

Deep Integration of Innovation and Entrepreneurship Education and Automobile Maintenance Professional Education under the New Curriculum Concept

Charith Perera*

University of Bologna, Italy

**corresponding author*

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Abstract: With the continuous development of social development, China's automobile manufacturing industry has achieved certain development. With the rise of the automotive industry, the automotive maintenance profession has emerged as the times require, laying the foundation for the long-term development of the automotive industry. In response to the development needs of the industry and the emergence of the shortage of social talents, the state has carried out a major in vehicle maintenance technology at the vocational education institute. This paper will start with the background of such development, analyze the status quo of innovation and entrepreneurship of automobile maintenance majors, and propose that the integration of production and education is an incubator for the cultivation of innovative entrepreneurs. Relying on the integration of production and education, colleges and universities can start from three aspects: mechanism, carrier and method, improve students' ability of innovation and entrepreneurship in an all-round way, and carry out the exploration of the cultivation of innovative and entrepreneurial ability of automobile maintenance majors based on the integration of production and education.

1. Introduction

With the continuous deepening of education reform, the application-oriented talent training mechanism oriented to market demand emphasizes the inevitability and importance of education reform and development. Automobile maintenance major is an important specialty of colleges and universities, with teaching characteristics that focus on theory and practice. At present, there are still many problems in the teaching of automobile maintenance, which makes us very worried about the quality of professional teaching. In this regard, in the new historical period, in the process of deepening the reform of education, we must earnestly grasp the teaching reform of the automobile maintenance profession. We should always take the "student-oriented" concept as the guide,

practice the talent training mechanism for automobile maintenance professional innovation and entrepreneurship, and gradually deepen the teaching reform of the automobile maintenance profession with the aim of cultivating comprehensive and applied talents. In order to meet the needs of today's society for professional specifications of automobile maintenance, professional education is closely integrated with production services and social services to improve students' employment and development capabilities, and to cultivate innovative and comprehensive talents combining theory and practice.

2. The Connotation of Innovation and Entrepreneurship Education

More and more scholars are beginning to realize that innovation and entrepreneurship education should be an independent new concept. Scholars have made some discussions on their connotations, but they have not revealed their essence. They are still in the "pre-concept" stage of the formal establishment of the concept of innovation and entrepreneurship education. At this stage, an important development is to focus on and discuss the relationship between innovation education and entrepreneurship education. It is clear that innovation education and entrepreneurship education should be a whole. This whole is innovation and entrepreneurship education. For example, Professor Lei Jiasu, who has been engaged in entrepreneurship education for a long time and made important contributions to the concept of innovation and entrepreneurship education, believes that "from the perspective of the relationship between innovative education and entrepreneurship education, the two goals are consistent and aim to train students' spirit of innovation and practical ability; the functional role of the two is the same effect, entrepreneurship education makes the innovation education into the requirements of entrepreneurial quality, innovation education focuses on the overall grasp of human development, entrepreneurship education focuses on how to achieve people "The self-worth." He also stressed: "As far as the current national conditions are concerned, we need to integrate innovation education and entrepreneurship education as a whole to accelerate the development of innovation and entrepreneurship education."

Some researchers believe that: "Innovative education and entrepreneurial education content structure are mutually integrated and complement each other. Innovation is the foundation of entrepreneurship, and the effectiveness of innovative education can only be tested through the entrepreneurial practice of the talents it cultivates in the future; entrepreneurship is the carrier and expression of innovation. The success or failure of entrepreneurship depends on the solid foundation of innovation education; innovation education focuses on the grasp of human development, and entrepreneurship education focuses on how to realize human self-value; the mutual promotion and mutual restraint are inseparable dialectical unity. Therefore, combining innovation education with entrepreneurship education is called innovation and entrepreneurship education."

More scholars try to define the connotation of innovation and entrepreneurship education. The basic way is to try to combine innovation education and entrepreneurship education into a "whole". For example, some researchers believe that: "The innovation and entrepreneurship education we now understand and advocate refers to the development and improvement of the basic quality of college students' innovation and entrepreneurship. Through innovation and entrepreneurship education, it is necessary to cultivate the knowledge, ability and psychological quality that university students must possess to establish innovative thinking and engage in entrepreneurial practice activities, cultivate talents with innovative thinking and pioneering ability, let them become the builders and successors of socialism with Chinese characteristics through innovation and

entrepreneurship education.

