

Will New Type Universities Change Traditional Higher Education? – Based on the Cases of Minerva University in United States and Westlake University in China

Mian Lin

School of Graduate Studies, Lingnan University, Hong Kong, China
Email: mianlin@ln.hk

Abstract—This article compares and summarizes the new typical universities of China and the United States, and identifies the similarities and differences in organizational forms, training methods, curriculum systems, and teaching models. The results found Minerva University in the United States focuses on undergraduate education, and it advocates small class teaching and adopts network teaching to further strengthen the interaction between students and teachers, and pay more attention to and build up the global vision and international communication ability. Westlake University in China pays more attention to doctoral education, attracts global talents to join Westlake University through various ways, sets up independent laboratories according to different disciplines, and actively cooperates with enterprises, further promotes the combination of scientific research and products. The changes in these two universities indicate the trend and direction of higher education reform.

Keywords—new type universities, Minerva University, Westlake University, higher education reform

I. INTRODUCTION

With the rapid development of information technology and the deepening of globalization, major changes have taken place in all fields of human life. Taking the field of education as an example, in recent years, not only new forms of education such as flipped classrooms, Massive Open Online Courses (MOOCs), and cross-border education have emerged, but also new types of universities that are different from traditional universities. Compared with traditional universities, the new university has significant innovations in terms of organizational form, training methods, curriculum system, teaching mode, etc., which is mainly reflected in the fact that the new university has no campus, global study tours, integrated courses, and online seminars. Although the university has only been established for 6 years, its admission rate is lower than that of Harvard University and other prestigious universities, and the admission rate has remained at about 2% in recent years.

With the establishment of Westlake University, the first new type of private research university in China, a new type of research university has emerged as a new type of higher education system in China and has developed rapidly, which has also attracted widespread attention from the government and all walks of life. Since it is called a “new type of research university”, what is the difference between a new type of research university and a traditional research university has naturally become the core issue of concern for theoretical researchers and practitioners.

So why were new universities such as Minerva University in the United States and Westlake University in China founded? What has happened to its talent training model? What are the features? What can be learned from this? A series of questions are thought-provoking, and also make us curious about the new university talent training model and university governance, so as to conduct in-depth analysis and thinking through case studies.

II. LITERATURE REVIEW

(1) The relationship between new type universities and knowledge

Scholars believe that the essence of knowledge economy is innovation, which will lead to changes in people’s social behavior and values, and its development forces universities to undertake greater responsibilities and tasks, which requires colleges and universities to change their roles. Innovation is a new concept and new driving force to develop into an innovative university [1–3]. Therefore, the new type of university is the product of knowledge innovation, technological innovation, and educational innovation of traditional universities under the condition of knowledge economy [4].

(2) Research on the characteristics of new types universities

Burton [5] put forward five organizational characteristics of new type universities: a strong leader; expanded connections with society, providing a wide range of services, diversified funding sources, innovation

in organization and management, independence, innovation, and the courage to take risks group culture. Li and Tang [6] think that new type universities take cultivating innovative talents as the main goal and basic value orientation, and talent training pays more attention to enhancing students' innovative consciousness and ability. Pang [7] proposed that the funding sources of the new type universities are diversified, including not only the financial support from the national government, but also the operating income of independent entrepreneurship and enterprise funding.

(3) Limitations of a new type university

New research universities have relied on huge investments to grow rapidly, and through huge financial investments, they have been able to recruit elite scientists from all over the world. Huge investments need to be backed by sustained and rapid economic growth, otherwise, huge investments will be difficult to sustain. It is difficult to maintain explosive growth driven by inputs.

It is difficult to form a good academic ecological environment with high competition. The new type of research university is known for its rapid development, which makes it necessary to adapt quickly to external changes, and the selection of teachers is very high, resulting in a very high turnover of teachers. High mobility often makes it difficult to create a high-quality academic culture. A high-quality academic culture emphasizes collaboration over competition.

The discipline focuses on science and engineering, and it is difficult to cultivate humanistic feelings. Traditional universities are based on the humanities and aim to cultivate high humanistic qualities. The new type of research universities generally focuses on science and engineering, emphasizes competition, emphasizes elite culture, and it is difficult to show sufficient care for the living conditions of the public.

To sum up, there are many research achievements of domestic and foreign scholars around the theme of the new type universities, but there are some defects. Limited to a certain region of the new type universities research, the guidance is not strong, there is no comparison of the new type of universities in various countries.

III. MATERIALS AND METHODS

This paper will use three methods, including literature research, comparative method, and case study. The main sources of literature are: Documents published on the official website, including school overview, enrollment, curriculum arrangement, project progress, etc.; CNKI Chinese database; Google Scholar English database, etc. All documents are based on the most recent update time, regardless of whether the statements are consistent or not, and the sources with the most recent update time shall prevail.

