

Research on the Shaping Process of the Learners' Creativity in Entrepreneurship Education

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ABSTRACT: *This paper conducts two studies to explore the shaping process of learners' creativity in the practical activities of entrepreneurship education. Firstly, study 1 analyzes the key events in entrepreneurship course that affect learners' creativity with event system theory and puts forward the formation path of learners' creativity. Then, study 2 examines how entrepreneurship education influences learners' creativity with empirical research method further. Our results reveal that there are eighteen key events in entrepreneurship education that have an impact on learners' creativity from the individual level, team level, and teacher level. Key events identified affect learners' cognitive transformation from self-denial to self-affirmation in a series of entrepreneurial practice activities, and then realize the increase of creativity, which carries through the four stages of entrepreneurship, including entrepreneurial idea generation, entrepreneurial opportunity identification, entrepreneurial opportunity exploitation and entrepreneurial project formation. Besides, our findings of empirical research show that entrepreneurship education has a positive impact on university students' creativity indeed and self-efficacy mediates the relationship between entrepreneurship education and creativity. Meanwhile, entrepreneurship education has a stronger impact on students' self-efficacy when they are in higher atmosphere of team cooperation.*

KEYWORDS: *Entrepreneurial education; Creativity; Event system theory; Entrepreneurial self-efficacy; Team cooperation*

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I. INTRODUCTION

Entrepreneurship is a designed and purposeful act ((Bird, 1988; Curran & Stanworth, 1989; Katz & Gartner, 1988), which has drawn attention of many stakeholders, such as policy makers, scholars and students (Samwel, 2010). In recent years, there has been a rise in the number of university students in China, which leads the employment situation to be more and more severe. Therefore, China has encouraged mass entrepreneurship and innovation, which is believed to increase employment opportunities. More importantly, entrepreneurship not only helps more and more young people realize their life values, but also better meets the needs of steady growth during China's economic transition period. Changes in the social macro environment have enhanced people's awareness of innovation and entrepreneurship, making entrepreneurship education a general consensus in China's colleges and universities.

Entrepreneurship education has encountered rapid development in the past decades and attracted scholars' interest in the research, since Harvard Business School launched the first entrepreneurship education program in 1945. Liñán (2004) presented the definition of entrepreneurship education systematically and precisely, which stated that entrepreneurship education is the whole set education and training activities (within educational system or non-educational system) that attempt to foster participants' entrepreneurial intention or the factors influencing their entrepreneurial intention, such as knowledge and feasibility of the entrepreneurial activity. Besides, Curran and Stanworth (1989) believed that entrepreneurship education is a concept of aptitude, which is not aimed to make students to start up business in the future, but to cultivate students' innovative spirit, entrepreneurial awareness and entrepreneurial ability. Thus, entrepreneurship education focuses on the cultivation of students' self-directed learning and practical ability, and closely combines talent training with scientific research and social needs, changing the pedagogical model from paying attention to knowledge transfer during in traditional class to emphasizing the cultivation of ability and comprehensive quality, and effectively improving the quality of talent cultivation in colleges and universities (Curran & Stanworth, 1989).

Existing research on the impact of entrepreneurship education on entrepreneurial intention has been basically consistent, most of which reveal that entrepreneurship education could improve college students' entrepreneurial intention (Sánchez, 2013; Bae et al., 2004). However, the essence of entrepreneurship education is the process of putting entrepreneurial ideas into practice and cultivates students' entrepreneurial ability, which

requires not only action but also creativity to guide. Therefore, entrepreneurship education may play the role of “two birds with one stone”, increasing entrepreneurial intention but also creativity, which is ignored, though. In addition, current research on entrepreneurship education is conducted under the framework of theoretically oriented entrepreneurship courses mostly. Nevertheless, the purpose of entrepreneurship education is to train university students with entrepreneurship practice ability (Curran & Stanworth, 1989), thus, the train model of theory inculcation seems to be unable to meet the requirements of teaching. As a result, this study mainly focuses on the effect of entrepreneurship education on college students' creativity under the framework of practically oriented entrepreneurship courses.

