

Exploring the Quality of Innovation and Entrepreneurship Teaching at China Higher Education Institutions Using Stufflebeams's Cipp Model: A Case Study

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ABSTRACT

The quality evaluation of innovation and entrepreneurship (I&E) in the education sector is achieving worldwide attention as empowering nations with high-quality talents is quintessential for economic progress. China, a pioneer in the world market in almost all sectors, have transformed its educational policies and incorporated entrepreneurial skills as a part of its education models to further catalyst the country's economic progress. Innovation is the capacity to perceive connections, identify possibilities, and capitalise on them. Entrepreneurship means the creation of new economic activities and organisations and the transformation of existing ones. Quality evaluation involves monitoring progress towards desired goals and objectives. There is a frequent problem: lesser model exploration research on professional education and practical education, which may result in poor quality I&E education. The objectives of this research were to explore the quality of innovation and entrepreneurship teaching at higher education institutions using Stufflebeam's CIPP evaluation. Participants in the study include the director of the innovation and entrepreneurship education department, the head of the administrative function department, and instructors from the Changzhou Institute of Industrial Vocational Technology's innovation and entrepreneurship education programs. The CIPP Evaluation Model was utilised to conduct qualitative research. Data were gathered via structured interviews. The data were analyzed using thematic analysis based on the conceptual framework of Stufflebeam's CIPP evaluation model. The results of the study show that the quality of innovation and entrepreneurship education in higher vocational colleges is generally good; there are sound systems and organizational structures, and the colleges are able to provide adequate resources. Additionally, the curriculum and extracurricular activities of innovation and entrepreneurship education are well-executed, and the higher vocational colleges have received numerous accolades in innovation and entrepreneurship education. However, there is still a need for improvement in class size, teacher development, and the efficiency of extracurricular activities.

Keywords: CIPP model, entrepreneurship education, exploring, innovation and quality evaluation.

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Penerokaan Kualiti Pengajaran Subjek Inovasi dan Keusahawanan di Institusi Pengajian Tinggi China Menggunakan Model Cipp Stufflebeam: Satu Kajian Kes

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ABSTRAK

Penilaian kualiti inovasi dan keusahawanan (I&E) dalam sektor pendidikan mendapat perhatian dunia kerana memperkasa negara yang mempunyai bakat berkualiti tinggi adalah penting untuk kemajuan ekonomi. China, perintis dalam pasaran dunia dalam hampir semua sektor telah mengubah dasar pendidikannya dan menggabungkan kemahiran keusahawanan sebagai sebahagian daripada model pendidikan mereka untuk terus memacu kemajuan ekonomi negara. Inovasi ditakrifkan sebagai keupayaan untuk melihat hubungan, mengenal pasti kemungkinan, dan memanfaatkannya. Keusahawanan bermaksud penciptaan aktiviti dan organisasi ekonomi baharu serta transformasi yang sedia ada. Penilaian kualiti melibatkan pemantauan kemajuan ke arah matlamat dan objektif yang diinginkan. Terdapat masalah yang kerap berlaku: penyelidikan penerokaan model yang lebih rendah mengenai pendidikan profesional dan pendidikan praktikal, yang mungkin mengakibatkan pendidikan I&E yang berkualiti rendah. Objektif penyelidikan ini adalah untuk meneroka kualiti pengajaran inovasi dan keusahawanan di institusi pengajian tinggi menggunakan penilaian CIPP Stufflebeam. Peserta kajian termasuk pengarah jabatan pendidikan inovasi dan keusahawanan, ketua jabatan fungsi pentadbiran, dan pengajar dari program pendidikan inovasi dan keusahawanan Institut Teknologi Vokasional Changzhou. Model Penilaian CIPP telah digunakan untuk menjalankan penyelidikan kualitatif. Data dikumpul melalui temu bual berstruktur. Data dianalisis menggunakan analisis tematik berdasarkan kerangka konsep model penilaian CIPP Stufflebeam. Hasil kajian menunjukkan kualiti inovasi dan pendidikan keusahawanan di kolej vokasional tinggi secara amnya adalah baik; terdapat sistem bunyi dan struktur organisasi, dan kolej dapat menyediakan sumber yang mencukupi. Selain itu, kurikulum dan aktiviti ekstrakurikuler inovasi dan pendidikan keusahawanan dilaksanakan dengan baik, dan kolej vokasional yang lebih tinggi telah menerima banyak anugerah dalam pendidikan inovasi dan keusahawanan. Walau bagaimanapun, masih terdapat keperluan untuk penambahbaikan dalam saiz kelas, pembangunan guru, dan kecekapan aktiviti kokurikulum.