Meanwhile, this paper will take Minerva University and Westlake University as examples, this study comprehensively studies their operating mechanisms, hardware facilities, teaching models, training objectives, and other contents, and then uses the comparative method to compare the two new type universities and analyze

their respective innovation points. Using the case study method can help us understand better about the development trend of higher education reform in the United States and China.

Case 1: Minerva school at KGI

In 2013, a new type of university with "no campus, no introductory classes, no lecture-based teaching, all small classes online seminars, and four-year study tours in seven cities around the world" was established in San Francisco, the United States, named Minerva school at KGI. The founding team of Minerva is strong, including the former Harvard president, the dean of the Department of Social Sciences of Harvard University, and the director of the Behavioral Science Research Center of Stanford University, and other internationally renowned scholars and educators. Their goal is to "subvert traditional education" and "change people's impression of universities" [8].

The research selected 9 items to compare the difference between traditional universities and Minerva University. The 9 selection criteria include: educational philosophy, Facilities, Recruitment, Enrollment method, Training Objective, Teaching mode, Learning process, Student service, and Curriculum structure.

For educational philosophy, traditional university has three functions: Talent training, scientific research, and social service, especially focus on scientific research. But, Minerva School is more care about students, focusing on students, student success is the only criterion for measuring the success of the University. For facilities, traditional universities need to invest huge funds to build campuses, teaching buildings, libraries, laboratories, gymnasiums, and other facilities. But Minerva School is investing funds directly on students, instead of building fixed campuses, or investing large amounts of funds in school facilities, but it can cooperate with local universities, research institutes, and companies, so that students can use first-class libraries, laboratories, and other facilities. This is a good way to use local public resources. For recruitment, traditional university evaluation of teaching staff is focused on academic achievements, but Minerva School cares more about how teachers treat students' development and whether have a passion for teaching or not. Each teaching staff must be trained to learn how to use the online platform and learn how to cultivate students' core abilities. For enrollment methods, normal college or university admission applications should submit SAT or ACT scores in United States. For training objective, the training objective is rather vague in usual, and the training objective does not match the curriculum. But Minerva School includes three levels of training objectives. One is to cultivate thinking habits and basic knowledge; the other is to cultivate four core competencies: creative thinking, critical thinking, effective communication, and effective interaction. The third is the ultimate goal, to train students as leaders, innovators, thinkers, and global citizens. For teaching mode, the traditional way includes lecture-style teaching, seminars, case studies, and project courses. Many courses are taught by postgraduate assistants, and teachers

emphasize scientific research. But in Minerva school, the teaching mode is very special. All courses are small class seminars with less than 20 students, organized through active learning forums to promote interaction between teachers and students. In small classes, students must deal with tests and questions that appear at any time. The content of the class is intensive research and discussion, and all basic knowledge learning is completed by the students themselves. In the learning process, students spend most of their time in school, attending classes and exams, taking credits, and completing graduation thesis, but in Minerva School, they have different learning ways, like Global immersive learning, all students live and study in 7 cities around the world within four years, and participate in local community activities; Online seminars: Specially designed online seminar platforms, all of which are online small-class seminars and teacher-student interaction. Autonomous learning: students read, research, and write a lot after class. For student service, the Minerva School provides life-long services for students: The professional team of the Career Development Department provides life-long career development consulting and guidance for students. For curriculum structure, they have four stages, the first stage is a basic course, which cultivates four types of core abilities. The second stage is a core course to help students determine the main direction; the third stage is a special course to deepen knowledge and prepare for projects; the fourth stage is a culmination project that integrates knowledge, ability, and technology, reaching the culmination of college career.

Case 2: Westlake University

Westlake University was established in 2018. Westlake University is positioned as a “high starting point, small but sophisticated, and research-oriented”, and has established three schools: School of Science, School of Engineering, and School of Life Sciences. From the perspective of faculty, Westlake University recruits leading talents and young scientists in various industries from all over the world. According to statistics in July 2020, Westlake University has 125 scientists, of which 13 chair professors are outstanding in their fields.

