



Working together  
www.rcis.ro

## Revista de Cercetare și Intervenție Socială

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)

---

### A STUDY ON THE INNOVATIVE ENTREPRENEURSHIP TEACHING ABILITY TRAINING OF UNIVERSITY TEACHERS IN CHINA – A CASE OF UNIVERSITIES IN SHAANXI

*Jian Jian ZHU, Chu Ming REN*

---

Revista de cercetare și intervenție socială, 2023, vol. 83, pp. 203-212

<https://doi.org/10.33788/rcis.83.14>

Published by:  
Expert Projects Publishing House



On behalf of:  
„Alexandru Ioan Cuza” University,  
Department of Sociology and Social Work  
and  
HoltIS Association

# **A Study on the Innovative Entrepreneurship Teaching Ability Training of University Teachers in China – A Case of Universities in Shaanxi**

Jian Jian ZHU<sup>1</sup>, Chu Ming REN<sup>2</sup>

## **Abstract**

The wave of entrepreneurship has become an unstoppable trend to advance talents and drive the future. To positively seek for valuable innovation and creativity is worldwide that it presents the importance for national economic development and the creation of students' job opportunities. Teachers are not simply the success key in school education, but are also an inevitable key in students' learning. Teachers would affect school education and students' learning as well as influence the success of education reform. For this reason, it is necessary to cultivate more quality teachers to enhance the quality of education. Aiming at university teachers in Shaanxi as the questionnaire analysis objects, 300 copies of questionnaire are distributed for this study, and 261 valid copies are retrieved, with the retrieval rate 87%. The research results show that 1.teaching philosophy is the most emphasized dimension for the innovative entrepreneurship teaching ability training of university teachers in China and 2.top five indicators, among 12, contain innovation idea, adjustment & innovation, attraction to students, teaching creativity, and objectivity & diversity. According to the results to propose discussions and suggestions, it is expected to enhance students' entrepreneurial spirit, entrepreneurial ability, and entrepreneurial intention.

*Keywords:* university teacher; entrepreneurship teaching; innovation ability; innovative instruction; ability training.

---

<sup>1</sup> Educational Administration, International College, Krirk University, THAILAND.

E-mail: 674014751@qq.com

<sup>2</sup> Educational Administration, International College, Krirk University, THAILAND. E-mail: renchu1974@163.com

## Introduction

Universities have gradually moved towards “academic oriented” development in past years that university graduates’ “academic gap” and “impractical learning” are criticized in industry. It is considered that universities not paying attention to practical performance results in university graduates’ frustration on seeking for a job. Entrepreneurship could help students create individual job opportunities as well as assist students in coping industrial demands, enhancing practical skills, and solving employment dilemma. Students therefore should be cultivated entrepreneurial ability to enhance the future job opportunities. Chang *et al.* (2021), through document analysis, concluded the high correlations between the cultivation of entrepreneurial ability and entrepreneurship education. Domestic and international higher education presents emphasis and enthusiasm on entrepreneurship education. The wave of entrepreneurship becomes an unstoppable trend to advance talents and drive the future. Valuation innovation and creativity are positively sought in the world in order to urgently recreate the new era of industrial economics. It shows the importance of national economic development and the creation of students’ job opportunities.

The success of education relies on the quality of teachers. The quality of education reflects the quality of teachers. Good education would not appear without good teachers. Teachers are not simply the success key in school education, but are also the inevitable key in students’ learning. In addition to influencing school education and students’ learning, teachers would affect the success of education reform. Accordingly, it is necessary to cultivate more quality teachers to promote the quality of education.

Most domestic and international studies explore the course content and the education system, but seldom discuss teachers’ teaching ability and effectiveness on entrepreneurship course. Furthermore, most studies on instructional effectiveness would apply action research to practice pretest/posttest comparison, quasi-experiment to compare the experimental group and the control group, or qualitative research, while university teachers’ innovative entrepreneurship teaching ability training is seldom directly discussed. When entrepreneurship course is emphasized, people should think of teaching methods to better help students, who are the direct receivers in the instruction. As a result, this study aims to discuss the innovative entrepreneurship teaching ability training of university teachers in China to understand university students’ opinions about teachers’ innovative entrepreneurship teaching ability and the understanding of entrepreneurship related knowledge after studying the relevant courses as well as to discuss critical factors in teachers’ innovative entrepreneurship teaching ability training. It is expected to enhance students’ entrepreneurial spirit, entrepreneurial ability, and entrepreneurial intention.

