

# The Dilemma and Countermeasures of Innovation and Entrepreneurship Education in Colleges and Universities Against the COVID-19 Epidemic Situation

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## ABSTRACT

The innovation and entrepreneurship education in colleges and universities is an important supplement to higher education and is a strong support of national strategy. This paper analyses the dilemma encountered by the work of innovation and entrepreneurship education in colleges and universities under the COVID-19 epidemic situation. It puts forward that in order to effectively promote the work of innovation and entrepreneurship education in colleges and universities, the competent departments of colleges and universities should firstly pay attention to the work and actively promote it; secondly, as the foothold of the promotion of entrepreneurship and innovation work, the first-line entrepreneurship and innovation teachers in colleges and universities should make use of the characteristics of subject competition to effectively promote the students to participate in the entrepreneurship and innovation activities and flexibly make progress plan to avoid the physical equipment and site problems, enhance the communication between teachers and students, and realize the effective entrepreneurship and innovation education process in the home teaching environment under the epidemic situation.

**Keywords:** COVID-19, entrepreneurship and innovation education, analysis of dilemma, countermeasures

## I. INTRODUCTION

Over more than half of the winter vacation in 2020, the COVID-19 epidemic situation in China is still in a critical stage. Thus, the Ministry of Education put forward "suspension of courses, without suspension of teaching and learning". [1] Many higher universities also continuously carry out extensive teacher and student training and prepare for the online teaching. The traditional class teaching can be transferred to the network through MOOC, SPOC and other online teaching methods and by adopting live online class and network platform Q&A after class. With multiple network teaching modes, the requirements of normal teaching plan in colleges and universities can be met basically. As for experimental courses, the online experimental course can be carried out by adopting online experimental environment. For example, the cloud desktop experiment platform of Course Grading can realize online education of computer experiment course through providing virtual environment. [2] However, those experimental courses, physical education course and so on which need a lot of physical equipment or sites can only be carried out after teachers and students return to school.

The entrepreneurship and innovation education work in colleges and universities is an important part of

the higher education and strengthening entrepreneurship and innovation education is an important support for national industrial upgrading and made in China 2025. [3] The Ministry of Education issued "innovation training plan for college students" and "entrepreneurship training plan for college students" successively in order to improve the entrepreneurship and innovation education level in colleges and universities. [4][5][6] At the same time, various kinds of entrepreneurship and innovation competitions among college students are the touchstone to check the entrepreneurship and innovation education in colleges and universities. Since 2017, the China Association of Higher Education published the ranking list of the national college competitions for three consecutive years, and the higher universities in the whole nation also paid much attention to the competitions included in the ranking list and increased investment in human, material and financial resources year by year. [7] And the entrepreneurship and innovation education activities in colleges and universities are also developed around those competitions and training programs at all levels. Under the COVID-19 epidemic situation, the entrepreneurship and innovation education activities in colleges and universities will also meet encounter some new difficulties.

## **II. THE DILEMMA OF ENTREPRENEURSHIP AND INNOVATION EDUCATION UNDER THE EPIDEMIC SITUATION**

Most of the entrepreneurship and innovation education activities are carried out through mutual interaction between teachers and students, which seems to encounter fewer problems under the epidemic situation than that of online teaching. That's because most of the entrepreneurship and innovation education activities among teachers and students after class are completed through remote collaboration. However, this is not the case. Under the influence of the national environment and the strong promotion of school educational administration management, students' participation and teachers' implementation of online teaching can also be carried out normally. But the online entrepreneurship and innovation education activities just gain low participation of teachers and students who lack of enthusiasm and achieve poor overall effect due to various difficulties.

## **III. ANALYSIS OF THE CAUSES OF THE DILEMMA**

### *A. Developed social media attracts a lot of attention*

During the outbreak of the epidemic situation, all kinds of information are quickly forwarded through various social media and video sharing platforms, so as to make everyone receive a lot of information about the epidemic every day. Especially the operation mechanism of video sharing platform allows the video producer to continuously seek for various kinds of social focuses for reprocessing to gain eyeballs and profits. The irregular incentive mechanism of recommendation mechanism of video sharing platform (through continuously swiping the video, reward the one you are most interested in) is easy to make the audience addicted and consume a lot of time. And the video sharing of the social media further strengthens the process. Thus, teachers and students in colleges and universities also spend much energy on video sharing software and social software.