II. LITERATURE REVIEW

2.1 Entrepreneurship education

Foreign scholars have conducted investigations on entrepreneurship education since 1970s. Due to differences of region and research focus, there has not been a consensus definition of entrepreneurship education in academic world. Entrepreneurship education can be divided into entrepreneurship education in colleges and universities and social entrepreneurship education according to different research backgrounds. Rideout and Gray (2013) defined entrepreneurship education in colleges and universities as college courses and extracurricular activities that train students on entrepreneurship management, strategy, innovation and venture capital development in the context of universities. Social entrepreneurship education is the general term for education and teaching activities related to social entrepreneurship. Social entrepreneurship is an innovative activity that creates social value and can occur in or between commercial organizations, non-profit organizations and public sectors (Austin et al., 2006). Moreover, it is also believed that entrepreneurship education, on the one hand, is to cultivate learners' ability to operate and manage enterprises, and on the other hand, it is more important to cultivate learners' innovative thinking, sense of responsibility and enterprise spirit (CEE, 2008; NCGE, 2009).

Despite of the difference on interpretation of entrepreneurship education among different scholars and institutions from different perspectives, they have reached a consensus that entrepreneurship education is increasing emphasis on cultivating people. Besides, the essence of entrepreneurship education is to educate people and cultivate all-round talents, rather than just train entrepreneurs.

2.2 Entrepreneurship education and creativity

Creativity involves identifying market opportunities to create new products or services or identifying new ways to carry out worthy tasks, which is an essential skill for successful entrepreneurs (Baron et al., 2004; Bird, 1988). Scholars have described entrepreneurship and innovative business behavior as a type of creative behavior for a long time (Whiting, 1988; Amabile, 1996), and entrepreneurship and innovative business behavior are often regarded as synonyms, thus, innovation is inextricably linked with entrepreneurship, which is also supported by other scholars. For example, Davidsson (2002) pointed out that a crucial part of starting a business is that there is enough freshness and novelty to influence the market process. Davis (2017) proposed that the innovation of entrepreneurial project could effectively improve the firm's financing performance based on the perspective of corporate performance.

Innovation behavior in the entrepreneurial link is ultimately human creativity behavior. As an important means of cultivating entrepreneurial talents, entrepreneurship education in universities tends to teach technical skills to learners, while neglecting the cultivation of creative thinking for learners (Zahra & Sapienza, 2006). In the recent studies on entrepreneurship education, a large number of investigators have started to focus on learners' creativity, but most of them only regard learners' creativity as an individual trait to investigate whether it has an impact on learners' entrepreneurial intention (Fatoki, 2010; Hamidi & Ewing, 2014; Nasiru, 2015), whose research results consistently indicate that creativity has a significant positive effect on learners' entrepreneurial intention.

However, Skogen and Sjøvoll (2010) proposed that entrepreneurship education could improve students' ability of teamwork and problem solving, during which process, their creativity can be fully stimulated. Berglund and Wennberg (2006) confirmed a positive correlation between entrepreneurship education and student creativity by investigating the students of business school and school of engineering. Thus, entrepreneurship education may play a role of shaping creativity of students. Meanwhile, how entrepreneurship education activities (integrating event system theory) affect learners' creativity, considering that creativity is carried through the whole process from entrepreneurial idea generation to project formation, which is problem that this paper will address.

2.3 Event system theory

Event system theory mainly explains the degree of the influence of event on the organization according to the mutual influence between system levels (Morgeson, 2015). An event contains interactions between

multiple entities, and the degree of impact of events on related entities depends on the event strength (an event's novelty, disruption, and criticality), event time (when an event occurs, and an event's duration) and event space (where an event originates, the distance between entities and events, and spreading range vertically and horizontally). Meanwhile, event strength, time and space will have an impact on different levels (individual, team and organization) in the organization.

The application field of event system theory is expanding continuously. Madhavan et al. (1998) employed event system theory to analyze the influence of industrial events on enterprise relationship within the industry. Morgeson (2006) investigated on leadership with event system theory. Bacharach and Bamberger (2007) studied the emotional problems of firefighters after 911. Thus, event system theory is not limited to the study of a certain discipline. Although the application range of event system theory is expanding, there is no research exploring the characteristics of key entrepreneurial activities in entrepreneurial practice and their impact on learners' creativity with event system theory, while traditional empirical research cannot investigate the dynamic process of entrepreneurial activities' impact on ability. Therefore, it is necessary and innovative to analyze the entrepreneurial practice process by using event system theory.

III. METHODOLOGY

This paper conducted two studies among undergraduate students, who had entrepreneurship education course spanning 10 weeks at a major Chinese business school during the 2017–2018 academic year.

In study 1, we are aimed to explore the formation path of learners' creativity in the process of entrepreneurial practice based on qualitative research. The research assistants asked students to recall the key events in the ten-week courses that they thought had a significant impact on their creativity in the end of the semester. Then, we employed event system theory to analyze the formation path of learners' creativity.