3. Current Status of Automobile Maintenance Teaching

3.1. Teachers Have Narrow Knowledge and Low Operational Skills

The automobile maintenance profession is a professional with a wide range of knowledge, involving mechanical, electrical, electronic, materials, processing and other aspects. As a teaching teacher of automobile maintenance, it requires extensive theoretical knowledge, certain operational skills and practical experience. If professional teachers are out of production practice for a long time, they will inevitably face a state of backward knowledge and skills.

3.2. The Teaching Content and Teaching Objectives Are Not Clear, and the Teaching Focus Is Not Reflected

Since the car repair includes sub-work, such as mechanic repair, electrician, body repair, spray, etc., and each type of work can be independent and connected to each other. From the training point of view, it is impossible to complete training of all subjects in such a short time. . Students and parents generally want to learn more comprehensive skills. In the course of setting up courses, colleges and universities also cater to the appetite of students and parents. When setting up courses, they emphasize “more” and neglect “fine”.

3.3. Traditional Teaching Classrooms Attach Importance to Theory and Contempt for Practice

So far, traditional classroom teaching is still the main form of teaching in vocational colleges, and it is impossible to complete the teaching tasks of automobile majors by relying on classroom teaching. The classroom teaching mode of "Blackboard + Pictures" is not only abstract, boring, difficult to understand, but also no real effect on improving students' practical ability and can't achieve the purpose of teaching.

4. Analysis of Problems in the Teaching of Automobile Maintenance

Automobile maintenance is an important profession of education and has the characteristics of practicality. In the actual professional teaching of colleges and universities, there are still many teaching problems, especially the problems of single teaching mode and lack of teaching integration, which greatly affect the quality of automobile maintenance professional teaching. Therefore, in the process of promoting the development of automotive maintenance professional teaching, it is first necessary to clearly understand the problems in teaching.

4.1. The Student's Subject Status is not Highlighted, and the Practice Teaching is not Carried out in Depth

The automotive maintenance profession emphasizes the same important teaching model of theory and practice. In the actual teaching, the phenomenon that teachers are the main subject of teaching is more obvious, whether in the classroom theory teaching or in the actual training, teachers can learn how to learn and how to do students, and lack the independent learning and practice under the subjective status of students. At the same time, the theoretical and practical

teaching methods are not balanced, and there is a disconnect between theory and practice. There is often a disconnect between theory and skill training, and skill training is obviously lagging behind. In this way, the teaching situation of "the student theory is not well learned, the practical skills are not exercised" appears, and the quality of the automobile maintenance professional teaching is worrying.

4.2. Teaching Method Is Single, It is Difficult to Stimulate Students' Interest

The cultivation of professional talents for automobile maintenance is guided by market demand and emphasizes the cultivation of students' employability. At present, although colleges and universities are widely used in the teaching of automobile maintenance, multimedia teaching has been widely applied, but the status quo of single teaching has not changed. The teachings that teachers are very tired and the students are boring are more prominent. Multimedia has become a universal teaching tool for teachers' teaching. One-way teaching output has gradually weakened the interest of students in learning. There is a sense of exhaustion and boredom in learning, and lack of initiative in learning.

4.3. Lack of Teaching Integration, the Actual Teaching Effect Is Not Ideal

The integrated teaching mode is an important direction for the current education and teaching reform of automobile maintenance. At present, the integrated teaching mode of automobile maintenance profession emphasizes the integration of theory and practical teaching based on modern educational technology. From the actual situation, due to the influence of many factors such as limited teaching resources and restrictions on school conditions, colleges and universities are lacking in the construction of integrated teaching mode. On the one hand, teachers lack professional knowledge, and there is great incompatibility in theory and practice teaching. On the other hand, education has shortcomings. The realization of integrated teaching mode still takes time. It is a process of teaching reform and development, which requires the active input of resources from both human and material resources.

5. Investigation on the Status Quo of Innovation and Reform of Automobile Inspection and Maintenance Professional Technicians

4.1. Purpose of the Survey

Through the questionnaire survey the main measures for the innovation and reform of automotive inspection and maintenance professionals, mainly around the satisfaction of the current training model and the recommendations of the current training model, and through the analysis of the results to innovate and reform the automotive inspection and maintenance professional and technical personnel The main measures to provide relevant information basis.

4.2. Questionnaire Survey Development Steps

(1) Establishment of the survey site

This survey is aimed at the main measures for the innovation and reform of automobile inspection and maintenance professionals. In order to reduce the difficulty of carrying out survey activities, this survey is mainly carried out in this city, in order to facilitate the development of

survey activities and ensure that enough survey results are done. Data is used as support, so it is determined that the location of the survey is the automobile inspection and maintenance major of the city's colleges and universities, and 3 colleges and universities with different reputations are randomly selected for the survey. Since this activity is mainly aimed at colleges and universities in the city, the results are not universal. Therefore, the results of this time cannot explain the main measures for the innovation and reform of automobile inspection and maintenance professionals in other regions.