Kata Kunci: Model CIPP, inovasi, pendidikan keusahawanan, penerokaan, dan penilaian kualiti.



1.0 Introduction

Innovation and entrepreneurship education is one of the world's fastest-growing topic areas, garnering increased recognition for its capacity to connect contemporary business operations with academic ideas (Ratten & Usmanij, 2021). In 2010, China's Ministry of Education issued the Recommendations on Vigorously Promoting Innovation and Entrepreneurship Education in Higher Education Institutions and Independent Entrepreneurship of College Students, in which the term "innovation and entrepreneurship education" appeared for the first time in an official education document and corresponding educational initiatives were proposed (Pan, 2022). This is the state's perspective of encouraging higher education institutions to carry out innovation and entrepreneurship education and promoting the quality of higher education (Xu, 2021). Deepening the reform of innovation and entrepreneurship education in higher education institutions is an urgent need for the state to implement the innovation-driven development strategy" to promote the quality, efficiency and upgrading of the economy, and it is an important initiative to promote the comprehensive reform of higher education and higher education graduates' higher-quality entrepreneurship and employment (Pan, 2022) Innovation and entrepreneurship education has a core value orientation of cultivating college students' spirit of innovation, entrepreneurial awareness, and entrepreneurial ability (Tang & Chen,2021). Innovation and entrepreneurship education is an educational model that promotes the enhancement of college students' innovation and entrepreneurship awareness through the cultivation of innovation ability, thus changing the students' cognitive way and playing a certain role in promoting the cultivation of their innovation ability. Entrepreneurship is the carrier of innovation, innovation is the orientation of entrepreneurship, innovation and entrepreneurship education is the deep integration between the two, through this education mode, for the country, for the society to cultivate high-quality talents with innovative thinking and strong entrepreneurial ability (Li, 2023). Strengthening innovation and entrepreneurial education is an essential effort for promoting comprehensive higher education reform in China and improving talent training quality. Evaluation is the process of gathering data to establish the overall impact of education, therefore determining its worth and providing a foundation for development (Lackéus, 2020). Evaluation is the process of determining the extent to which goals have been accomplished. It entails evaluating both achievement and progress (Aziz, 2018).

Among the various evaluation methods, the CIPP model is particularly useful and recommended for educational evaluation. The CIPP model of educational evaluation, introduced by Stufflebeam in 1983, consists of four elements: C-Context, I-Input, P-Process, and P-Product. This approach is valuable for assessing the quality of education. Context relates to the objective, purpose, and background of education, while input refers to the materials, time, and human resources required for innovation and entrepreneurship education. Process encompasses all activities involved in education delivery, whereas Product focuses on education's quality, relevance, and ability to benefit society (Stufflebeam, 2003). According to the authors, the CIPP model may be successfully used to assess educational quality. The context relates to the background, history, ambitions, and objectives of the creative and entrepreneurial education being pursued. Input refers to the material and human resources needed for proper operation. The term "process" refers to the implementation of innovative and entrepreneurial curriculums as well as practical activities. The product refers to the quality of students' learning and its utility to



individuals and society. This study aims to use the CIPP model to evaluate the quality of innovation and entrepreneurship education in higher education institutions. To accomplish this, the context, inputs, process, and product of innovation and entrepreneurship education were evaluated, and information was gathered using various tools.