In study 2, we try to examine the formation path and structure of learners' creativity in entrepreneurial practice with empirical research considering that quantitative research method emphasize the rigorous logic compared with qualitative research, which could improve the abstraction and generalization of theory and provide more precise analysis. Thus, we investigate that how entrepreneurship education influences students' creativity", which supplements and embodies the conclusions in study 1.

3.1 Study 1

3.1.1 Sample and procedure

Compared with traditional entrepreneurship education in other universities in China, entrepreneurship education in our surveyed university not just imparts entrepreneurial theory knowledge, but also simulates a real entrepreneurial environment for students, allowing student to set up start-ups autonomously, and linking to external resources to promote the development of the project, which is truly learning by doing and consistent with our research topic.

The research assistants asked students to recall the key events in the ten-week courses that they thought had a significant impact on their creativity in the end of the semester, such as conflicts between the team members, criticism from teacher, questions from classmates, comments from entrepreneurs outside, self-denial, and research experience, and then describe the emotional state of the event, such as joy, anger, excitement, frustration as it occurred, afterthought like new thoughts and process and the goals before and after the event in the order in which it occurred. Then, we analyze the formation path of learners' creativity with event system theory.

3.1.2 Identification of key events

Reynolds et al. (2005) divided the entrepreneurial process into four stages, including entrepreneurial opportunity identification, opportunity exploitation, new venture growth and stable development. Coviello and Cox (2006) believe that it no longer belongs to the category of entrepreneurship research after the new enterprise enters the stable stage. Combining with the above two points of view, and in order to better track the whole process of entrepreneurship practice activities, this paper introduced the formation of preliminary ideas by learners into the entrepreneurial practice process, and divides entrepreneurial practice process into four stages, including entrepreneurial idea generation, entrepreneurial opportunity identification, entrepreneurial opportunity exploitation and entrepreneurial project formation based on the context of college entrepreneurship.

The data from interviews was coded and eighteen key events that have an impact on learners were identified in the consensus. The event strength was divided into three types, including "+++" strong; "++" medium; "+" weak, which depended on the frequency appeared in the interviews materials and the description involving the degree, such as "very", "especially", "quite", and "slightly" and so on. Based on spatial dispersion, event space contains "+++" within district; "++" within college; "+" within institute (displayed in table 1).

Table 1 Description of Key Events in Entrepreneurial Practice Process

Time	Event Code	Event type		Event Description	Event Strength			Event Space
		Active	Passive		Novelty	Criticality	Disruption	
Idea generation	1	√		Determine the direction: we thought hard and discussed the direction that we would work on. This was important for us.	++	+	+	+++
	2		√	Difference in opinion of the team: we had different opinion on the idea about this problem. I thought our target customers should be college students, but student thought it should be white-collar workers. We could not reach an agreement for a long time.	++	++	++	++
	3		√	Problems pointed out by teacher: our teacher said we didn't conduct enough market research.	+	++	+	+
	4		√	Project was questioned and challenged: our classmates asked us that how many customers did you think would come into your restaurant and get changed to eat? Was it a trouble for them?	+++	+++	+++	++
	5		√	Self-denial: after being questioned, I thought what we were doing worth nothing and maybe we would fail the exam.	++	+++	++	+++
Opportunity identification	6		√	Brainstorm with a team: our team members had brainstorming to think about the solution for the wicked problem.	+++	+++	++	++
	7	√		Analysis of wicked problem: we discussed the wicked problem more carefully later.	++	+++	++	+++
	8		√	Determine the new project: our group worked together to propose a new project after our last one was rejected.	+++	+++	++	++
	9	√		Teacher's guidance: our teacher proposed some improvement schemes for our plan, such as market positioning and	+	++	+	+

	10	√		customer stickiness. Self-affirmation: when our teacher and classmates supported our proposal and got results, we were self-affirming and more confident.	++	++	++	+++
Opportunity exploitation	11	√		Market research: we conducted market research as soon as the class was over and conducted market research eight times at least.	+	++	+	+
	12	√		Field visit: we visited the factory of manufacturing curtains for three times a week.	++	+	+	+
	13	√		Interview entrepreneurs: we went to the company to communicate with the entrepreneurs to get inspiration.	++	++	++	+
Project formation	14		√	Perfection of project: after two hours of discussion, some progress was made, at least in terms of the business model	+	++	++	++
	15	√		Seek business partners outside: we sought out vendors near the school actively and hoped that they would cooperate with us.	+	+	+	+
	16		√	Project completion: we had discussion over and over again to finish our final business plan.	++	+++	+++	++
	17		√	Teacher' recommendation: our teacher thought what we were doing was feasible and meaningful for current market and advised that we would continue our work even though the entrepreneurship education course was over.	+	+	+	+
	18	√		Self-fulfillment: when we finished presenting our business plan and got applause, we were relieved and fulfilling.	++	++	+	+++