### *B. Family environment and many interference factors*

The family environment is just suitable for living. When teachers and students carry out teaching activities at home, it will be affected more or less by family members. Especially under the circumstances that all family members are required to stay at home during the epidemic period, the mutual interference is more inevitable. With the orderly resumption of work, some family members leave home to work during the day, which reduces the mutual interference. The same as the universities, the middle schools have to carry out online teaching. As a result, young and middle-aged teachers

will be affected due to their children's online teaching, let alone the infants at home.

### *C. No physical environment and no hands-on operation*

The entrepreneurship and innovation education in colleges and universities requires different physical environment because of different disciplines. Mechanical specialty needs to use large machining tools, such as, CNC machine tools, lathes, etc.; Biology specialty needs to use a variety of biological laboratories and experimental materials, such as, various incubators, centrifuges, electrophoresis machines, ultra clean worktables, and reagent test paper, etc.; Electronic specialty needs all kinds of development hardware devices and processing equipment, such as oscilloscope, circuit board engraving machine; product design specialty needs 3D printer. It is difficult to have such kind of equipment and material, which make teachers and students feel inadequate when carrying out entrepreneurship and innovation activities.

### *D. No hard requirements and lack of motivation*

The Ministry of Education requires to "suspension of class, without suspension of learning". The school's academic affairs office and students' Office actively completed the research work of teachers and students' online classes and solved various kinds of problems for students with difficulties in online class. At the same time, they started the all staff's training work of online teaching half a month in advance. Teachers and students have the same understanding of online classes as the face-to-face classes and they will manage to solve the problems in online classes. School departments at all level basically exerted all efforts to guarantee all staff to have online classes, so that they have no time to care about the entrepreneurship and innovation education work. There is no way to talk about hard requirements. As a result, both teachers and students have insufficient understanding of entrepreneurship and innovation education, and also have poor motivation.

### *E. Lack of meeting and interaction causes poor effect of remote communication*

Interaction after class, discussion and communication are effective ways to promote students' entrepreneurship and innovation activities. However, the team discussion through remote video conference is not as efficient as face-to-face discussion. And the guiding intentions conveyed by teachers through remote video meeting also encountered a poor effect compared with the face-to-face communication.

Therefore, because of many kinds of reasons, the entrepreneurship and innovation activities in colleges

and universities almost stagnated under the epidemic situation. Despite some colleges and universities' competent department of entrepreneurship and innovation activities also promoted the online entrepreneurship and innovation education, and even invited top domestic entrepreneurship tutors to give lectures, which also have a low participation and achieve poor promotion effect.

#### **IV. SOLUTIONS**

Students' practice is an important part of entrepreneurship and innovation education activities. In their own home environment, there are indeed many insurmountable difficulties, such as no experimental equipment, no site, etc., which shall not lead to the stagnation of the entrepreneurship and innovation education. The entrepreneurship and innovation education work shall be given a higher value and support from the competent departments in colleges and universities during the epidemic period. At the same time, teachers who participate in the entrepreneurship and innovation education activities shall have a certain cognitive change.

##### *A. Value and support from the competent department of entrepreneurship and innovation*

Under the epidemic situation, there are indeed many objective problems that cannot be solved in the entrepreneurship and innovation work. The competent departments shall work creatively, or it is hard to realize the full launch of the entrepreneurship and innovation work, which cause the stagnation of the entrepreneurship and innovation works. At the beginning of the home teaching, teachers need to spend much time in preparing online teaching, and they will adapt to the work in nearly one or two weeks. Thus, teachers have time and energy to carry out the entrepreneurship and innovation work. Students also can distract themselves from the epidemic through participation of entrepreneurship and innovation activities so as to avoid the psychological impact of epidemic information on students. Therefore, the promotion of the entrepreneurship and innovation activities during the epidemic period is feasible and beneficial.

##### *B. The front-line teachers of the entrepreneurship and innovation education are the foothold of entrepreneurship and innovation work*

Under the transfer of competent departments, the front-line teachers of the entrepreneurship and innovation education shall actively activate students' motivation to participate in entrepreneurship and innovation activities through various channels. The innovation and entrepreneurship activities of subject competition can effectively arouse students' desire to

win and the strong willingness to complete the competitions can also effectively distract them from the epidemic. To create a remote virtual team learning environment will further shields the external interference. Thus, the teachers of entrepreneurship and innovation education shall pay attention to the subject competitions and encourage students to participate actively through the time modes of various subject competitions, effectively mobilize students' subjective initiative and push students to overcome difficulties. In order to each this effect, the front-line entrepreneurship and innovation teachers shall keep communication with students who will participate in the competitions every day so as to grasp the progress and dynamics of students in real time. For example, in ACM competition, teachers can publish personal training rankings to activate the training motivation of students. At the same time, during the communication with students, the front-line entrepreneurship and innovation teachers have more advantages than their headmaster, who can guide students to make correct life plan in the professional development, keep calm in front of epidemic and let them know that improving them through the entrepreneurship and innovation activities is what the students can do best to fight against the epidemic.