(2) Determination of relevant parameters

The establishment of the number of questionnaires is the most basic step of the survey activity, because the number of questionnaires is related to the validity of the survey results. If the number of questionnaires is set too low, the results of this survey will be questioned because the base of the data is not large enough, and the results of the survey are not large enough. It is universal. The number of questionnaires is set too high, and the difficulty of the questionnaire survey activity increases. Therefore, the number of questionnaires this time is set to 200 according to the minimum sample size proposed by the experts and the technical conditions of this survey.

(3) The distribution process of the questionnaire

The issuance of this questionnaire is mainly divided into two stages. The first is the issuance of the questionnaire, and the second is the recovery of the questionnaire. In order to ensure that the results of this survey have greater authenticity, the recovery of the questionnaire will be completed after the questionnaire is issued. Recovered in the next six days, given time to fill out the questionnaire completely. 189 questionnaires were recovered, and the recovery rate this time was 95%.

4.3. Data Processing

(1) When performing correlation analysis on the collected data, the data must be classified and sorted. This will not only increase the utilization rate of the data, but also promote cross-data analysis. Therefore, the main consideration is the completeness and accuracy of the data. First of all, about data integrity. When the questionnaire is delivered to the sample subject for completion and collection, some sample items are arbitrarily completed, or their selection cannot be completed, which will cause some data sorting problems, but because the retrieved data accounts for the majority, So deleting the lost data means deleting the lost data. Secondly, the precision and accuracy of the data. When conducting an audit, the main consideration is to check whether these data are inconsistent with other choices, or the principle that conflicts with it should be selectively removed but retained as much as possible.

(2) The main meaning of a correlation relationship in the objective correlation analysis method is to generally refer to a certain relationship between various objective phenomena, but they are not strictly corresponding to each other in quantity. There are two main forms of determining the relevant properties of objective phenomena here: qualitative analysis and quantitative analysis. The main purpose of qualitative analysis is to rely on the scientific theoretical knowledge and practical experience of the researcher to accurately determine whether there are correlations between various objective phenomena. Or what kind of factor, the subjectivity of this analysis method is relatively strong. Among them, the commonly used calculation formula is expressed as:

$$r = \frac{S^2_{xy}}{S_x S_y} = \frac{\sum(x - \bar{x})(y - \bar{y})/n}{\sqrt{\sum(x - \bar{x})^2/n} \sqrt{\sum(y - \bar{y})^2/n}} \quad (1)$$

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}} \quad (2)$$

6. Analysis of Survey Results

6.1. Satisfaction with the Current Reform Measures

The questionnaire is used to investigate students' satisfaction with the current reform measures. The results of the survey are shown in Table 1:

Table 1. Satisfaction with the current training model

	A college	B college	C college
Dissatisfied	42%	44%	43%
general	33%	32%	34%
satisfaction	25%	24%	23%

