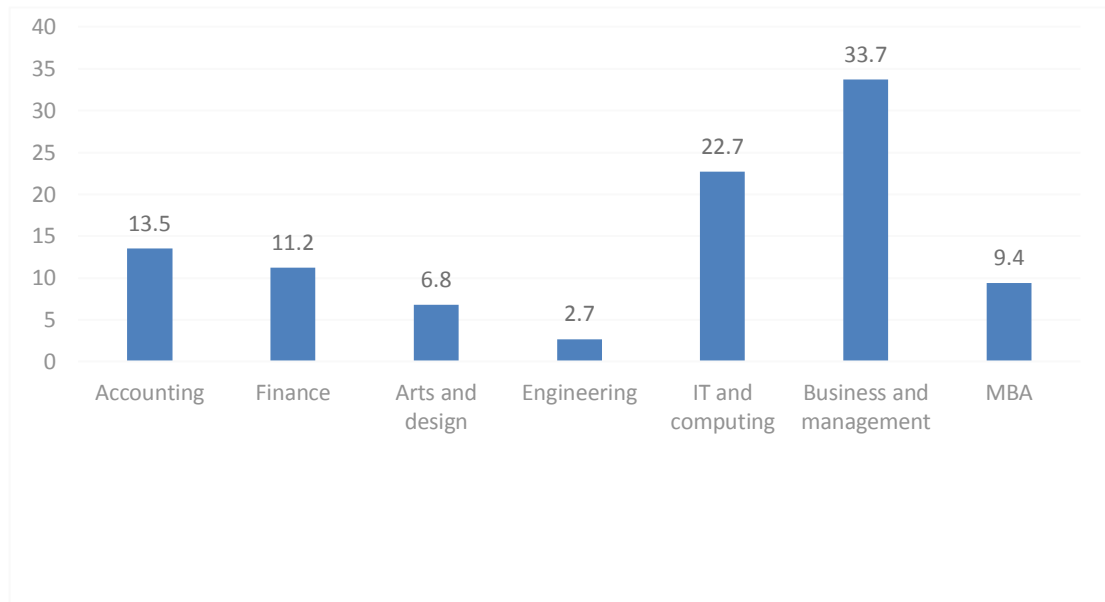


Figure 1. Major or Specialisation of the Sample

A total of 90.6 per cent of the respondents are full-time undergraduate students while only 9.4 per cent are part-time students, MBA students. This indicates that a Minority of the respondents are currently employed or involved in a full-time occupation. A total of 96.3 per cent of the respondents said they had no experience of running their own business. For those with full-time working experience, 39.9 per cent worked for between two and three years, 21.8 per cent worked between three and four years, 24.6 per cent worked between four and five years, and 13.7 per cent worked more than five years. The respondents in the sample had very little or no prior exposure to work or entrepreneurship activities. The sample thus enables us to examine the effectiveness of formal innovation and entrepreneurship education conducted in the selected higher education institutions as these respondents had very little knowledge of entrepreneurship prior to taking entrepreneurship courses in these institutions.

4.2 Effectiveness of Innovation and Entrepreneurship Education in China

We surveyed students' evaluations of the entrepreneurship program, as shown in Figure 2, overall 34.5 per cent of the respondents said that the innovation and entrepreneurship programmes conducted were excellent, 44.3 per cent considered them as good, 17.7 per cent said the programmes were fair, and 3.5 per cent said poor.

