Research on Evaluation Index of Entrepreneurship Education in Chinese Universities

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Abstract. The entrepreneurship education is becoming an important part of Chinese university education. It is urgent to have an effective evaluation index to guide the work. We reviewed studies on the evaluation index of entrepreneurship education, and divided them into single index evaluation and multi-index evaluation system. In the multi-index system, there are three types: process-oriented, result-oriented and compound effect-oriented. Based on the merits and demerits of each type, and peculiarity of Chinese entrepreneurship education, we believe that evaluation index of entrepreneurship education based on entrepreneurial ecosystem will be more suitable for Chinese universities.

Introduction
Entrepreneurship education is becoming a more and more important part of Chinese university education. However, as a new area which need lots of exploratory work, different universities had different cognitions and practices on entrepreneurship education, it is hard for universities to evaluate the achievement of entrepreneurship education, and find the short slab by comparing with others. Therefore, it is necessary to build a scientific and universal evaluation index system to improve entrepreneurship education for university.

Review of Evaluation Index of Entrepreneurship Education
At present, the evaluation index system of entrepreneurship education can be divided into single index and multiple index system.

Single Index Evaluation of Entrepreneurship Education
Business Start-Up Rates
Business start-up rates measures the proportion of entrepreneurs in the total number of college graduates. It is a direct, simple and practical index. However, its shortcomings are also obvious:
First, business start-up rates only reflect one dimension of the entrepreneurship education achievements, entrepreneurship education also contributes a lot to students’ innovation ability, employment, knowledge reserve, etc. Second, not all educated students start up their business immediately, there is a considerable delay between entrepreneurship education and the business start-up event, and the delay can be up to 10 years [1]. This ‘time lag effect’ of entrepreneurship has brought greater workloads and difficulties in statistical tracking (It costs several years in tracking graduates), and business start-up event can occur at any time interval, which affects the accuracy of statistical data. So, this index is mostly adopted by some large educational research institutes in China (such as MyCOS Company, etc.).
Entrepreneurial Intention
Entrepreneurial intention is the first step of entrepreneurship, it has been widely regarded as the best substitute indicator of entrepreneurship [2]. As the business start-up rate of Chinese college student entrepreneurs is very low, and the ‘time lag effect’ is significant, entrepreneurial intention has been widely studied as the best indicator of predicting college students’ entrepreneurial behavior. Compared with business start-up rates, data acquisition of entrepreneurial intention is more
convenient (through questionnaire survey of college students). However, it also just measures one dimension of the entrepreneurship education. In addition, as an indirect measure index, empirical studies on the relationship between entrepreneurship education and entrepreneurial intention haven’t reach a unified conclusion (see Table 1), which make it an ineffective and unreliable index to evaluate and improve the work of entrepreneurship education.

Table 1. Different conclusions of empirical studies on entrepreneurship education and entrepreneurial intention.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Positive correlation (entrepreneurial intention)</th>
<th>No significant relationship (entrepreneurial intention)</th>
<th>Negative correlation (entrepreneurial intention)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurship education</td>
<td>Fayolle &amp; Gailly, 2015; Wilson et al., 2007; Yinghua Ye, 2009; Dan Chen&amp;Wenke Wang, 2012; Ying Cai&amp;Yongjie Li, 2015</td>
<td>Xian Zhou&amp; Zhongfeng Hu, 2015; Yongqing Hu, 2014</td>
<td>Oosterbeek et al., 2010; Shenggang Ren et al, 2017(Practical entrepreneurial education is positively related to entrepreneurial intention, and theoretical education is negatively correlated with it.)</td>
</tr>
</tbody>
</table>

Multi-index Evaluation System of Entrepreneurship Education

Process-Oriented Evaluation Index System

The process-oriented evaluation index system takes the teaching process of entrepreneurship education as the core assessment field, and pays lots of attention to the perfection of education system standard, teaching operation and content. For example, the MODE evaluation index model of Wuppertal University in Germany had two levels, the macroscopic level index included course continuance, teaching place and target group differentiation, stability of teachers and curriculum system; the microscopic level index included learning objectives and content, teaching methods and means, teaching/learning evaluation [3].

Result-Oriented Evaluation Index System

Result-oriented evaluation index system takes the results of entrepreneurship education as the evaluation objective, and tries to use the results to provide suggestions for the work of entrepreneurship education. Vesper’s (1997) research is a very influential evaluation index system, it contented seven factors, which were courses offered, publication of teachers, social influence, alumni involvement, innovation, alumni entrepreneurship, academic activities[4]. Chaohong Shen and Lu Yang’s (2012) research focused on the short-term and long-term education achievement. Short-term indicators included examination results, attendance, entrepreneurial attitude, entrepreneurial intention, entrepreneurial knowledge, entrepreneurial ability, etc. Long-term indicators included students’ contribution to the social economy, business performance, job satisfaction and so on [5].