## Literature review

### *Meaning of innovative instruction*

“Innovation”, meaning creation and bringing forth the fresh, is opposite to “conservation”, “instauration”, and “tradition”. “Instruction” is the process in which teachers deliver knowledge and skills to students. “Innovative instruction” therefore combines the meanings of “innovation” and “instruction” to create and innovate the process of teachers delivering knowledge and skills to students. Penado *et al.* (2021) regarded creative teaching as teachers presenting the creativity on teaching in the teaching process, and creativity teaching as teachers inspiring or cultivating students’ creativity in the teaching process. Haleem *et al.* (2022) considered that the practice of creative teaching was different from traditional teaching; creative teaching referred to teachers, according to the theory and principle of creation and thinking, applying various methods or strategies to inspire students’ creativity and thinking ability in the teaching process. Nang, Maat, & Mahmud (2022) regarded students as the final beneficiary in creative teaching that creative teaching was defined as teachers promoting students’ learning interests, motivation, performance, or creativity with creative styles. Arslan *et al.* (2022) considered that teachers with innovative and forward-looking teaching philosophy would think of enhancing students’ learning interests and inspiring the higher thinking ability through the change of teaching strategy, transfer innovative ideas to specific material design or selection, break through teaching methods and change evaluation methods, as well as flexibly use such teaching design in the actual instruction; such a complicated process was the so-called “innovative instruction”. Jahnke & Liebscher (2020) regarded “innovative instruction” as the teaching process in which teachers presented open and forward-looking teaching thoughts, transferred innovative ideas to teaching strategies, utilized specific curriculum design, improved teaching methods, and broke through evaluation methods to promote students’ learning interests and inspire the high-level thinking ability.

### *Entrepreneurship education*

Entrepreneurship (enterprise), originated from ancient French, which could be used as a noun or a verb, means to positively and actively achieve tasks and present actions and cognition & ability to take risks. Entrepreneurship reveals positive effects on national economic growth, such as reducing unemployment rate, activating social economy, and assisting in the generation of innovative technology (Nisafani, Kiely, & Mahony, 2020). Entrepreneurship education is emphasized due to economic effect and market demand. Dong *et al.* (2021) organized 15 critical success factors in entrepreneurship, where entrepreneurs’ personality traits and willingness to take risks were innate characteristics, while fund acquisition, financial control, entrepreneurial experience, business

planning, market opportunity selection, entrepreneurs' knowledge ability, quality of entrepreneurial team members, benefit sharing mechanism, network resource relationship, product creativity, management, marketing, and crisis management were acquired influence. Above content shows that entrepreneurship could enhance students' entrepreneurial opportunities through good entrepreneurship education. Entrepreneurship education aims to cultivate students' entrepreneurial intention and skills. Robinson *et al.* (2023) defined entrepreneurship education as the teaching method or cultivation process of entrepreneurial attitude and skills, and the core of entrepreneurship education as to cultivate students' entrepreneurial spirit and entrepreneurial ability.

- *Entrepreneurial spirit*: Entrepreneurship refers to an innovation process or an integrated ability put into enterprise operation that innovation is an important core of entrepreneurial spirit.
- *Entrepreneurial ability*: The professional knowledge and skills of entrepreneurship are divided into 6 major entrepreneurial abilities of marketing ability for communication, product and technology related knowledge, organization and management capability, creation of competitive advantages under same resources, opportunity recognition and opportunity cognition ability, and commercialization of product design ideas.

#### *Factors in teachers' innovative entrepreneurship teaching ability training*

Scholars' brief meanings of teachers' innovative entrepreneurship teaching ability training are organized as followings.

- *Teaching philosophy*: Li & Wang (2021) considered that teachers should be aware of innovative teaching philosophy, apply new teaching models and methods, and precede review, improvement, and reflection to innovate the teaching and make students' learning meaningful. After organizing scholars' statements, Wang & Yao (2023) considered that teachers coped with time change and education reform to realize innovative education philosophy, used new teaching methods in the instruction, and often reflected and improved the instruction in the constant self-development process to innovate the instruction and enhance students' learning effectiveness. It was teaching philosophy innovation.
- *Teaching content*: Hang *et al.* (2022) considered that teachers should aim to attract students' learning and enhance students' learning motivation as well as innovate curriculum design through relevant fields, issues, and students' learning and life experience to multiply students' learning effectiveness. Wang & Yao (2023) regarded teaching content innovation as teachers adding several innovative ideas in curriculum design to induce students' learning motivation, combining news issues and relevant fields, designing rich, diverse, and appropriate courses, as well as teaching students in accordance with students' aptitude to

enhance the teaching effectiveness and multiply students' learning effectiveness.