(1) Entrepreneurial idea generation

In the first stage of entrepreneurial practice, learners build their own team and put forward projects or entirely new ideas that they are interested. Students have not yet formed comprehensive cognition of entrepreneurship in the stage of idea formation, in which stage, many of the ideas proposed do not capture the wicked problem of the market or they are questioned and rejected by teachers because of not considering the actual cost. At this moment, most students lose their initial curiosity and enthusiasm, and become confused and self-denying. At the beginning of the entrepreneurial team establishment, the top priority of the team members is to “break the ice”. Team members are unfamiliar with each other, therefore, there were many echoing voices within the team when they discuss, and most of the members are not willing to express their own views and

opinions, which lead to the low team efficiency in the initial stage.

(2) Entrepreneurial opportunity identification

After the “hit” in the initial stage, it becomes clear to students that can the project last long only implementing the idea to the real place. Therefore, a short period of negativity is followed by a highly integrated team. At this stage, the team will have brainstorming frequently, and new ideas will be constantly generated in the collision of opinions. Although there will be disagreements, this is a good argument, which can promote the efficiency of the team. Students will take the initiative to dig into the real wicked problem in the market instead of creating or insisting on unrealistic ideas. Meanwhile, they will not stop communicating with teachers until they guarantee that their project can indeed solve the wicked problem of the market and is feasible. At this stage, the project has been preliminarily formed, and individuals can realize the difficulty of starting a business and the affirmation to their own ability.

(3) Entrepreneurial opportunity exploitation

The next step in the entrepreneurial process is opportunity exploitation after determining the project. Students not just come up with a reasonable business plan, but more importantly, they will implement their business plan actually, and allow the “chief examiner”, market, to test the feasibility of the business plan, rather than engaging in idle theorizing. To put ideas into practice, linking resources is indispensable. Thus, students obtain information and resources through field visits, questionnaire survey, communicating with entrepreneurs and other ways, at which stage, the new ideas or thought they generate will be further improved and perfect their project. In the process of linking resources, students get feedback from many parties. For example, they truly feel the size of the market space and realize that the wicked problem they solve is exactly what customers expect but not satisfied. Therefore, they are more confident than that in the first stage and have a clearer development planning for the project, at which stage they will not have unrealistic ideas, but focus on how to implement their project step by step. At the team level, cooperation efficiency is also at its peak, when they analyze existing problems and improvement methods of the project carefully on the basis of the feedback from the market and entrepreneurs, and put forward many ideas focusing on only one problem, and examine the feasibility and shortcomings of each idea until the problem is solved.

(4) Entrepreneurial project formation

The final stage of the entrepreneurial practice process is the improvement and completion of the project. Each team will complete the final business plan, integrating the preparatory work at the early stage and the suggestions by teachers and classmates. At this stage, students will rethink the future planning and positioning of the project according to the results of the early practice and the guidance of teachers. After ten-week entrepreneurship education combining theory with practice, students have a more comprehensive cognition to the entrepreneurial process, where they experience the hard and fun of starting a business, and more importantly, entrepreneurship education enables students to integrate entrepreneurial thinking into their lives, be sensitive to find problems and bring feasible solutions, and have ability to execute it. Team members practice their cooperation ability when they work together to complete the project in this process. Meanwhile, they encourage each other again and again to overcome the difficulties together, which promotes the team members to change from not knowing each other in the initial stage and low team efficiency to the high degree of unity when the project is completed.