2.0 Research Purpose

The main purpose of the research to explore the quality of innovation and entrepreneurship teaching at China Higher Educations Institution using Stufflebeam's CIPP Model.

3.0 Research Question

How is the quality of innovation and entrepreneurship teaching at China Higher Education Institutions using Stufflebeam's CIPP Model?

4.0 Literature Review

4.1 Evaluation

Evaluation is the process of assessing or calculating the quality, significance, quantity, or worth of anything (Dimov et al., 2023). It is an integral part that plays an important role for teachers, students, administrators, and the educational system as a whole (Martin et al., 2019). Evaluation occurs to refine and improve the curriculum (Gordon et al., 2019). The purpose of educational evaluation is to analyze and better improve, and the results of the evaluation will be helpful in the implementation of education (Godsey, 2023).

4.2 Innovation and Entrepreneurship Education

Innovation and entrepreneurship education is a new style of education that focuses on developing young students' inventive spirit, entrepreneurial consciousness, and innovative and entrepreneurial abilities, as well as fostering innovative and entrepreneurial skills for the benefit of society. It is also a form of all-round education, which is targeted towards all students and runs through the whole process of talent nurturing to realize the full growth of students (Zhao, 2022). The current concept of innovation and entrepreneurship education can be summarized into two main categories: one is based on the essence and purpose of innovation and entrepreneurship education, which is a kind of quality education, and the other is that "innovation and entrepreneurship" education is the fusion of innovation education and entrepreneurship education. Innovation and entrepreneurship education is the cultivation of various innovation and entrepreneurship qualities centered on the spirit of "innovation and entrepreneurship", which also includes the cultivation of students' personality quality, mental thinking, and ability quality (Guo, 2020). Innovation and entrepreneurship education is a new education concept and mode, the essence of which is education reform and innovation (Yang & Li, 2020). "Innovation and entrepreneurship" education include both innovation education and indispensable entrepreneurship education, and the two are not simply superimposed but require that innovation education should be entrepreneurial



for the purpose of entrepreneurship, and entrepreneurship education should be centred on innovation but also pay attention to innovation in the application of (Guo, 2020).

4.3 CIPP Evaluation Model

The CIPP evaluation model is considered one of the most comprehensive because it emphasizes that evaluation is an evaluation of context, inputs, processes, and products. Stufflebeam states that the CIPP evaluation model is a comprehensive evaluation model with formative and summative functions (Damayanti & Ismail, 2022). The CIPP model is made up of the first letters of four evaluation elements: context evaluation, input evaluation, process evaluation, and product evaluation. According to the CIPP model, evaluation is "the process of specifying, obtaining, and providing descriptive information and making judgments about the value and utility of goals, programs, performance, and outcomes to guide decision-making, provide accountability, and deepen understanding of the phenomenon under study" (Stufflebeam, 2003).

4.3.1 Context Evaluation

Context evaluation for program decision-making services is based on social development and the evaluation of the requirements of the object (individuals, units, programs, activities, etc.) to perform a diagnostic evaluation of the program objectives. Context evaluation offers useful information for identifying and summarizing program objectives, with an emphasis on appraising their logic. It identifies requirements, challenges, resources, and possibilities within a specific context (Stufflebeam, 2000). Surveys, document reviews, data analysis, and interviews are some of the evaluation methods used. The context addresses some of the following questions (Yuan, 2021 ; Aziz & Rehman, 2018):

- (1) Are the aims of innovation and entrepreneurship education consistent with national requirements?
- (2) Are innovation and entrepreneurship education related to the goals?
- (3) Is there proper organizational support?
- (4) Is innovation and entrepreneurship education relevant to society?