##### *C. Flexible solution to physical conditions*

The physical equipment and site problems are insurmountable obstacles in the work of entrepreneurship and innovation. It is hard for them to purchase at home under the epidemic, and it is more impossible to buy the large equipment. However, the entrepreneurship and innovation works need to be continued, which requires teachers and students to creatively solve the problems. Whether the project process can be adjusted, whether the experimental environment can be simulated through software, and whether the design can be completed through software? Those tasks that can be finished in the home environment shall be arranged first, and those processing and experimental parts need to use physical equipment site shall be finally finished after returning school. Through completion of the progress plan by teachers and students together, most of the work can be finished by students in the home environment.

##### *D. Solving communication problems through multiple channels*

Poor communication effect is not the fundamental problem of entrepreneurship and innovation education under the epidemic situation, but can be solved creatively through human subjective initiative. Just like online teaching, teachers and students can use a variety of interactive teaching platforms to achieve a certain teaching effect. QQ voice, screen sharing, Tencent classroom and Ding Talk are also good team

communication and cooperation platforms. In the remote collaboration, the communication information transmitted by the computer and mobile phone is not as effective as face-to-face discussion, but one-to-one video communication can be used as an effective supplement to solve most problems. At the same time, it is suggested that the notice and information from teachers to students should be released in an one-to-one way, so as to ensure that each student receives the information effectively.

## V. CONCLUSION

Innovation and entrepreneurship education in colleges and universities is an important supplement to higher education and a strong support of national strategy. In order to effectively promote the work of innovation and entrepreneurship in colleges and universities, the competent departments of colleges and universities should pay enough attention to the work of entrepreneurship and innovation and actively promote it. As the foothold of the promotion of entrepreneurship and innovation, the front-line teachers of colleges and universities should make use of the characteristics of subject competition to effectively promote students' participation in entrepreneurship and innovation activities, flexibly formulate schedule to avoid physical equipment and site problems, strengthen the communication process between teachers and students, and realize the effective entrepreneurship and innovation education in home-based teaching environment under the epidemic situation.

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## References

- [1] Ministry of Education , "Ministry of Education: using Internet platform, 'no suspension of classes'," [online] Available: [http://www.moe.gov.cn/jyb\\_xwfb/gzdt\\_gzdt/s5987/202001/t20200129\\_416993.html](http://www.moe.gov.cn/jyb_xwfb/gzdt_gzdt/s5987/202001/t20200129_416993.html), 2020-01-29.
- [2] Zhengzhou Yunhai Technology Co., Ltd. Course Grade Computer professional integration platform, <http://eduxiji.net/cloudDesk.html>,2020-03-04.
- [3] Li Keqiang: solidly promote "mass entrepreneurship and innovation" and "made in China 2025" to drive the transformation and upgrading of economic development with innovation, [http://www.gov.cn/xinwen/2016-10/13/content\\_5118682.htm](http://www.gov.cn/xinwen/2016-10/13/content_5118682.htm), 2020-04-20.
- [4] Circular of the Ministry of education on printing and distributing the administrative measures for national innovation and entrepreneurship training plan for College Students. [http://www.moe.gov.cn/srcsite/A08/s5672/201907/t20190724\\_392132.html](http://www.moe.gov.cn/srcsite/A08/s5672/201907/t20190724_392132.html),2020-03-20.
- [5] J. D. Dong, Y. P. Zhang, J. Y. Xue, C. Z. Liu. Research on the compound management mode of the project process and goal of College Students' Entrepreneurship and innovation training plan. *Research and Exploration in Laboratory*, vol. 38, no. 04, pp: 184-187+196, 2019.
- [6] Y. Cai, X. Xiao. The construction of management mode of innovation and entrepreneurship training plan for College Students — Based on the perspective of project management. *China University Teaching*, vol. 2019, no. 2, pp:70-73, 2018.
- [7] G. D. Lu, L. Q. Chen, Q. M. He, H. Yan. Evaluation of subject competition in Colleges and Universities: ideas, methods and exploration. *China Higher Education Research*, vol. 2018, no. 2, pp: 63-68+74, 2018.