Compound Effect-Oriented Evaluation Index System

Compound effect-oriented evaluation index system aims to evaluate entrepreneurship education in a more comprehensive way. For example, from the perspective of input-output efficiency, Jicheng Li (2012) proposed an evaluation index system mainly from the angle of efficiency. The input category included courses, teachers, policies and infrastructures, output category included students, teachers, and social benefits [6]. Besides, based on Stufflebeam’s (1967) more all-sided CIPP model (CIPP: Context, Input, Process, Product), many scholars established compound effect-oriented evaluation index, indicators include ‘Context’ (e.g. knowledge, background, demand of companies and students), ‘Input’ (e.g. teachers, funding, norms), ‘Process’ (e.g. class, practical training base, culture), ‘Product’ (e.g. students’ achievements, research output, social benefits)[7, 8].
Discussion and Conclusion

Single Index Cannot Meet the Needs of Entrepreneurship Education Evaluation

Though single index is intuitive and simple, but their defects are significant. Such as one sidedness, ‘time lag effect’ (business start-up rates), and uncertain correlation with entrepreneurship education (entrepreneurial intention), so there must be a complex multi-index evaluation system to assist entrepreneurship education in university.

Process-Oriented Evaluation Index Is not Suitable for the Entrepreneurship Education at Exploratory Stage

Entrepreneurship educations in most Chinese universities were at the stage of exploration and perfection. There were no unified and widely accepted mode, not to mention an authoritative teaching process. For example, there were three main types of entrepreneurship education mode, which were based on universal classroom teaching, entrepreneurship competition, professional training for special groups, each had different processes and acceptance of teaching institutions, so process-oriented evaluation index was more suitable for western countries with relatively mature education and social environment.

Result and Compound Effect-Oriented Evaluation Index Need Further Improvement

Under the current situation of entrepreneurship education in China, researches on result and compound effect-oriented evaluation index have got lots of attentions from Chinese scholars, some research have been used by several universities. But, there are still some important problems need to be overcome. First, unlike traditional knowledge-imparting education, entrepreneurship education is a more complex process, which has a high requirement on the scientific and efficient of the index system, a little defect may lead to different conclusion. For example, in the empirical study of Jing Gao et al. (2014), they found that entrepreneurship education and competition had a significant impact on college students’ entrepreneurial intention, their entrepreneurial enthusiasm were very high. However, by adopting a further in-depth interviews with students, they found that many policies and funding were not in place, college students only took entrepreneurial competitions and entrepreneurial activities as the hobbies and experience accumulation process, and the final achievement was not as good as what the evaluation data showed [9]. Second, some indicators are important components of the index system, such as business start-up rates, social and economic contribution, new ventures’ performance, etc., but the acquisition of them was difficult, cost a long statistical period, and they had poor longitudinal continuity and cooperativity. These difficulties hindered the further research and application of the index system (Table 2).

<table>
<thead>
<tr>
<th>Type of the evaluation index</th>
<th>Results of discussion</th>
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<tbody>
<tr>
<td>Single Index evaluation</td>
<td>1. Single dimension, not comprehensive</td>
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<td></td>
<td>2. Hard to obtain, ‘time lag effect’</td>
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<td></td>
<td>3. Can not effectively reflect the achievements of</td>
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<td></td>
<td>entrepreneurship education</td>
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<tr>
<td>Process-oriented evaluation index system</td>
<td>There is no unified and widely accepted education process</td>
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<tr>
<td>Result-oriented evaluation index system</td>
<td>1. High requirements on the scientific and efficient of the indicators</td>
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<tr>
<td>Compound effect-oriented evaluation index system</td>
<td>2. Some important indicators are hard to obtain.</td>
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</table>

Entrepreneurial Ecosystem Can Provide a New Perspective for Future Research

Many scholars have described entrepreneurship as an ecosystem [10]. Government, universities, enterprises, financial and legal intermediaries, as well as cultural, economic, technological and other
social environments are all important parts of the ecosystem, and each of them is closely related to the result of entrepreneurship education, so unilaterally evaluating universities’ educational work may not objective and comprehensive, as many key actors are outside the campus. Besides, entrepreneurial ecosystem has a deep relationship with entrepreneurship education. Dunn first described the concept of entrepreneurial ecosystem on 2005 in his study, and his aim was to build a university entrepreneurial ecosystem which imitates natural ecology ecosystem [11].

The close relationship between entrepreneurial ecosystem and entrepreneurial activities has been widely recognized by scholars. Similar with natural life, entrepreneurship has four stages of gestation, birth, growth and maturity, a healthy and vigorous entrepreneurial ecosystem has high self-maintenance, and it can continuous generate entrepreneurship activities and provide good protection for their sustainable growth. In addition, healthy entrepreneurial ecosystem has abundant ecological cycle, the entrepreneurship activities competing to screen excellence ones, and some of them establish symbiotic and associated relationship to raise their survival rate.

To sum up, an evaluation index system based on entrepreneurial ecosystem theory will give a more comprehensive evaluation on entrepreneurship education. A healthy ecosystem means more entrepreneurial activities are gestated and growing, measuring the health of ecosystem shows the possibility to round some indicators which are hard to obtain (such as new ventures’ performance, social and economic contribution), and scholars had a lot of achievements in the ecosystem health evaluation index, such as business/ entrepreneurship/innovation ecosystem health.

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References