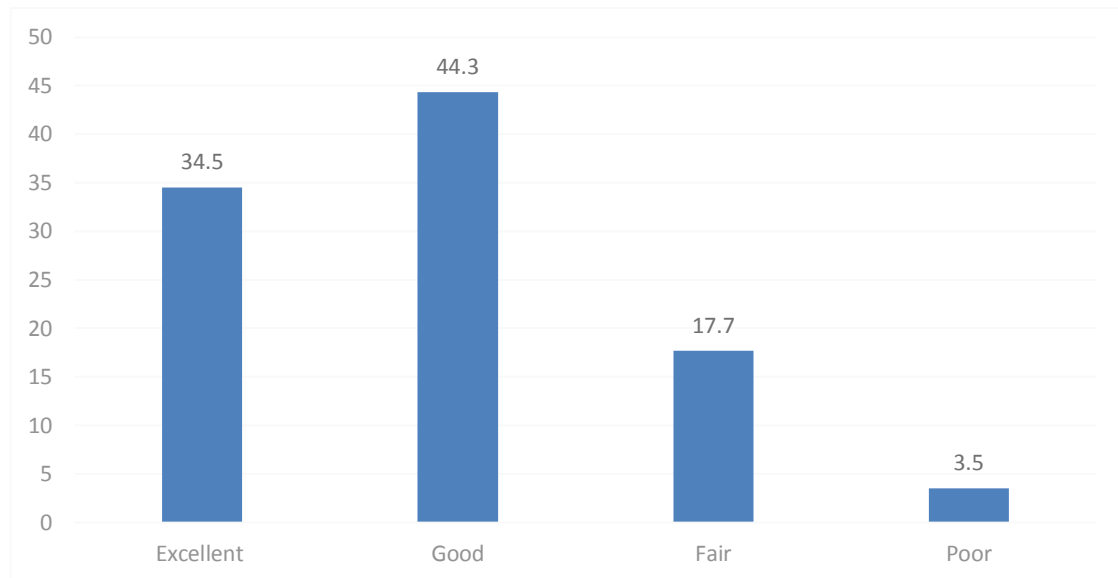


Figure 2. Students' Evaluations of the Entrepreneurship Program

Ask the students further if the entrepreneurship program has boosted their willingness to start a business. There are very few students answered “yes”. It seems to students think good of the innovation and entrepreneurship course, but why did not they be motivated to start a business? Students generally agreed that the course had broadened their horizons, that the content was fascinating and that they had learned a lot about innovation and entrepreneurship. However, they feel that starting a company is not enough to master entrepreneurial knowledge. They feel that they also need a sense of adventure, an accurate forecast of market demand, and so on, which they think they can not possess. Moreover, this kind of game type curriculum also is impossible to cultivate this kind of quality truly.

The negative sentiment regarding the entrepreneurship courses among students centered around comments such as: lecturers lack necessary skills and experience to teach the subject; a focus that was too exam oriented; a narrow concentration on entrepreneurship theory; and the simulation market does not agree with the practice.

Figure 3 shows the various entrepreneurship teaching methods used by the entrepreneurship college in Zhejiang Gongshang University, but the percentage of students who have access to these teaching methods is not very high, and some do not enroll themselves to study at the college, some did not have the opportunity to study because of the limited number of places. For those students who do not attend entrepreneurship colleges, there are really limited ways to learn about entrepreneurship.

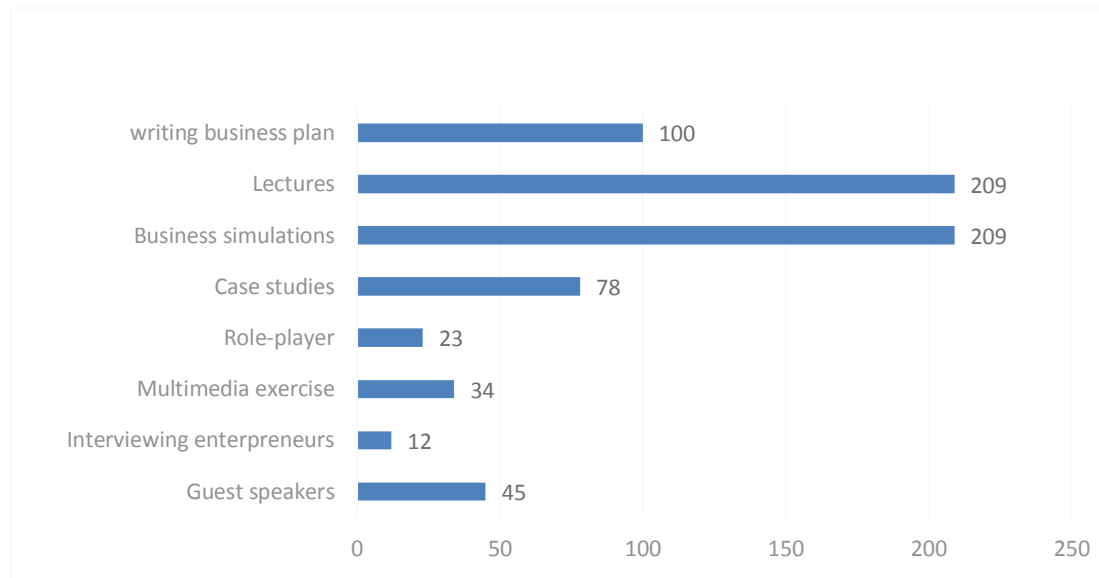


Figure 3. Teaching Methods in Entrepreneurship Courses

Note. Students could select multiple responses

Based on respondents' feedback, the most commonly used methods/modes of delivery in teaching entrepreneurship in the selected departments are (84.4 per cent) are lectures and business simulations. Less traditional, but more interactive methods, such as case studies, invited guest speakers and interaction with successful entrepreneurs were much less employed for majority undergraduate students.

Respondents were pessimistic about whether they thought they had entrepreneurial qualities, with the vast majority saying they lacked entrepreneurial qualities. They think that the entrepreneurial spirit of adventure, team motivation and other qualities, they lack, they do not think that after entrepreneurship course to learn, can obtain entrepreneurial ability. This belief may lead to the view that teaching people to be entrepreneurial not a waste of time, but it is unteachable to be entrepreneurial.