4.3.2 Input Evaluation

The goal of this sort of evaluation is to offer information that will help identify which resources should be used to meet program objectives (Khuwaja, 2001). These resources, which comprise human resources, physical resources, and infrastructure, are used to evaluate the quality of innovation and entrepreneurship education at higher vocational institutions. Some input questions include (Aziz & Rehman, 2018; Ji & Liao, 2021:



- (1) Is the current faculty structure appropriate?
- (2) What resources have been dedicated to entrepreneurial education?
- (3) Are laboratories, practice platforms, and library resources shared throughout higher vocational colleges?
- (4) Do instructors possess suitable educational knowledge, skills, and attitudes?

4.3.3 Process Evaluation

Process evaluation focuses on the program's operational and pedagogical processes. Implementation is the stage in which inputs are used effectively to achieve desired goals, objectives, and product goals. The assessor examines the process to understand how higher vocational schools operate and which procedures are responsible for performing a better job and sustaining educational quality. At this point, implementation decisions are determined (Patil and Kalekar, 2014). Higher vocational college procedures include systematic methods, instructional activities, parent-teacher conferences, yearly events, co-curricular and extracurricular activities, as well as summative and formative evaluations for student tests. The teaching and learning process includes the following questions (Aziz & Rehman, 2018; Ji & Liao,2021):

- (1) Do teachers use effective techniques of instruction?
- (2) Are professors and students from higher vocational institutions actively involved in a range of activities?
- (3) Is there adequate communication among administration, teachers, and other staff?
- (4) What sorts of extracurricular activities are offered at higher vocational colleges?

4.3.4 Product Evaluation

Product evaluation encompasses the outputs of higher vocational institutions. The product's focus is not on student accomplishment, but on the skills, attitudes, knowledge, learning, and competencies that students gain and use in their lives to help society (Scriven, 1994). Some of the key concerns associated with Higher vocational colleges evaluation products are (Aziz & Rehman, 2018; Ji & Liao,2021) :

- (1) What have the students of the higher vocational college accomplished in terms of creative and entrepreneurial education?
- (2) What are the various summative and formative evaluation methodologies utilized in higher vocational colleges?



- (3) How will students put their newly acquired knowledge into practice?
- (4) What is students' input on programs and activities?

5.0 Conceptual Framework

The research on the quality evaluation of innovation and entrepreneurship education at the higher vocational college level is divided into four categories, which include context, inputs, process, and product. Context involves assessing requirements and possibilities for goals and objectives to accomplish desired outcomes. Inputs comprise the resources, infrastructure, curricula, and materials necessary to carry out the teaching and learning process. The process covers teaching and learning procedures, as well as evaluation and activities; it encompasses all processes necessary to carry out various activities and their formative evaluation. Product evaluation includes the findings obtained, which are required to establish the educational program's outcomes and efficacy (Stufflebeam, 2003). This study is based on Stufflebeam's (2003) evaluation model for quality evaluation of innovative entrepreneurship education by assessing the higher vocational colleges' environment, inputs, processes, and products (Stufflebeam, 2000). The researcher examined all four dimensions, focusing on how context, inputs, and processes affect higher vocational colleges' products or outcomes.