- *Teaching strategy*: Szeto (2022) considered that teachers had to adjust teaching strategies according to students' individual differences and make innovation to promote students' willingness to learn and achieve the goal of adaptive teaching. Wang & Yao (2023) regarded teaching strategy innovation as teachers familiarizing various teaching strategies and classroom management methods, matching various equipment and resources, selecting teaching strategies suitable for students' needs according to students' individual differences, and making innovation to enhance students' learning motivation and make instruction richer & diversified and active & interesting.
- *Instructional evaluation*: Khlaif *et al.* (2023) mentioned that teachers followed teaching objectives, selected proper evaluation tools without being restricted to traditional paper-and-pencil tests, but used objective and diverse evaluation methods to review students' learning attitude and achievement performance. Wang & Yao (2023) explained instructional evaluation innovation as teachers selecting suitable evaluation methods according to students' individual differences, learning situations, and teaching objectives, inspecting the effectiveness of innovative instruction through diverse evaluation methods, evaluating students' achievement of teaching objectives, and preceding teaching reflection for constant improvement.

## Methodology

### *Research method*

Hosseini & Keshavarz (2017) pointed out the confirmation of critical success factors with (1) regression analysis; (2) factor analysis; (3) Delphi, and (4) analytic hierarchy process (AHP). Garbuzova-Schlifter & Madlener (2016) explained the meaning of analytic hierarchy process as collecting opinions of scholars, experts, and participants through group discussion to simplify complicated problems into a hierarchic evaluation system with simple elements, and, according to experts' brainstorming, calculating the contribution or priority of elements in a hierarchy corresponding to the previous hierarchy. Garbuzova-Schlifter & Madlener (2016) mentioned to objectively interview department supervisors, confirm goals and tasks according the management program, and propose individual critical success factors according to individual practical experiences and needs for analyses in order to organize critical success factors in the goal; such factors were sequenced for effectively distributing resources; finally, the practice effectiveness was built the indicators.

Experts' questionnaire survey is utilized in this study. In consideration of mean, decision attribute related, and group decision inaccuracy in traditional Delphi, fuzzy Delphi method (FDM) and analytic hierarchy process (AHP) are used for data analyses in this study to definitely select critical factors in the innovative entrepreneurship teaching ability training of university teachers in China.

- *Fuzzy Delphi Method (FDM)*: Murry *et al.* first integrated fuzzy theory into traditional Delphi by in 1985 and applied the value of variables corresponding to human semantic differences for expression. For instance, semantic weights in human language could be regarded as a language variable, with the value of “extremely low”, “low”, “medium”, “high”, and “extremely high”, or other terms with different levels, which were given different weights for estimation. Murry *et al.* proposed to evaluate fuzzy semantic variables in order to solve fuzziness problem in traditional Delphi, but did not propose more specific calculation. Successive researchers continuously proposed solutions, e.g. range, fuzzy integral, triangular fuzzy number, and double triangular fuzzy number.
- *Analytic hierarchy process*: After integrating experts' opinions, a complicated decision system is constructed a hierarchy system, which is developed by layers to clarify problems, and then completed dual evaluation with paired comparison to evaluated the importance of factors.

### *Indicator building*

The questionnaire for this study is emailed to experts in various fields. The first-time feedback is calculated the items of university teachers' innovative entrepreneurship teaching ability training. The items with similar property are classified and then mailed to the experts for opinions. With several runs of inquiry, the major categories are achieved. An expert meeting is called to set the critical success factors in university teachers' innovative entrepreneurship teaching ability training, including teaching philosophy, teaching content, teaching strategy, and instructional evaluation. Such factors are used as the AHP dimensions, and the corresponding categories, as the principles, are built the AHP questionnaire. After the revision with Delphi, the following criteria are acquired for this study: (1) Teaching philosophy: teaching creativity, innovation idea, reflection & improvement; (2) Teaching content: attraction to students, changeable materials, richness & diversity; (3) Teaching strategy: adjustment & innovation, flexible change, familiarity strategy; (4) Instructional evaluation: objectivity & diversity, supervision & correction, teaching reflection.

### *Research object*

Aiming at university teachers in Shaanxi as the questionnaire analysis objects, 300 copies of questionnaire are distributed, and 261 valid copies are retrieved, with the retrieval rate 87%. There are 34 public universities, 21 private universities, 29

public colleges, 9 private colleges, 15 adult universities, and 6 military colleges in Shaanxi. Public universities are selected as the research objects for this study.