Compared to other traditional universities in China, we know that the first is the orientation of Westlake University is small but precise, high starting point, and limited subjects. Westlake University is a non-profit public-aided private research university under the leadership of the board of directors and a non-profit public-aided private research university. The second is they build teaching and scientific research as a center, independent laboratories will be established for hundreds of scientists, totaling more than 300. Teaching buildings and laboratories are designed according to the experimental requirements of different majors, which have the characteristics of shock absorption and isolation. The third is that Westlake University is not only focused on the number of academic papers and the citation rate or impact factor, but also pays more attention is academic evaluation mainly depends on whether the research is the most cutting-edge and substantive progress in related

fields. The fourth is the enrollment method, Westlake University conducts an application assessment system, and sends your resume to the designated mailbox of Westlake University within the specified time. The school conducts initial scoring and screening based on the resume, and enters the interview after screening. After the interview, you are accepted. Westlake University’s annual enrollment is divided into two batches. The first batch is aimed at fresh undergraduates who have a place for undergraduates or students who have participated in the summer camp at Westlake University. The second batch is for recent undergraduates, masters, or past undergraduates and master graduates. The fifth is training objective, Westlake University is cultivating top-notch innovative talents with a sense of social responsibility. The sixth is teaching mode, Westlake University provides highlight individuality, interdisciplinary training methods, combined with independent laboratory system. The last one is the learning process in Westlake University, which focuses more on laboratory integration enterprise.

IV. RESULT AND DISCUSSION

Based on the two cases’ analysis, Minerva University in the United States and Westlake University in China have broken through the shackles of traditional universities and achieved many innovations in organizational forms, university management, cultivation methods, curriculum, educational models, and funding sources. And, Minerva University in the United States focuses on undergraduate education, and it advocates small class teaching and adopts network teaching to further strengthen the interaction between students and teachers, and pay more attention to and build up the global vision and international communication ability. These innovations change people’s impression of the traditional university and show a new mode of university education. It can include four aspects to innovate the university mode.

(1) Innovation in organizational form: No campus

The University of Minerva does not have facilities such as a campus, library, gymnasium, etc. The students study in an office building in San Francisco for the first year and travel to six cities in the world for the remaining three years. Through cooperation with local governments, universities, research institutes, and enterprises, it provides students with places for learning, experimentation, and research, and makes full use of resources such as public libraries and gymnasiums in local cities. The University of Minerva organizes teachers and students through an online learning platform, which allows the university to save a lot of capital investment compared with traditional universities. The funds can be used directly on students, reducing hardware investment, and the education cost of the University of Minerva is lower than that of traditional universities. 2/3, making tuition prices low, but can obtain high-quality elite education [9].

(2) Cultivation method innovation: Global study tour

The university believes that “integrating into the world is the best way to understand the world”. In the first year,

students study evening basic courses in San Francisco, USA. From the second academic year, they live and study in a city in the world each semester, and participate in local activities and learning. Local language, fully integrated into the world. This approach is called “global immersion learning”.

(3) Curriculum innovation: Integration

It is not the interdisciplinary model of traditional universities-science and engineering students take several humanities courses, and liberal arts students take several natural science courses, this model does not allow students to truly integrate different knowledge of each other. The University of Minerva integrates knowledge, theories, and techniques from different disciplines in one course to analyze and solve problems. For example, the course of multimodal communications includes writing, speech, design and artistic expression, aesthetics, literature, and philosophy.

(4) Teaching model innovation: Online seminar

An online learning platform was developed using the latest technology. This is different from “MOOC”. The online platform of the University of Minerva is not a recorded course, but a real-time online learning for teachers and students. It is not a lecture-based teaching, but a seminar. Ensure that teachers and students have real-time discussions, actively participate in the classroom, and record students’ classroom performance [10].

However, Westlake University in China pays more attention to doctoral education, attracts global talents to join Westlake University through various ways, sets up independent laboratories according to different disciplines, and actively cooperates with enterprises, further promotes the combination of scientific research and products. It also can be summarized into four aspects.

1. Innovation of school management model: The size of the university is not the size of the building, but the size of the master. A total of more than 5000 applications have been received in China and abroad in 2020, and 68 outstanding scientists from 13 countries have joined Westlake University.

2. Innovation in cultivation methods: Adhere to limited disciplines, set up independent laboratories, and transform scientific research into results. Set up independent laboratories according to different scientific research teams, and actively connect with industries to directly transform scientific research projects into scientific research results.

3. Innovation in curriculums: Starting from cultivating the doctoral students. Starting from the cultivation of doctoral students, it has created a precedent for the cultivation of Chinese universities from doctoral students to undergraduates, hiring world-class scientists, and supporting the cultivation of top-notch innovative talents with first-class scientific research. The explorer of Chinese education takes “high starting point, small but precise, research-oriented” as the orientation of running a school.

4. Cultivate innovation in funding: Establish a foundation to promote diversified funding. The Westlake

Education Foundation’s fundraising activities for the general public have received positive responses from all walks of life. According to the official website of the Westlake Education Foundation, as of November 2018, more than 4,000 people have donated to the Westlake Education Foundation. In 2020, the top three in social donation income: Tsinghua University received 2.136 billion yuan, Peking University received 1.275 billion yuan, and Westlake University received 694 million donations.

