

มหาวิทยาลัยและความร่วมมืออุตสาหกรรมของมหาวิทยาลัยการแพทย์กวางตุ้งในมณฑลกวางตุ้ง
UNIVERSITY AND INDUSTRY COOPERATION OF GUANGDONG MEDICAL UNIVERSITY
IN GUANGDONG PROVINCE

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นักศึกษานิพนธ์โท สาขาวิชาภาวะผู้นำทางการบริหารการศึกษา คณะศึกษาศาสตร์ มหาวิทยาลัยกรุงเทพธนบุรี
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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์: (1) เพื่อศึกษาระดับความร่วมมือของมหาวิทยาลัยและอุตสาหกรรมของ Guangdong Medical University ในมณฑลกวางตุ้ง; และ (2) เพื่อเปรียบเทียบความร่วมมือมหาวิทยาลัยและอุตสาหกรรมของ Guangdong Medical University ในมณฑลกวางตุ้ง โดยพิจารณาจากการประเมินอาจารย์แยกตามระดับการศึกษาและประสบการณ์การทำงาน การวิจัยเป็นการวิจัยเชิงสำรวจ ประชากรเป็นอาจารย์ของมหาวิทยาลัยการแพทย์กวางตุ้งในมณฑลกวางตุ้ง รวมทั้งหมด 1,329 คน ขนาดกลุ่มตัวอย่างกำหนดโดยใช้ตาราง Krejcie และ Morgan และวิธีการสุ่มตัวอย่างอย่างง่าย จำนวนครูทั้งหมด 297 คน เครื่องมือที่ใช้ในการเก็บรวบรวมข้อมูล คือ แบบสอบถามระดับคะแนน 5 คะแนน สถิติที่ใช้ในการวิเคราะห์ข้อมูล ได้แก่ ความถี่ เปอร์เซ็นต์ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และการทดสอบที

ผลการวิจัย (1) เพื่อศึกษาระดับความร่วมมือของมหาวิทยาลัยและอุตสาหกรรมของมหาวิทยาลัยการแพทย์กวางตุ้งในมณฑลกวางตุ้งประกอบด้วยห้าประเด็นต่อไปนี้: ความร่วมมือหลักสูตร; ความร่วมมือด้านฮาร์ดแวร์ ความร่วมมือทางเทคนิค ความร่วมมือด้านการจัดการ การสื่อสารของนักศึกษาว่าทุกด้านอยู่ในระดับสูง และ (2) เพื่อเปรียบเทียบมหาวิทยาลัยครูและระดับความร่วมมือในอุตสาหกรรมใน Guangdong Medical University ในมณฑลกวางตุ้ง จำแนกตามระดับการศึกษาและประสบการณ์การทำงานไม่แตกต่างกัน

คำสำคัญ: มหาวิทยาลัยและความร่วมมืออุตสาหกรรม, มหาวิทยาลัยการแพทย์กวางตุ้ง, มณฑลกวางตุ้ง

Abstract

The objectives of this research were:(1) to study the level of university and industry cooperation of Guangdong Medical University in Guangdong Province; and (2) to compare university and industry cooperation of Guangdong Medical University in Guangdong Province, based on teacher assessment classified by educational level and work experience.

The research was a survey research. Population was teachers of Guangdong Medical University in Guangdong Province, a total 1,329 teachers. The sample size determined using the Krejcie and Morgan's table, and a simple random sampling method, total of 297 teachers. Instruments used for data collection were 5-point rating scale questionnaire. The statistics used for data analysis were frequency, percentage, mean, Standard Deviation and t-test.

The research results show that: (1) to study the level of university and industry cooperation of Guangdong Medical University in Guangdong Province includes the following five aspects: course cooperation; hardware cooperation; technical cooperation; management cooperation; student communication that all aspect are high level, and (2) to compare teachers' university and industry cooperation level in Guangdong Medical University in Guangdong Province, classify by educational level and work experience are not difference.