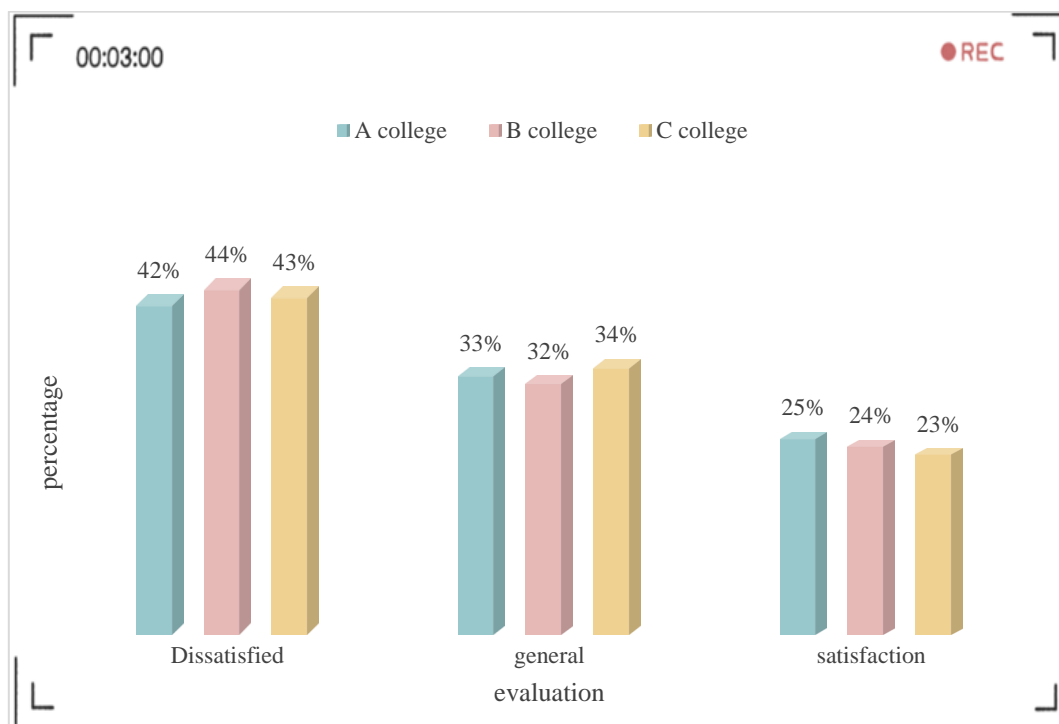


Figure 1. Satisfaction with the current training model

It can be seen from Figure 1 that the students are not satisfied with the current innovation and reform of automotive inspection and maintenance professional and technical personnel. The dissatisfied people accounted for more than 42%, and the average people accounted for about 32%. From this it appears that the reform of the current training model is necessary.

6.2. Suggestions for the current training model

Through the questionnaire survey of students and teachers' suggestions on the reform of the

training model, the results of the survey are shown in Table 2:

Table 2. Suggestions for the current training model

	A college	B college	C college
Teaching is determined by post, academic work alternates	45 %	46%	48%
Cooperation effectiveness needs to be improved	36%	33%	32%
Guidance to students in a timely manner	19%	21%	20%

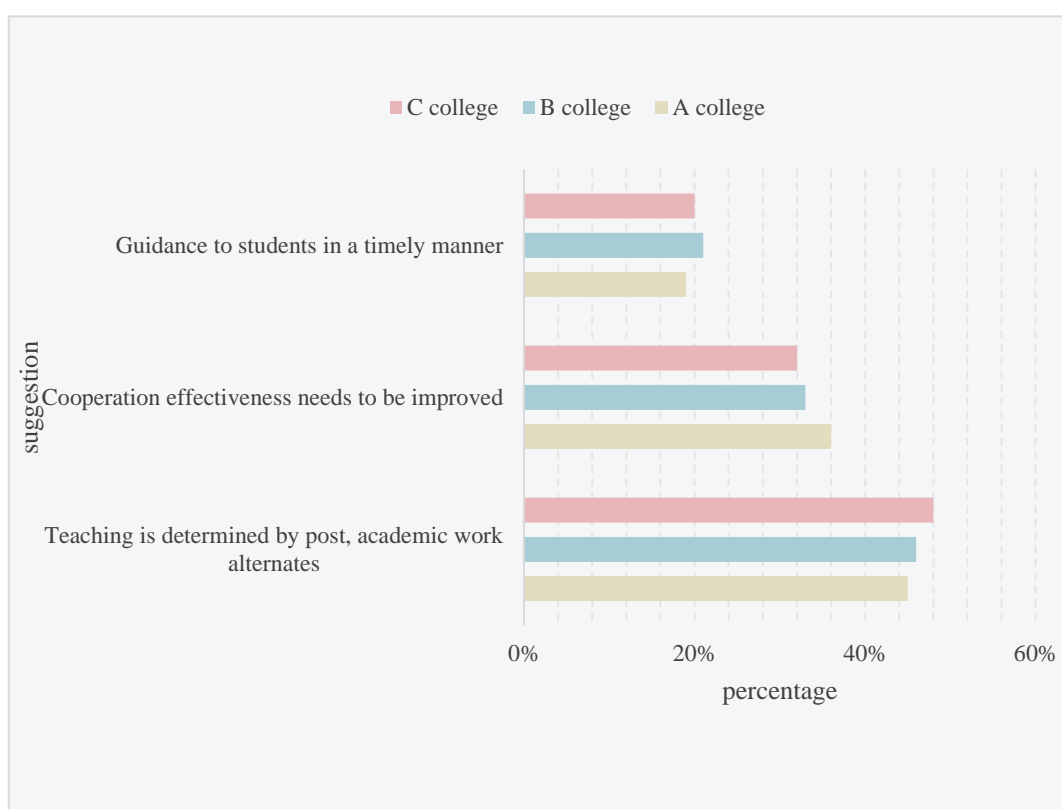


Figure 2. Suggestions for the current training model

It can be seen from Figure 2 that more than 45% of students and teachers in the suggestions given believe that schools should train talents based on the needs of the enterprise, rather than divorce the actual talent needs and emphasize theory rather than practice.