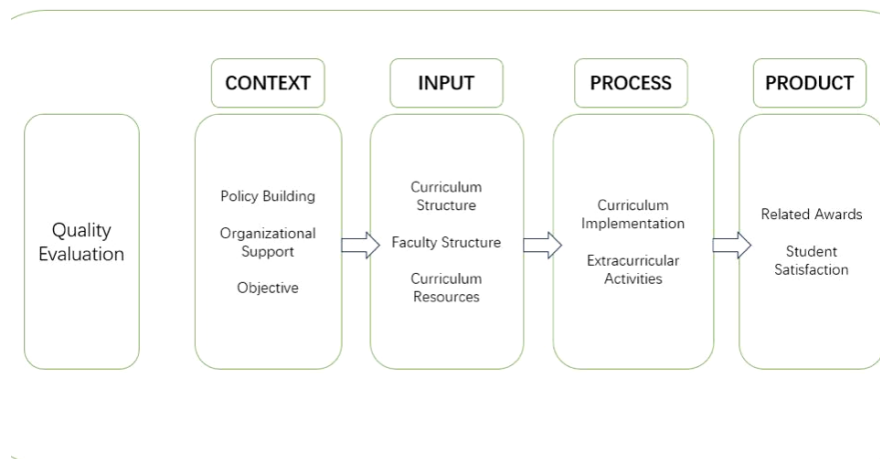


Figure 1: Conceptual framework of implementation of CIPP model for quality evaluation

6.0 Delimitation

This research focused on the perception of key stakeholders such as the director of the innovation and entrepreneurship education department, the head of the administrative function department, and teachers (Aziz & Rehman, 2018) from the Changzhou Institute of Industrial Vocational Technology. This research focused on the perception of key stakeholders such as the director of the innovation and entrepreneurship education department, the head of the administrative function department, and instructors from the Changzhou Institute of Industrial Vocational Technology's innovation and entrepreneurship education programs. The motivation for including these individuals was their link or relevance to the identified problem. The CIPP evaluation model developed



by Stufflebeam (2003) serves as the theoretical foundation for this investigation. The reason for investigating this model evaluation was its adaptability in a variety of methods. The model provides evaluators with the tools they need to measure their degree of achievement or success at each step of the process. It also provides techniques that the head of the administrative function department and teachers may use to efficiently choose, administer, and assess program outcomes. The CIPP evaluation model provides decision-making information (Rachmaniar et al., 2021). The model helps to focus the evaluation study by paying attention to specific informational needs of the curriculum planning and implementation process, preventing the collection of information that is not directly relevant to the critical issues or concerns being addressed. The study used a qualitative approach, capturing stakeholders' perceptions as well as observations of various classrooms and co-curricular activities. The argument for employing this study strategy was its simplicity and potential for exploring qualitative data before building on them to express them using narrative description

7.0 Methodology

Because the study is based on higher vocational college-level evaluation and employs the CIPP model to assess the quality of innovation and entrepreneurship education in higher vocational colleges and universities, the research design is qualitative and essentially a case study of a higher vocational college system. The person in charge of innovation and entrepreneurship education in higher vocational institution and innovation and entrepreneurship teachers will make scientific and reasonable evaluations of various indicators of innovation and entrepreneurship education in their own cognitive status. After that, the researcher will summarize the evaluation results and make a comprehensive evaluation. The study's subjects include the vice principal in charge of teaching at higher vocational colleges, the head of innovation and entrepreneurship education, the director of the administrative department, and innovation and entrepreneurship curriculum teachers. There was one vice-principal, one head of innovation and entrepreneurial education, one each for Academic Affairs and Student Activities, and five curriculum teachers (Li, 2023). The researchers used document analysis to evaluate the backdrop of the higher vocational college system, including its purpose, mission, and ambitions. To identify inputs such as resources, curriculum, and content, the researcher employed a checklist with 31 elements (Stufflebeam, 2002). Additionally, to investigate processes and inputs, the researcher observed two classrooms and two extracurricular activities (Aziz & Rehman, 2018). Furthermore, in order to analyze the product's value and compare it to the inputs and processes, the researcher posed ten document analysis questions. Based on these questions, the researcher conducted semi-structured interviews with the Vice President for Teaching and Learning, the Head of Innovation and Entrepreneurship Education, the Head of Administration, and the Innovation and Entrepreneurship program teachers. In compliance with research ethics, the researcher obtained permission from the institutions' leaders to conduct the study. To confirm the data's legitimacy, the interviews were audio-recorded for easier interpretation and analysis.