Keywords: University and Industry Cooperation, Guangdong Medical University, Guangdong Province

INTRODUCTION

In the early 1950s, university and industry research cooperation represented by Stanford University ushered in the first golden era in the history of development in the United States. Since then, the practice of university and industry research cooperation has continuously emerged worldwide, playing an important role in promoting technological innovation and progress in various countries. China has gradually explored and studied the forms, channels, and systems of industry school cooperative education, accumulated rich experience, and achieved certain results. At the same time, it should also be recognized that there are still some practical difficulties and problems in university and industry research cooperation in China's higher vocational education, which seriously hinder the development of China's higher vocational education and economic society. After the establishment of the People's Republic of China, especially since the 1980s, guided by the idea of combining education with productive labor, and drawing on advanced foreign experience, extensive cooperation between industry and education was carried out. In recent years, under the guidance of the government, enterprises and higher education institutions have actively operated, organized, and implemented various forms of university and industry cooperation, such as expert consultation, technology transfer, joint construction of research and development institutions, and joint establishment of high-tech entities. Gradually, a model of university and industry cooperation that complements advantages, shares risks, benefits, and common development has been formed, effectively promoting the economy. The reform of the technology and education system has played an important role in promoting the close integration of technology and economy. In 2005, China's pilot work on university and industry cooperation was first launched in Guangdong Province. According to the development of the knowledge age, the cycle of production and application of technical products is constantly shortened. The pilot work of national provincial, university and industry cooperation was first carried out in Guangdong. After years of practice, the total amount of scientific research cooperation between regional universities and enterprises continues to increase, and the cooperation mode continues to innovate. At present, there is a frequent disconnect between scientific research activities and economic application in the design and institutional arrangement of university and industry research cooperation mechanisms.

Research Objectives

1. To study the level of university and industry cooperation of Guangdong Medical University in Guangdong Province.
2. To compare university and industry cooperation of Guangdong Medical University in Guangdong Province, classified by educational level and work experience.

Research Framework

In this research, the researcher has synthesized the views of academics who have the corresponding concept summarize from content analysis, define a conceptual framework, as shown in Table 1.1

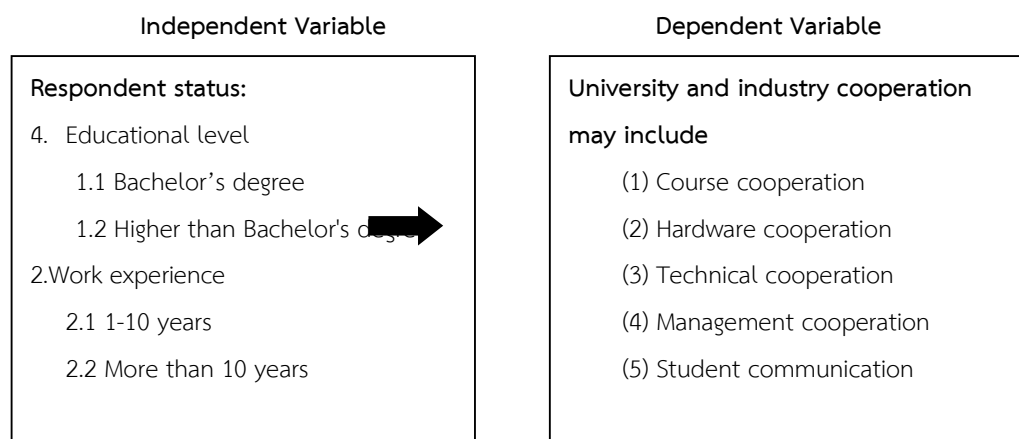


figure 1. Research Framework

Methods of conducting research

Population: The population were 1,329 teachers at Guangdong Medical University, Guangdong Province, in the 2022 academic year.

Sample: The sample consisted of 297 teachers from the Guangdong Medical University. The sample size was determined by the table of Krejcie & Morgan (1967) and was obtained by sample random sampling. Compare the proportion of the population in each teacher, and obtained it by simple random sampling.

Research instruments

This research title was university and industry cooperation of Guangdong Medical University in Guangdong Province. The objectives of the study were: (1) to study the current situation of university and industry cooperation of Guangdong Medical University in Guangdong Province; and (2) to compare university and industry cooperation of Guangdong Medical University in Guangdong Province, classified by educational level and work experience.