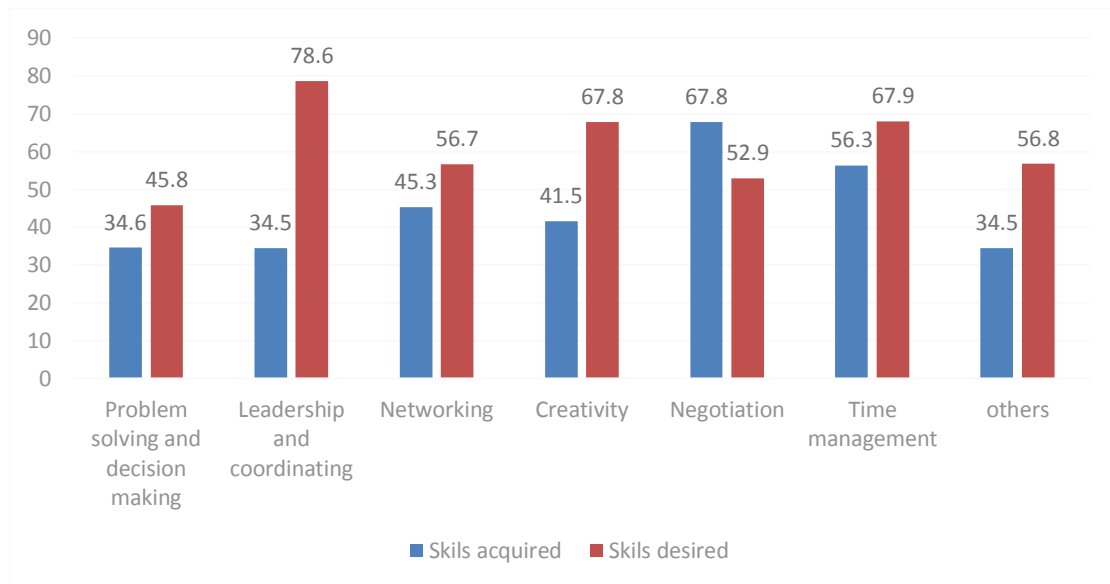


Figure 4. Skills Acquired and Required

Students were also asked to indicate the skills that they desired to learn from their courses as well as the skills acquired. Figure 4 shows these two lists. On top of the list of desired skills are “Leadership and coordinating”, “Time management” and “Creativity”. An examination of the differentials between skills desired and acquired suggests that educational institutions still have some way to go in satisfying their students’ aspirations in “Leadership and coordinating” and “Creativity”.

When asked about their most preferred format of training to improve their business skills, 27.7 per cent of the respondents preferred the format of one-to-one time with an instructor or business trainer. This indicated that students prefer a teaching format that is more personalised and individualistic. This preference surfaces elsewhere with 26.3 per cent of the respondents preferring courses to be conducted in short seminars format, 25.7 per cent preferring traditional classroom courses and only 19 per cent willing to go for online courses using internet. The above analysis shows there is a misalignment between students’ expectations and what is being delivered and that students have strong preferences about mode of delivery. Failure to factor in this information can lead to students’ dissatisfaction with the entrepreneurship programme and a waste of scarce resources. However, when we asked if you liked the lab virtual entrepreneurship courses currently offered in schools, the vast majority of the answers were yes.

Because entrepreneurship education is also related to employment, we also asked students whether entrepreneurship education programs promote and help your future employment. The results were also disappointing, with most students saying there was no explicit help.

After analysis, we believe that this is the result of the separation of entrepreneurship education from the education system for basic subjects. Every school basically has student organizations related to employment and entrepreneurship. Students who join these organizations because they are engaged in

related work in the organizations, they unconsciously cultivate their entrepreneurial consciousness and make themselves have entrepreneurial qualities. For this part of the students, entrepreneurial education in schools is very effective.

However, as far as the students outside this circle are concerned, few students took the initiative to pay attention to the entrepreneurial activities and policies organized by the university, except for those who had determined their goals and wanted to start a business, the students who set out on their own had almost no real exposure to the entrepreneurial training offered by the school. The separation of Professional Knowledge Education and entrepreneurship education leads to the burst of innovative spirit and the lack of a strong foundation for the cultivation of entrepreneurs' quality, which leads many students to have more passion to start their own business and less professional knowledge. At the same time, this kind of practical education bears the mark of elitism deeply. What we pay attention to is the dazzling achievements of a few proud people standing in the middle of the stage.

When asked whether they would like to start a business if they have the skills and knowledge to do so, we found that many students are still reluctant to start a business for fear of failure.