8.0 Results

The goal of this study was to explore the use of the CIPP quality evaluation methodology in innovation and entrepreneurship education at the higher vocational college level. The quality evaluation was carried out at the higher vocational college level. Because the



study was qualitative in nature, the researcher used topic and content analysis. Data were gathered using checklists (Stufflebeam, 2002a), observations, document analysis, and semi-structured interviews (audio-recorded). The researcher gathered literature using several indicators based on the needs of the study. The literature was coupled with thematic data analysis. The concepts are described in depth below:

8.1 Context Evaluation

Stufflebeam (2002b) defines context evaluation as the evaluation of the requirements, challenges, opportunities, and solvable difficulties in a particular situation. Yuan (2021), a Chinese academic, stated that context evaluation in innovation and entrepreneurship education in Chinese colleges and universities include institutional development and organizational support.

This study evaluates the context using document analysis, and the findings show that the primary goal of innovation and entrepreneurship education in higher vocational colleges is to cultivate students' spirit of innovation, as well as their awareness of innovation and entrepreneurship. The secondary goal is to improve students' innovation and entrepreneurship ability and competitiveness. Higher vocational colleges have made significant efforts to develop systems and provide organizational support for this goal. Most nations throughout the globe prioritize creating a firm basis for their educational systems through intelligent policies and practical programs. The evolution of educational policies demonstrates a broadening of the focus on learning outcomes in policy, curriculum, and evaluation. A policy is a description of concepts that are intended to define larger bounds for action. An educational policy is a statement of the steps that should be performed to attain the intended results. Educational policy is required for a country to build a sustainable educational system (Mølsted, 2021). National policy is an important background for innovation and entrepreneurship education, and how higher vocational colleges and universities can transform national guiding documents into innovation and entrepreneurship education goals, as well as system construction and organizational support, are components of the contextual evaluation in innovation and entrepreneurship education in Chinese universities and colleges (Yuan, 2021). In 2010, China's Ministry of Education issued the Recommendations on Vigorously Promoting Innovation and Entrepreneurship Education in Colleges and Universities and Independent Entrepreneurship Work of College Students, in which the term "innovation and entrepreneurship education" was used for the first time in an official education document and corresponding education initiatives were proposed. This is the state's stance on fostering the growth of innovation and entrepreneurship education in higher education institutions while also boosting higher education quality (Xu, 2021). The General Office of the State Council of China issued the "Implementing Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions" in May 2015, which proposed nine tasks and more than 30 specific reform measures for IAEE reform in colleges and universities. Meanwhile, the establishment of professional laboratories, virtual simulation laboratories, entrepreneurial laboratories, and training centers has been stepped up to encourage the sharing of experimental teaching platforms. According to national documentation, Changzhou Institute of Technology has made significant efforts in terms of system development and



organizational support. In terms of institutional construction, the authors discovered through interviews that this higher vocational college has developed a number of supporting documents for innovation and entrepreneurship education, such as management methods for innovation and entrepreneurship curriculums, management methods for innovation and entrepreneurship competitions, management methods for entrepreneurship credits, and management methods for college students' entrepreneurship bases.