The analysis result of the data presented by the investigator is presented in the following order:

- 1 Symbols used in the study
2. The process of presenting the data analysis results
3. Data analysis results

Data analysis results

Part 1: General data analysis results of the samples

Table 4.1 General Information of the Samples:

(n=297)

General Information	Number	Percentage
2. Educational Level		
1.1 Bachelor's degree	63	21.21
1.2 Higher Bachelor's degree	234	78.79
Total	297	100
2. Work Experience		
2.1 < 10 years	175	58.92
2.2 ≥ 10 years	122	41.08
Total	297	100

From Table 4.1 was found that the study sample of university and industry cooperation of Guangdong Medical University in Guangdong Province has higher bachelor's degree, with 234 teachers accounting for 78.79%, and 122 teachers having more than 10 years of working experience, accounting for 41.08%.

Part 2: Results of assessment of university and industry cooperation structure of Guangdong Medical University in Guangdong Province.

The perspectives of university and industry cooperation of Guangdong Medical University in Guangdong Province is studied, as shown in Table

Table 4.2 The overall and various aspects organization of university and industry cooperation of Guangdong Medical University in Guangdong Province.

(n=297)

No.	University and industry Cooperation of Guangdong Medical University	($\bar{X}$)	S.D.	Level
1	Course cooperation	4.64	0.64	highest
2	Hardware cooperation	4.67	0.62	highest
3	Technical cooperation	4.65	0.65	highest
4	Management cooperation	4.45	0.77	high
5	Student communication	4.44	0.79	high
	Total	4.57	0.69	highest

Table 4.2 was found that overall university and industry cooperation level of Guangdong Medical University in Guangdong Province is relatively highest level ($\bar{X}$ = 4.57). Considering each items, it was found that three items were at a highest level, and two items were at a high level. Hardware

cooperation had the highest mean ($\bar{X}$ = 4.67), followed by Technical cooperation ($\bar{X}$ = 4.65), and Student communication had the lowest mean ($\bar{X}$ = 4.44). The data difference in Student communication is the largest (S.D.=0.79), and minimize data differences in Hardware cooperation (S.D.=0.62).

Part 3 : Comparison of university and industry cooperation structure of Guangdong Medical University in Guangdong Province. Classicized according to educational level and work experience.

Table 4.8 Comparison of university and industry cooperation structure of Guangdong Medical University in Guangdong Province. Classicized according to educational level.

(n=297)

Comparison of university and industry cooperation structure of Guangdong Medical University in Guangdong Province.	Educational Level				t	Sig.
	Bachelor		Higher Bachelor			
	($\bar{X}$)	S.D.	($\bar{X}$)	S.D.		
1.Course cooperation	4.66	0.54	4.63	0.40	0.38	0.70
2.Hardware cooperation	4.47	0.77	4.71	0.38	-2.46	0.16
3.Technical cooperation	4.44	0.75	4.70	0.36	-2.71**	0.00
4.Management cooperation	4.52	0.54	4.43	0.50	1.33	0.18
5.Student communication	4.66	0.52	4.38	0.58	3.77**	0.00
Total	4.55	0.43	4.57	0.31	-0.36	0.72

Table 4.8 t-test, there is not difference in the statistical results of teachers' university and industry cooperation level with different educational level in Guangdong Medical University in Guangdong Province.

There is have difference in the statistical results of technical cooperation and student communication level with different educational level in Guangdong Medical University in Guangdong Province.

Table 4.9 Comparison of university and industry cooperation structure of Guangdong Medical University in Guangdong Province. Classified according to work experience.

Comparison of university and industry cooperation structure of Guangdong Medical University in Guangdong Province.	Work Experience				t	Sig.
	< 10 years		≥10 years			
	($\bar{X}$)	S.D.	($\bar{X}$)	S.D.		
1.Course cooperation	4.61	0.41	4.67	0.46	-1.19	0.23
2.Hardware cooperation	4.70	0.43	4.61	0.58	1.53	0.13
3.Technical cooperation	4.69	0.42	4.58	0.54	1.94	0.54
4.Management cooperation	4.46	0.50	4.44	0.52	0,23	0.82
5.Student communication	4.23	0.62	4.73	0.32	-8.90**	0.00
Total	4.54	0.32	4.60	0.36	-1.68	0.94

Table 4.9 t-test, there is not difference in the statistical results of teachers' university and industry cooperation level with different work experience in Guangdong Medical University in Guangdong Province.

There is have difference in the statistical results of student communication level with different work experience in Guangdong Medical University in Guangdong Province.