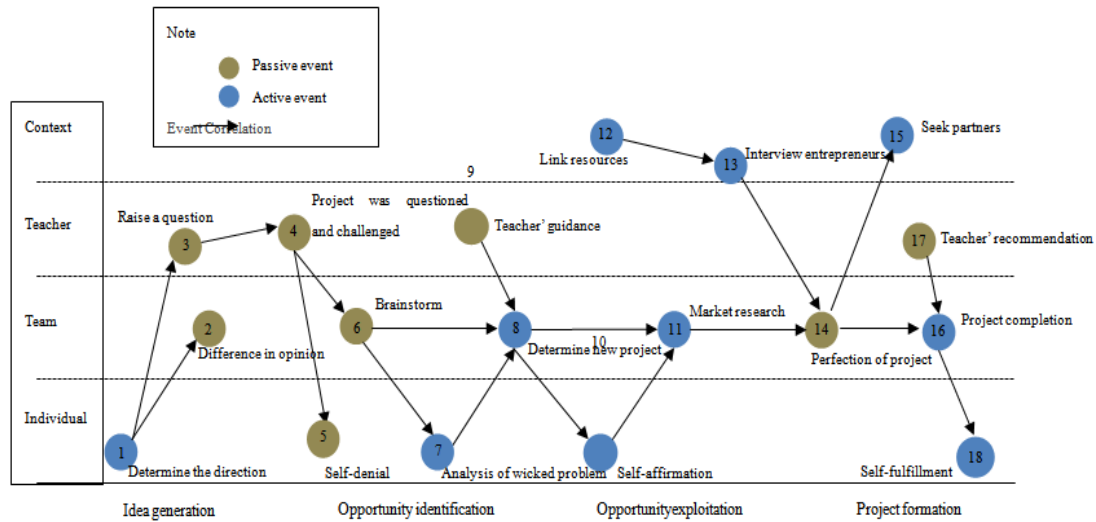


Figure 1 Key Events in the Entrepreneurial Practice Process

3.1.3 Results

In the whole process of entrepreneurial practice, learners actually transform a seemingly feasible project into a feasible project, and complete the cognitive transformation from self-denial to self-affirmation in a series of entrepreneurial practice activities. Most students' perception to entrepreneurship is novel and interesting before they have entrepreneurship education, and they are also full of confidence, expectation and confusion. However, their confidence will disappear with the beginning of practical activities and fall into a negative state of self-denial. For example, some students recalled that "when discussing the ideas, I could not come up with the wicked problem that was most urgent for the market completely. I felt very helpless". "There were many problems with the project indeed, but after being rejected by our teacher, I felt more anxious and confused." However, the pressure they have, on the contrary, promotes the highly integrated collaboration among team members, under the influence of which atmosphere of team cooperation, the individual will be out of this negative state gradually. For example, some students wrote that "because the time was pressing, everybody worked together to solve the problems. We were tired but also much happier because we finished the important work." "We had brainstorming to improve the project continuously, which made me confident in our project." Team atmosphere, therefore, has a profound impact on students' self-awareness. When students are highly confident about their abilities, they will try the new ways to improve their own projects actively for a common goal. For example, they will optimize the division of labor among team members better to achieve higher efficiency, visit plenty of companies to find market vacancy, and interview with entrepreneurs to have access to useful resources, in which process, learners increase their ability of solving problems, innovation thinking and creativity. As a result, we propose that the key events in the entrepreneurial practice affect the change of self-cognition of entrepreneurs, and the external environment, such as the team atmosphere, teacher's guidance and entrepreneurs support will facilitate the transformation of cognition of entrepreneurs. Furthermore, can they try new methods of problem solving only when they have higher confidence about their ability, in which process, they realize the increase of creativity (displayed in figure 2).