According to the interview data, the higher vocational institution intends to offer a strong policy support environment for innovation and entrepreneurship education so that students may better satisfy the society need for inventive and entrepreneurial potential. Teachers' interview data reveal that higher vocational colleges have built a management structure capable of clearly defining the aims, pathways, and techniques of innovation and entrepreneurship education, as well as playing an important leadership role in the development of innovation and entrepreneurship education. T1 stated that the key step for a higher vocational college to implement the national innovation and entrepreneurship education policy is to establish a system that meets the college's own system, as well as to define the goals of innovation and entrepreneurship education for the students of the college. Our higher vocational college has developed a more comprehensive structure that serves as a solid foundation for teaching innovation and entrepreneurship. T2 stated that our higher vocational college has done a relatively excellent job of taking into account all aspects of innovation and entrepreneurship education, as well as allowing our teachers to clearly state what the goal of innovation and entrepreneurship education is and where we should focus our efforts. T3 stated that the implementation of the system is the result of dedication and targeting in order to conduct better work. The system contains seriousness and limits, which compel teachers to align their ideas and actions with the correct purpose. In terms of organizational support, this higher vocational institution has established an innovation and entrepreneurship institute, which is responsible for specific work related to innovation and entrepreneurship education, including the provision and management of innovation and entrepreneurship curriculums, the development of innovation and entrepreneurship practical activities, the organization of innovation and entrepreneurship competitions, and so on. It includes departments such as the Student Affairs Department, the Teaching Affairs Department, and the Department of Higher Vocational Colleges-Enterprise Cooperation, among others, to promote and collaborate on innovation and entrepreneurship education. T2 stated that the formation of the innovation and entrepreneurship work leading group could better unify the thoughts and actions of each department, because they all have the same goal, which is to fully support the work of innovation and entrepreneurship education, saving a lot of communication time and human resources. T4 highlighted that innovation and entrepreneurship education is a systematic effort that cannot be accomplished by curriculum teachers alone and requires the collaboration of all departments. It cannot be performed only by curriculum professors and requires complete participation from all departments. The formation of the Leading Group of Innovation and Entrepreneurship Work aims to increase efficiency by linking multiple departments via innovation and entrepreneurship education work. For example, for the Innovation and Entrepreneurship Competition, the College of



Innovation and Entrepreneurship will publish the event, the Academic Engineering Department will publicize and organize it, and the University and Enterprise Cooperation Department will provide enterprise resources, among other things, to ensure that a synergy is formed as soon as possible. T6 said that organizational support functions similarly to a linking machine, integrating the resources of all relevant departments. As it turns out, our higher education institution is performing really well on this front. The results from the interviews revealed that the institution did well in the scenario evaluation.

8.2 Input Evaluation

According to Stufflebeam (2002), input evaluation encompasses available and current resources for achieving goals and meeting requirements. The study's findings demonstrate that the higher education institution has formed a specialized curriculum management body, known as the Higher Vocational Colleges of Innovation and Entrepreneurship. This institution is essentially in charge of curriculum implementation, faculty placement, faculty training, and other related activities. To carry out innovation and entrepreneurship education, this higher vocational institution establishes a rational curriculum structure, employs a mixed team of teachers on and off campus, and makes full use of curriculum resources such as textbooks, online curriculums, and college students' innovation and entrepreneurship practices. Details are as follows:

8.3 Curriculum Structure

In terms of curriculum, the research findings show that this higher vocational college's curriculum is very balanced, with compulsory curriculums of innovation and entrepreneurship education for all students and elective curriculums of innovation and entrepreneurship education for those who are interested.

8.4 Faculty Structure

Teachers engaged in teaching must have appropriate skills in their respective fields so that they can develop entrepreneurship and entrepreneurial skills in their students (Damayanti & Ismail, 2022). In terms of faculty, the study findings suggest that this higher vocational school has formed a mixed faculty team that includes on-campus professors as well as off-campus part-time teachers who are entrepreneurs and entrepreneurial graduates, among others. This higher education school promotes instructors to gain professional certifications, such as the Entrepreneurship Mentor Certificate. Currently, almost 80% of instructors hold necessary professional degrees. Teachers' entrepreneurial experience has a significant impact on enhancing the entrepreneurial ambitions of a certain category of pupils, namely those with convergent learning styles (Bueckmann & García, 2018). The mixed faculty was formed to maximize faculty resource integration by adding certain professors with entrepreneurial teaching experience. Almost all of the instructors in the study are extremely supportive of this type of blended teaching team. T3 thinks that adding businesspeople and entrepreneurs to the teaching team may bring the most inventive and entrepreneurial ideas into the classroom, enhancing the students' learning experience. T5 explains that most in-Higher vocational college teachers have



theoretical knowledge but lack practical experience in innovation and entrepreneurship, whereas out-of-Higher vocational college teachers have more practical experience, and the two types of teachers can not only provide students with different perspectives, but they can also communicate with one another, complement each other's strengths, and improve the teaching level together. T7 also feels that the hybrid teaching team is an excellent choice since it integrates favorable resources, allows for synergy, and helps to strengthen the impact of innovation and entrepreneurship education.