Discussion

Discussion on the Research Results of objective 1

1. The impact of course cooperation on university and industry cooperation. Course cooperation is overall at a high level in cooperation level. The course cooperation is the core content of teaching and the carrier of any form of education implementation. So the teacher's emphasis on course cooperation is very high, and the level of course cooperation is relatively high level. It is necessary to follow the knowledge system, adapt to the logical system of theoretical knowledge, and adapt to the logical system composed of empirical knowledge. The research finding was in accordance with the research of Xu Feng (2016) argue curriculum design based on the cooperation education model of university and industry should meet the needs of current economic and social development, adapt to industrial structure adjustment and scientific and technological development.

2. The impact of hardware cooperation on university and industry cooperation. Hardware cooperation is overall at a high level in cooperation level. In university and industry cooperation, the provision of hardware is the foundation of the foundation, so it will be a high standard reflected in the

level of hardware cooperation. Universities and enterprises will cooperation with each other on their hardware facilities, establish a collaborative education project framework between university and industry cooperation, promote universities to fully utilize local basic education resources and conditions. These university researchers have great motivation for industry university cooperation, and the motivation and results are linear positive correlation. The findings were in the same direction as those of the researcher of Cheng Baozhi, Xu Quan, and Chen Liyong (2019) believe that enterprises provide experimental and practical bases for subject teaching reform in cooperative universities, organize research projects, and commission targeted training for cooperative majors in universities.

3. The impact of technical cooperation on university and industry cooperation. Technical cooperation is overall at a high level in cooperation level. Technical cooperation is closely related to hardware cooperation, and it determines the technical and vision height of university and industry cooperation. High technological cooperation can attract more excellent universities and enterprises. So the level of technical cooperation in the outcome will reach a very high level. Then university researchers may not necessarily lead to a decrease in the quality of academic research in universities due to their in-depth understanding of real production needs. The research finding was in accordance with the researcher of Qin Su (2021) support that the innovation ability, resources, and knowledge acquisition skills of university researchers can be improved, and inspiration for academic creation through their contact with enterprises. Specifically, the longer the duration of the cooperative relationship, the greater the positive impact on academic innovation.

4. The impact of management cooperation on university and industry cooperation. Management cooperation to teachers' university and industry cooperation level of Guangdong Medical University in Guangdong Province overall a high level. Management cooperation is the core project of an industry university cooperation project. The level of management cooperation in the results is also very high. The decision of the enterprise to engage in university and industry cooperation with university or college on a certain major, especially the level of deep level university and industry cooperation, it is the result of the joint action of the specialized human capital and market demand of the major. The research finding was in accordance with the researcher of Wu Bing (2014) proved that universities should not only supervise the cooperation behaviour of R&D personnel within the campus, but also strengthen communication between universities to establish a "university and industry cooperation strategic alliance", achieving a win-win situation for universities.

5. The impact of student communication on university and industry cooperation. Student communication is overall at a high level in cooperation level. Student communication ensures the smoothness of university and industry cooperation. Most cooperation related to entrepreneurial internships must consider student factors, so the survey results show that the level of student communication among middle school students is very high. Utilizing simulated practical teaching methods to effectively train students' innovative thinking and entrepreneurial practical abilities, cultivate their spirit of innovation and entrepreneurship, and better carry out student employment work. The

research finding was in accordance with the researcher of Xu Dongdong (2014) argue the high quality talent supply of the school is conducive to further improving the employment quality and satisfaction of students, and provides a strong guarantee for promoting the construction of university and industry cooperation

Recommendations of research

University in course cooperation could increase investment in professional training bases, establish relationships with enterprises, and enable students to directly engage in work practice. University reasonably coordinate the arrangement of theoretical courses and skill operations in course cooperation. Building a teaching system that is compatible with university and industry cooperation, schools should adapt to the production needs of enterprises and changes in production technology. University and local government in hardware cooperation could increase the fundraising efforts for education funds and broaden the channels for fundraising education funds. University establish a pre investment risk assessment system in technical cooperation, with specialized personnel conducting risk assessments on investment capital and the operation of investment targets. University and local government in management cooperation emphasize the construction of regional university and industry cooperation platforms. Building a platform for university and industry cooperation with local characteristics, so that both parties can fully utilize their respective advantages and resources to discuss cooperation mechanisms. This research is based on course cooperation, hardware cooperation, technical cooperation, management cooperation, student communication in university and industry cooperation, which can be expanded later.

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