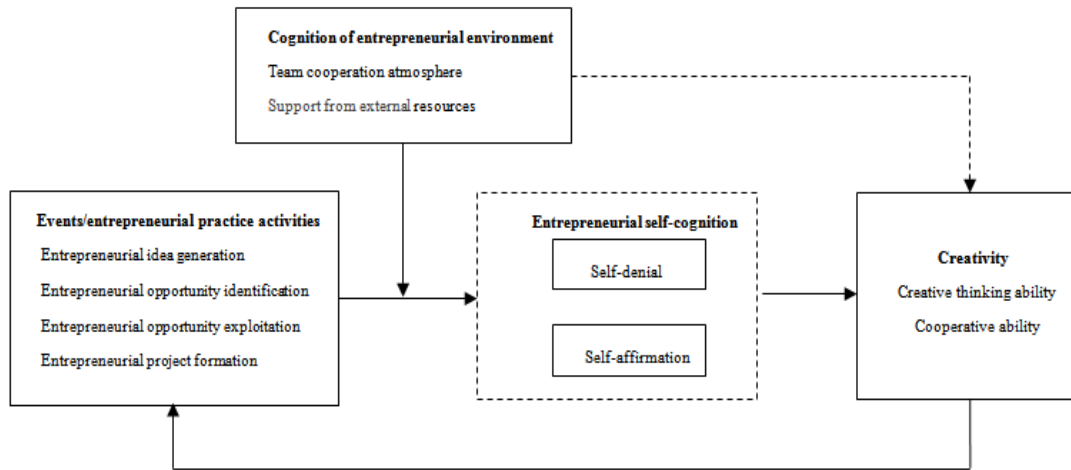


Figure 2 The Formation Path of Learners' creativity based on Event System Theory

3.2 Study 2

3.2.1 Theoretical background and research hypothesis

The results in study 1 show that entrepreneurial practice can facilitate the transformation of learners' self-cognition from being negative to positive. We further refine this transformation process into the embodiment of entrepreneurial self-efficacy. Self-efficacy is a broad concept of social cognition proposed by Bandura (1986), which refers to the cognitive assessment of the individual's ability to arouse the initiative, process resources and control the events in the life. Entrepreneurial self-efficacy demonstrates an individual's belief in his or her ability to successfully fulfill the role and tasks as an entrepreneur (Boyd & Vozikis, 1994). On the one hand, entrepreneurship education presents the knowledge and skills needed to start a business and provides opportunities for individuals to participate in entrepreneurial practices (Piperopoulos & Dimov, 2015). On the other hand, individuals can accumulate experience in the process of entrepreneurial practice constantly, which will also help them to evaluate their ability in solving problems actively. Thus, we suggest the following hypothesis:

Hypothesis 1: Entrepreneurship education has a positive impact on college students' self-efficacy.

Self-efficacy is not a single, constant or decontextualized concept, but dynamic in the interaction with other people, behavior and environmental factors based on the perspective of social cognition. Under the business context, team is the environmental factor that has most immediate environmental effect on individuals. The findings in study 1 also show that individuals will get rid of negative state and conduct self-regulation when they are in highly cooperative atmosphere of the team. Li (2014) pointed out that entrepreneurial self-efficacy could enhance the desire of individuals to achieve entrepreneurial goals when interacting with others and environment. Therefore, we propose that team cooperation atmosphere moderates the relationship between entrepreneurship education and self-efficacy. Thus, we suggest the following hypothesis:

Hypothesis 2: Team cooperation moderates the relationship between entrepreneurship education and students' self-efficacy, such that the relationship is stronger in higher atmosphere of team cooperation and weaker in lower atmosphere of team cooperation.

We believe that entrepreneurship education could improve creativity through entrepreneurs' self-efficacy based on two aspects. First of all, learners have to solve a lot of different problems when encountering practical activities in entrepreneurship education, in which process learners cultivate creativity through trial and error, and become more confident about their ability to perform the task. Self-efficacy improves creativity, because it could eliminate the inherent obstacles of creative thinking (Elliott, 1988). Secondly, self-efficacy is an individual's cognitive assessment of their ability to mobilize the initiative and process resources. Thus, individuals with high innovative self-efficacy can arouse cognitive resources and actions needed to meet the needs of the situation. At the same time, they are willing to spend more time in identifying the creative cognitive process of generating ideas or solutions in problems (Michael et al., 2011). Therefore, we suggest the following hypothesis:

Hypothesis 3: Self-efficacy mediates the relationship between entrepreneurship education and creativity.

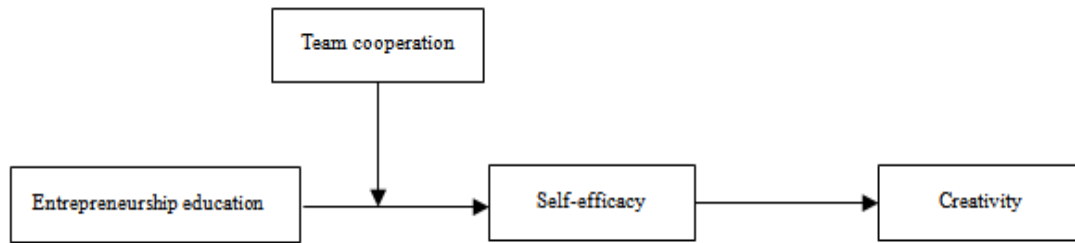


Figure 3 Research Model

3.2.2 Sample and procedure

The sample in study 2 is the same as that in study 1. Not only your respondents who have entrepreneurship education finish the course about entrepreneurship theory courses offered by the business school, but also link resources and cooperate with partners outside to implement and complete an entrepreneurship program. Compared with traditional entrepreneurship education in universities, entrepreneurship education in our surveyed school integrates with theoretically oriented and practically oriented entrepreneurship education, aiming to cultivate entrepreneurs and learners with both theoretical wisdom and practical wisdom, which meets the development needs of the era of innovation economy. Thus, our sample is reasonable and representative.