7. College Automobile Maintenance Professional Teaching and Innovation and Entrepreneurship Deep Integration Reform Measures

7.1. Update the Teaching Mode and Implement the Teaching of Integration of Theory and Practice

As far as the teaching mode is concerned, in addition to paying attention to the teaching materials, the teachers of the automobile maintenance profession should pay attention to the students, classrooms and equipment, and understand the objects and teaching environment that need to be guided. The teaching mode can no longer follow the theory of the first and then practice the way that the two are out of touch with each other. Instead, the mode of integration of theory and practice should be adopted so that the two can intersperse and synchronize. In teaching activities, teachers should try to give students a dominant position and guide themselves in an auxiliary role. In this way, students' self-learning, independence and creativity can be cultivated to a greater extent.

7.2. Adopting Multiple Forms to Strengthen the Teaching of Automobile Maintenance Theory

Theoretical teaching is the basis of practical teaching. This is not only the basis for learning professional skills, engaging in professional work, promoting the comprehensive development of students' moral and intellectual development, but also the necessary conditions for the formation of students' future development. However, in view of the current quality and psychological state of students, the traditional teaching method is adopted, students are tired of learning, and even truancy occurs. There is a fundamental difference between students and apprentices. He must have solid practical skills and a certain theoretical foundation. To this end, certain theoretical teaching is indispensable. The use of multimedia teaching can increase the dynamics of teaching, increase students' perceptual knowledge, and stimulate students' interest in learning and enthusiasm for learning.

7.3. Deep Integration of Production and Education, Constructing the Theory of Innovation and Entrepreneurship

The framework integrates innovation and entrepreneurship education for all students and integrates into the whole process of talent cultivation. Strengthen the construction of the curriculum system of innovation and entrepreneurship education, effectively incorporate innovation and entrepreneurship education into the teaching plan and credit system of professional education and cultural quality education, and establish a multi-level, three-dimensional innovation and entrepreneurship education curriculum system based on the "Introduction to Automobile Career", "Career Planning", "Employment and Entrepreneurship Guidance", "Conspiracy Psychology" and "Marketing" Courses. At the same time, we can also offer a series of entrepreneurship education courses such as "Entrepreneurship", "Venture Capital", and "Creativity Engineering" to broaden students' knowledge and enhance their humanities.

7.4. Set Up a Bridge between Theory and Practice

Focusing on the automotive technology service and marketing as the main line and carrying out practical activities are important means to test the transformation of professional theory into service capability. Regularly organize students to visit and study in the 4S shop of the automobile, or carry

out summer social practice activities in the automobile service chain store, learn technology in the first-line production service, manage the internal management of the enterprise, and strengthen the grasp of management work in the process of student entrepreneurship. At the same time, entrepreneurship projects such as auto beauty shop startup, private custom car service, and micro water door car wash will be stationed in the campus business incubator base and high-tech zone industrial base, so the entrepreneurial ability will be gradually improved in the process of entrepreneurship, and innovative and entrepreneurial auto talents will be cultivated.

7.5.Strengthen School-Enterprise Cooperation and Improve the Effect of Practical Teaching

In order to get a job after graduation, all students must be trained during the study period, so that students have the opportunity to get in touch with the actual production process of the car repair enterprise and understand the car repair process. Therefore, it is necessary to build a stable training base outside the school. The construction of the off-campus training base must establish a good cooperative relationship with the automobile maintenance enterprise and strive for strong support from the enterprise. Engage the company's engineering and technical personnel and department managers to conduct regular or irregular lectures to enable students to deepen their understanding of actual production. The teachers of the school should go deep into the off-campus internship enterprises, often understand the situation of students' internships, solicit opinions from enterprises on running schools, and provide a basis for the reform of practical teaching.

8. Summary

Innovation and entrepreneurship have become the development trend of this era. To implement the education front, we must vigorously cultivate compound talents with innovative and entrepreneurial capabilities. Exploring new ideas for the cultivation of innovative and entrepreneurial ability of automobile maintenance majors based on the integration of production and education, enriching the way of training innovative and entrepreneurial talents. However, innovation and entrepreneurship education is a systematic project. How to carry out the deep integration of production and education in innovation and entrepreneurship education needs further exploration and practice in the future.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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