4.3 Entrepreneurial Knowledge among Students

Though more than 77 per cent of the respondents claimed that they know what entrepreneurship is, there is still a significant number of respondents (23 per cent) who expressed lack of knowledge about entrepreneurship, despite the fact that entrepreneurship programmes have been operating in Zhejiang Gongshang University since the 2014. The students in the survey said they knew what a startup was and roughly what it was supposed to do, but needed knowledge of economics, law, equity, products, leadership skills, etc., they don't really have it all.

209 self-reported understanding the meaning of the word "Entrepreneurship" they use their own understanding of the different answers ranging from: how to start a new business (45.8 per cent), to business management (35.8 per cent) and risk management (8.5 per cent). Obviously, the findings reveal that the student has the quite accurate cognition to the enterprise education significance and the goal.

It is important to note that there is still a long way to go between knowing something about entrepreneurship and actually being willing or able to start a business.

The goals of entrepreneurship education are multiple, but most researchers believe that there are two main goals: one is to influence students' attitude, behavior, values and willingness to start a business. However, there are many constraints to starting a business. It is also important for entrepreneurship education to eliminate students' fear of entrepreneurial failure. Of course, it is inappropriate to evaluate the effect of entrepreneurship education just by "establishing new enterprises". China's entrepreneurship education should take "effectively improving students' problem ability, leadership, creativity and so on" as the main goal.

5. Discussion and Conclusions

With the help of entrepreneurship education, it can make up for entrepreneurs' inexperience and develop entrepreneurial skills systematically. Furthermore, it essentially seek to cultivate the college students' entrepreneurship awareness and spirit. This study provides an important exploratory analysis of the state of entrepreneurship education in China. The survey results show that innovation and entrepreneurship education in China is not efficient in matching students' skill expectations with their skill acquisition. Higher Education Institutions therefore need to review existing curricula and design more appropriate curricula and adopt more diversified teaching methods.

We found that many students are still reluctant to start a business for fear that it will fail. In fact, the state has not only provided small loans for college students to start their own businesses, but has also introduced many more perfect follow-up supervision and protection policies, schools need to integrate these policies with their own safeguards to reach out to students, assess the feasibility of students' entrepreneurial ideas, and register in a register viable entrepreneurial projects with depth and technology, by the entrepreneurial model and business management personnel one by one, for professional guidance and security measures to solve students' worries.

It is important to cultivate entrepreneurial quality. Entrepreneurship education in universities also needs to teach college students how to overcome the fear of entrepreneurial failure, that is, to improve the spirit of adventure.

It is uncertain whether entrepreneurial skills can really be taught. Cultivate the college students' entrepreneurship spirit is difficult. However, we should not deny the significance of innovation and entrepreneurship education, more importantly, how to orientate the aim of innovation and entrepreneurship education. We should recognize that it is essential that innovative and entrepreneurship education give students some knowledge about innovative & entrepreneurship and that they will be better able to fulfill their social responsibilities if they start up a company in the future, the purpose of innovation and entrepreneurship should not only be seen as increasing the proportion of students starting businesses. Researchers looked career path, business start-ups, ownership, performance and satisfaction with their entrepreneurship education are examined as effectiveness of entrepreneurship education. That is right, of course. However, whether students become more aware of innovative thinking, whether they have divergent thinking, and whether they improve their problem-solving ability should be used as a measure of the effectiveness of innovation and entrepreneurship education.

Education is not an isolated thing, especially entrepreneurial education, is not blindly remember some knowledge that education has an effect. Create innovation atmosphere and raise innovation awareness. Students should take the initiative to improve their innovation consciously by strengthening the study and knowledge of innovation, applying innovative technique combined with practical and professional knowledge, to apply innovative thinking to solving professional problems, including mastering

innovative tools such as Six Thinking Hats, thus they can be gradually created the innovative atmosphere and the innovation awareness could be enhanced.

The government, especially the ministry of education and the education providers should take seriously into this aspect and consider revising the existing education system and process. Unless some action and changes are taken to improve the current education system to impart essential innovative and entrepreneurial knowledge and skills, the country may struggle to meet the upcoming new challenges brought by the ever changing political, economic, social and technological environment in today's global economy.

Furthermore, it is vital to the paid employees as well, because employers are attaching more and more importance to the initiative, adventure, entrepreneurship, ability to work independently, technical, social and management skills of the employees besides their career achievements. So starting a business is not the only goal of innovation and entrepreneurship education.

The paper has a number of limitations. The sample drawn from the population are limited to the Zhejiang Gongshang University, while the number of survey samples, conducted from each department is still not large enough, so we will give detailed analysis requires further investigation, only then we can come up with more meaningful suggestions about innovation education. This is the shortcoming of the paper and the direction we will work towards in the future as well.

Secondly, future research can provide additional information and extensions to these results. For example, more information is needed on the mechanisms through which personality dimensions into effectiveness of innovation and entrepreneurship education. How to evaluate the effectiveness of innovation and entrepreneurship education is also a problem worthy of further discussion.

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