In order to avoid common method variance, we collect and analyze the data based on multi-stage tracking investigation. Specifically, the data was collected through questionnaires at four time points: week 1 (T1), week 3(T2), week 7 (T3), and week 10 (T4). The data collected for the first time, which is at the beginning of the course, is only used for pre-test and not included in the final result analysis. The data collected at the second time point, which is at the middle and preliminary stage of entrepreneurship education, is served as a reference. The data collected for the third time, which is at the middle and later stage, is mainly to investigate college students' perception of entrepreneurship education (antecedent variable). The last data collection is at the end of the semester, which is to examine students' creativity, self-efficacy and team cooperation. The total amount of valid questionnaires was 221 (displayed in Table 2).

Table 2 Sample Characteristics of Study

Characteristics	Criteria	Frequency	Valid percentage (%)
Gender	Male	138	62.44
	Female	83	37.56
GPA	1.00-2.00	12	5.43
	2.01-3.00	96	43.44
	3.01-4.00	113	51.13

N=221

3.2.2 Measure

Entrepreneurship education was measured with Walter and Block's (2016) four-item instrument, involving self-evaluation of the effect of entrepreneurship education they perceive. Example items were "Entrepreneurship education prompts me to become an entrepreneur".

Self-efficacy was measured with four-item scale from Tierney and Farmer (2002). Example items were "I have confidence in my ability to solve problems creatively".

Creativity was measured using Madjar et al. (2011) six-item instrument. Example items were "I demonstrate originality in my team".

Team cooperation was measured using Shen and Benson's (2016) three-item scale. Example items were "There is a high level of cooperation between team members".

All the measures were employed from the established scale and based on five-point Likert scales, ranging from 1 "strongly disagree" to 5 "strongly agree". We controlled for student's gender, GPA and creativity (T2) in the analysis, which may relate to students' creativity.

3.2.3 Results

We employ SPSS 22.0 to conduct data analysis. Table 3 presents the means, standard deviations, correlations, and reliability estimates (Cronbach alphas) for all variables. Before hypothesis testing, a confirmatory factor analysis (CFA) was conducted with LISERAL8.8 to assess the construct validity of our measures. Results are as follows: RMSEA=0.07, $\chi^2=486.46, df=125$, CFI=0.96, NFI=0.94, TLI=0.95. These findings indicated that our proposed model received a good fit to the data.

Table 3 Means, Standard Deviations, Correlations, and Reliability Estimates for Study Variables

Variable	M	SD	1	2	3	4	5	6	7
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1. Gender	0.38	.48								
2. GPA	3.00	.49	-.277**							
3. Creativity	3.55	.43	.018	.034						
4. Entrepreneurship education	3.77	.65	.023	-.010	.203**	0.81				
5. Self-efficacy	3.83	.65	.016	.001	.452**	.351**	0.85			
6. Creativity	3.81	.56	.057	.042	.514**	.382**	.767**	0.88		
7. Team cooperation	4.15	.76	-.115	.151*	.100	.278**	.310**	.330**	0.89	

Note: N = 221; reliability coefficients appear in bold.

** p < .01.

Hierarchical regression analysis was conducted to test our hypotheses. The results are presented in table 4. Hypothesis 1 proposed that entrepreneurship education has a positive impact on college students' self-efficacy. As shown in Table 4 (M1), entrepreneurship education was positively related to entrepreneurial self-efficacy ($\beta = 0.27, p < 0.001$), supporting hypothesis 1.

Hypothesis 2 stated that team cooperation moderates the relationship between entrepreneurship education and students' self-efficacy, such that the relationship is stronger in higher atmosphere of team cooperation and weaker in lower atmosphere of team cooperation. As shown in Table 4 (M3), the interaction term of entrepreneurship education and team cooperation was positively related to self-efficacy ($\beta = 0.15, p < 0.05, M3$), supporting hypothesis 2.

Hypothesis 3 believed that self-efficacy mediates the relationship between entrepreneurship education and creativity. We test the mediating effect following the procedure outlined by Baron and Kenny (1986): (1) entrepreneurship education was positively related to creativity ($\beta = 0.29, p < 0.001, M4$) and was positively related to self-efficacy ($\beta = 0.27, p < 0.001, M1$); (2) self-efficacy was positively related to creativity ($\beta = 0.63, p < 0.001, M5$); (3) after introducing the mediator (self-efficacy) to the model, the effect of entrepreneurship education on creativity decreased from 0.29 to 0.12 ($\Delta R^2 = 0.29, F = 76.42, p < 0.001$) and entrepreneurship education was still significantly related to creativity ($\beta = 0.12, p < 0.01, M5$). Consequently, self-efficacy partially mediated the relationship between entrepreneurship education and creativity. Thus, hypothesis 3 was supported.