## Results

After completing the weights of all hierarchies, the indicators are distributed according to the importance to show the importance in the entire system and reveal the overall weight of factors in the innovative entrepreneurship teaching ability training of university teachers in China, Table 1.

Table 1. Overall weights of factors in innovative entrepreneurship teaching ability training of university teachers in China

Dimension	Hierarchy 2 weight	Hierarchy 2 order	Indicator	Overall weight	Overall order
teaching philosophy	0.294	1	teaching creativity	0.107	4
			innovation idea	0.137	1
			reflection & improvement	0.043	12
teaching content	0.237	3	attraction to students	0.115	3
			changeable materials	0.066	8
			richness & diversity	0.071	7
teaching strategy	0.253	2	adjustment & innovation	0.122	2
			flexible change	0.052	10
			familiarity strategy	0.086	6
instructional evaluation	0.216	4	objectivity & diversity	0.096	5
			supervision & correction	0.056	9
			teaching reflection	0.049	11

## Discussion

The research findings show the extreme importance of the preparation and strategy before entrepreneurship course for the innovative entrepreneurship teaching ability training of university teachers in China. First, at the teaching objective stage of the innovative entrepreneurship teaching ability of university teachers in China, teachers confirm the teaching objectives of entrepreneurship course. There are preparations for teachers, practitioners, students, or course environment to enhance the innovative entrepreneurship teaching ability of university teachers



in China. Regarding teaching strategy, the idea of teamwork is emphasized in entrepreneurship. The grouping of the innovative entrepreneurship teaching course of university teachers in China could have students induce more creativity and cooperation training. At the stage of the innovative entrepreneurship teaching activity of university teachers in China, practical teaching content is adopted and implementation is more important than theory lecturing to allow students learning from practice. At the teaching evaluation stage, the innovative entrepreneurship teaching of university teachers in China replaces traditional paper-and-pencil test with reports, and students are asked hand-writing reports to induce the thinking. Some activities are preceded with students' mutual evaluation to cultivate students' observation ability. The teaching evaluation results are feedback to various stages for teaching correction.

Entrepreneurship course in innovative entrepreneurship teaching practice focuses on learning by doing that students appear lower understanding of entrepreneurship knowledge. In theoretical entrepreneurship course, students merely show the impression on entrepreneurial resource channels, e.g. fundraising channels and channels for entrepreneurial need. Entrepreneurial sharing in the innovative entrepreneurship teaching of university teachers in China could increase students' vision of risk taking and enhance students' innovative thinking to induce more creativity of students, enhance students' brave attitude, and force students to solve difficulties through actual entrepreneurial activity so that students could be constantly induced courage.

## Conclusion

According to the empirical result analysis, "teaching philosophy", weighted 0.294, is the most emphasized dimension in Hierarchy 2, about 29.4% of overall weight, following by "teaching strategy" (weighted 0.253), "teaching content" (weighted 0.237), and "instructional evaluation" (weighted 0.216). The result reveals that teaching philosophy is the most emphasized factor in innovative entrepreneurship teaching ability training of university teachers in China.

Among indicators in Hierarchy 3, the weights are ordered as below. 1. Under teaching philosophy, the indicators are ordered innovation idea, teaching creativity, and reflection & improvement. 2. Under teaching content, the indicators are ordered attraction to students, richness & diversity, and changeable materials. 3. Under teaching strategy, the indicators are ordered adjustment & innovation, familiarity strategy, and flexible change. 4. The indicators under instructional evaluation are ordered objectivity & diversity, supervision & correction, and teaching reflection.

From the overall weights of factors in innovative entrepreneurship teaching ability training of university teachers in China, top five indicators, among 12, are ordered innovation idea, adjustment & innovation, attraction to students, teaching creativity, and objectivity & diversity.

### Suggestions

Education administration authority and relevant administrators should have teachers understand the real meaning and practice points of entrepreneurship teaching so as to enhance teachers' professional growth, innovative instruction, and teaching effectiveness. Either new teachers or experienced teachers with teaching observation and professional development evaluation should understand and practice open instruction to further positively affect the professional growth, innovative instruction, and teaching effectiveness through innovative entrepreneurship teaching and achieve "spontaneity, interaction, common good". What is more, staff being willing to lead the execution of innovative entrepreneurship teaching would more thoroughly execute innovative entrepreneurship teaching, and the participants could better perceive the real meaning of innovative entrepreneurship teaching. It could have innovative entrepreneurship teaching not degenerate into forms. Besides, a person's leading presents demonstration function to have the education partners feel the companion in education. It would need all education partners to collaboratively create friendly, warm, and harmonious atmosphere and have the school become a trustful and secure learning field for exchange, observation, and growth.