As we know, the changes in these two universities indicate a new trend and new model of higher education reform, and Minerva University and Westlake University are very important promoters in this trend. Whether the two universities in this case can survive and thrive depends on whether they represent the foundation of the future of the university. However, the impact of these experimental institutions of higher education cannot be ignored, and perhaps these experimental institutions will not be able to survive or be assimilated into a more traditional and soft model to adapt to the social environment in which they are located, such as Westlake University in China. However, these new universities or institutions still have important value and significance, and the greatest significance lies in the fact that the new breakthrough in the concept of running a school in these new university models can give inspiration to the modern university model and become a useful supplement to the modern university. Although many new universities were founded to subvert the modern university model and break the current university organization, whether it is based on the stability of the organization itself or the value of the university organization itself, the modern university has not been replaced, just like the MOOC that was once all the rage, and may eventually become an effective supplement to the modern university model. However, the monopoly of universities as knowledge producers is weakening, and universities will no longer be the absolute protagonists in the process of knowledge production. It can be said that universities are constantly cultivating other subjects to replace themselves, and as more trainees graduate from universities that do not enter traditional knowledge production institutions as before, in order to consolidate their original academic community, they are divided into different institutions, such as governments, enterprises, other consulting institutions, etc., and from this point of view, universities seem destined to disappear or change into other models, such as the “first stop” institutional form.

V. CONCLUSION

After analyzing two cases of the University of Minerva in the United States and Westlake University in China, it was found that innovative universities will have a certain impact on higher education worldwide. Firstly, innovative universities will promote the transformation of education models from traditional teacher-taught models to student-centered learning models. This model encourages students to actively participate in learning, and acquire knowledge through practice and exploration,

rather than just passively receiving knowledge. Secondly, innovative universities will promote innovation in teaching methods, such as online education, reverse classroom, project-based learning, etc. These new teaching methods can improve students' learning efficiency and interest, while also better cultivating their innovative and critical thinking abilities. Thirdly, innovative universities will promote interdisciplinary research, break traditional disciplinary boundaries, and encourage cross disciplinary integration between different disciplines. This will help solve complex social problems while also cultivating talents with interdisciplinary knowledge and skills. Fourthly, innovative universities will establish close cooperation with enterprises, combining teaching with practice, and providing students with more practical opportunities. This will help improve the employment competitiveness of students and also provide the necessary talents for enterprises. Fifthly, innovative universities will promote the globalization of education, enabling students to have access to a wider world through international cooperation and exchange, enhancing their international perspective and cross-cultural communication skills.

CONFLICT OF INTEREST

The author declares no conflict of interest.

REFERENCES

- [1] H. Lin, "Research on the development model of innovative universities – Taking the University of Warwick in the UK as an

- example," *Global Education Outlook*, vol. 33, no. 9, pp. 52–55, 2004.
- [2] D. J. Xia, "Innovative university and university management system," *Jiang Hai Journal*, vol. 6, pp. 223–227, 2009.
- [3] M. Yang, "New university model under the condition of knowledge economy," *Research on Teacher Training*, vol. 4, pp. 2–6, 2001.
- [4] V. Chandler, *Building the Intentional University: Minerva and the Future of Higher Education*, Cambridge: MIT Press, 2017, pp. 193–202.
- [5] C. Burton, *Creating Entrepreneurial Universities*, New York: Cambridge University Press, 1988, ch. 4, pp. 156–167.
- [6] J. Li and X. Y. Tang, "Basic characteristics of innovative universities," *Contemporary Education Forum*, vol. 3, pp. 107–108, 2006.
- [7] W. Pang, "Research on the capability of innovative university derivative enterprises," *Journal of Harbin Institute of Technology*, vol. 4, pp. 57–61, 2014.
- [8] Minerva University academic programs. (2017). [Online]. Available: <http://www.minerva.edu/undergraduate-program>
- [9] L. Chen, "University of Minerva: Leading the future of higher education," *Comparison Educational Research*, vol. 38, no. 10, pp. 59–64, 2016.
- [10] T. Chen and Y. Deng, "How does technology lead learning—Minerva, USA promoting proactive learning strategies in universities and their inspiration," *Open Education Research*, vol. 24, no. 4, pp. 53–62, 2018.

Copyright © 2024 by the authors. This is an open access article distributed under the Creative Commons Attribution License ([CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)), which permits use, distribution and reproduction in any medium, provided that the article is properly cited, the use is non-commercial and no modifications or adaptations are made.