Furthermore, we used an analytical approach outlined by Preacher and Hayes (2008) to test our hypotheses, which investigates the indirect effect via a bootstrapping procedure. By bootstrapping 2000 samples, the result showed that self-efficacy mediated the relationship between entrepreneurship education and creativity (95 percent confidence interval [0.013, 0.155]), which supported hypothesis 3 further.

Table 4 Results of Hierarchical Regression Analysis

Variables	Self-efficacy			Creativity	
	M1	M2	M3	M4	M5
Control variables					
Gender	.00	.01	.02	.06	.06
GPA	-.01	-.04	-.05	.04	.05
Creativity	.39***	.39***	.37***	.45***	.20***
Independent variables					
Entrepreneurship education	.27***	.21***	.21***	.29***	.12**
Moderator					
Team cooperation		.22***	.24***		
Interaction					
Entrepreneurship education* Team cooperation			.15**		
Mediator					
Self-efficacy					.63***
R ²	.28	.32	.34	.34	.63
ΔR^2	.07***	.04***	.02**	.08***	.29***
F	20.43***	20.03***	18.28***	28.87***	76.42***

N = 221, * p < 0.050, ** p < 0.010, *** p < 0.001

IV. DISCUSSION

In study 1, we use event system theory to identify eighteen key events that have an impact on learners from the individual level, team level and teacher level. We conclude that the key events in the entrepreneurial practice affect learners' cognitive transformation from self-denial to self-affirmation in a series of entrepreneurial practice activities, such as the team atmosphere, teacher' guidance and entrepreneurs' support and so on, and then realize the increase of creativity by solving the problems, which carries through the four stages of entrepreneurship, including entrepreneurial idea generation, entrepreneurial opportunity identification,

entrepreneurial opportunity exploitation and entrepreneurial project formation.

In study 2, we conduct in-depth analysis on the effect of entrepreneurial education on learners' creativity with quantitative research method. The results show that entrepreneurship education has a positive impact on university students' creativity indeed and self-efficacy mediates the relationship between entrepreneurship education and creativity, which means that entrepreneurship education strengthens students' creativity through motivating their self-efficacy. In addition, students' self-efficacy in entrepreneurship education is also affected by the team atmosphere. Specifically, entrepreneurship education has a stronger impact on students' self-efficacy, when they are in higher atmosphere of team cooperation.

V. CONCLUSION

5.1 Theoretical contribution and practical implications

In this paper, we use a mixed research method of qualitative and quantitative to address the problems that previous research neglected that "how the learners' creativity is shaped in entrepreneurship education" and "the influence mechanism of entrepreneurship education on learners' creativity."

Our research brings important contributions to the literature on entrepreneurship education. First of all, this paper explores the formation process of learners' creativity in practical activities of entrepreneurship education deeply. The results explain the evolutionary process of creativity that entrepreneurship education could improve learners' creativity by influencing entrepreneurial cognition and combining with the influence of environment, which supplements the lack of previous studies on the formation of entrepreneurs' creativity and provides a detailed and accurate observation sample for studying the formation of creativity in Chinese context unprecedentedly. Secondly, this paper applies the event system theory to the research of entrepreneurship education, finding that entrepreneurial process is essentially composed of different entrepreneurial activities, so it is necessary to analyze practical activities of entrepreneurship education with the event system theory. Finally, this paper further reveals the influence mechanism of entrepreneurship education on learners' creativity with empirical methods on the basis of qualitative research, which two methods complement each other and form a theoretical triangulation.

Our works also holds important practical implications. Firstly, in terms of the course design of entrepreneurship education, course designer should not only pay attention to the enrichment and novelty of the course content, but also focus on the transformation of students' cognitive pattern, keeping an eye on students' psychological activity in the process of entrepreneurship education and motivating students with thoughts and motivations. Secondly, teachers should pay more attention to the cultivation of teamwork atmosphere in entrepreneurship education process, encouraging students to take part in innovation and entrepreneurship activities of the team actively, which may allow stimulating their entrepreneurial passion and enhancing entrepreneurial ability.

5.2 Limitations and future research

There are also some limitations in this paper. Firstly, the entrepreneurship course in our study is mandatory, not optional, which may be a potential factor that impacts the result of the study. Secondly, the data in our study is collected by self-report of the respondents, thus, students might not tell the truth out of consideration of GPA. It is suggested that the data in the following research introduces the assessment by teachers or other parties to improve the persuasiveness of the conclusions. Finally, the conclusions were obtained based on the sample of business school. Therefore, it is necessary to extend the research beyond the business school sample in order to generalize our findings.

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