### References

- Arslan, H., Şahin, T. L., Odabaş, H. F. & Okur, M. R. (2022). An investigation of change in teachers' technostress levels before and after the Covid-19 outbreak. *Educational Media International*, 59(2), 95-111; DOI: 10.1080/09523987.2022.2101202.
- Chang, C. M., Hsieh, H. H., Chou, Y. H., & Huang, H. C. (2021). The relationship between physical education teachers' perceptions of principals' transformational leadership and creative teaching behavior at junior and senior high schools: A cross-level moderating effect on innovative school climates. *Sustainability*, 13(15), 8184; DOI: 10.3390/su13158184.
- Dong, N., Marcus, P., & Sedat, G. (2021). Collective teacher innovativeness in 48 countries: Effects of teacher autonomy, collaborative culture, and professional learning. *Teaching and Teacher Education*, 106, 7-8; DOI: 10.1016/j.tate.2021.103463.
- Garbuzova-Schlifter, M., & Madlener, R. (2016), AHP-based risk analysis of energy performance contracting projects in Russia. *Energy Policy*, 97, 559-581; DOI: 10.1016/j.enpol.2016.07.024.
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285; DOI: 10.1016/j.susoc.2022.05.004.
- Hang, Y., Hussain, G., Amin, A., & Abdullah, M. I. (2022). The moderating effects of technostress inhibitors on techno-stressors and employee's well-being. *Frontiers in Psychology*, 12, 1664-1078; DOI: 10.3389/fpsyg.2021.821446.
- Hosseini, M. H., & Keshavarz, E. (2017). Using fuzzy AHP and fuzzy TOPSIS for strategic analysis measurement of service quality in banking industry. *International Journal of Applied Management Science*, 9(1), 55-80; DOI: 10.1504/IJAMS.2017.10003205.

- Jahnke, I., & Liebscher, J. (2020). Three types of integrated course designs for using mobile technologies to support creativity in higher education. *Computers & Education, 146*, 103782; DOI: 10.1016/j.compedu.2019.103782.
- Khlaif, Z.N., Sanmugam, M., Joma, A.I. *et al.* (2023). Factors influencing teacher's technostress experienced in using emerging technology: A qualitative study. *Technology, Knowledge and Learning, 28*, 865-899; DOI: 10.1007/s10758-022-09607-9.
- Li, L., & Wang, X. (2021). Technostress inhibitors and creators and their impacts on university teachers' work performance in higher education. *Cognition, Technology & Work, 23*, 315-330; DOI: doi.org/10.1007/s10111-020-00625-0.
- Nang, A.F.M., Maat, S.M., & Mahmud, M.S. (2022). Teacher technostress and coping mechanisms during Covid-19 pandemic: A systematic review. *Pegem Journal of Education and Instruction, 12*(2), 200-212; DOI: 10.47750/pegegog.12.02.20.
- Nisafani, A. S., Kiely, G., & Mahony, C. (2020). Workers' technostress: a review of its causes, strains, inhibitors, and impacts. *Journal of Decision Systems, 29*, 243-258; DOI: 10.1080/12460125.2020.1796286.
- Penado, A.M., Rodicio-García, M.-L., Ríos-de Deus, M.P. & Mosquera-González, M.J. (2021). Technostress in Spanish university teachers during the COVID-19 pandemic. *Frontiers in Psychology, 12*, 617650; DOI: 10.3389/fpsyg.2021.617650.
- Robinson, L.E., Valido, A., Drescher, A. *et al.* (2023). Teachers, Stress, and the COVID-19 Pandemic: A Qualitative Analysis. *School Mental Health, 15*, 78-89; DOI: 10.1007/s12310-022-09533-2.
- Szeto, E. (2022). Influence of professional cultures and principal leadership effects on early-career teacher leadership development in Hong Kong schools. *Professional Development in Education, 48*(3), 379-397; DOI: 10.1080/19415257.2020.1770837.
- Wang, Q. & Yao, N. (2023). The impact of technostress creators on novice teachers' job satisfaction. *Journal of Education for Teaching, 49*(1), 104-119; DOI:10.1080/02607476.2021.2013712.