However, there is an issue with insufficient instructor numbers. Because of the enormous number of pupils, the number of teachers is insufficient, resulting in a class taught by one teacher with around 80-100 students, making small class teaching of innovation and entrepreneurship education curriculums unfeasible. Large lecture-centered curriculums encounter issues, such as deterring students from participating in curriculum activities, which may be linked to poor student academic achievement (Becker & Powers, 2001). T5 believed that big class sizes prevented teachers from focusing on each student, reducing the efficacy of teaching and learning. T6 mentioned that when doing educational activities with a big class size, each student has fewer opportunities to participate. T7 believed that the number of instructors should be increased because innovation and entrepreneurship curriculums are not paper-based; a significant portion of the curriculum requires hands-on student participation, and there are enough teachers to effectively fulfill the corresponding teaching responsibilities.

8.5 Curriculum Resources

Higher vocational institutions have made significant efforts to provide curricular materials such as textbooks, online curriculums, and entrepreneurial practice bases. Textbooks are the primary medium for curriculum delivery and play an important role in teaching topics in higher vocational colleges. Textbooks are one of the instruments that instructors use to help them achieve their educational goals, and they are an essential element of the teaching and learning process. The interviews revealed that the textbooks used in the university's innovation and entrepreneurship education program are three self-developed materials created by Innovation and Entrepreneurship Department teachers based on their extensive teaching experience and research findings. Two of the items were designated as national important materials, and they were pushed and implemented at higher vocational institutions and universities throughout the country. T5, one of the main creators of the materials, stated that the textbook of the basic curriculum is based on the construction of business models of entrepreneurial paths, and that, due to the highly practical nature of higher vocational college and university teaching, the majority of the cases used are derived from entrepreneurial cases of university students, and many of them are also cases of university graduates. As a result, pupils will find it very welcoming and simple to accept. T7 believes that great self-developed textbooks are more targeted by merging the features of higher vocational colleges with students' actual situations. T8 believes that textbooks are extremely significant teaching materials, and that selecting appropriate textbooks is critical to the effective growth of teaching.



Online curriculums, which have gained popularity in recent years, are an excellent option for students to learn at their own pace (Kaup S, 2020). Construction of online curriculums. This higher education institution's innovation and entrepreneurship professors created three online curriculums to teach innovation and entrepreneurship curriculums, which, along with the offline curriculums, help to develop the innovation and entrepreneurship education program. One of the online open curriculums has grown into a national-level online open curriculum, with over 5,000 visits every year. T2, the person in charge of the online open curriculums, stated that they give students excellent online learning materials. Our online curriculums are always being built and updated, and we will import and analyze the most recent instances to guarantee that the learning resources are both current and effective. T6 said that the Higher vocational college's online curriculums are very good curriculum resources, and I usually let the students preview the classroom knowledge points through the online curriculums first, and then carry out the classroom with the questions, which can completely improve the efficiency of the offline classroom and fully mobilize the students' learning. T8 thinks that online curriculums may be taken often and at any time, allowing students to grasp and apply the curriculum material while also broadening their perspectives.

Business incubators in higher education encourage innovation and assist students and professors in turning their ideas into lucrative enterprises. Educational business incubators can be implemented using a variety of strategies, including mentorship, business planning, marketing, and supporting enterprises in finding capital or investors. Business incubators in higher education can provide a variety of benefits, such as adequate facilities and services, patent development for utility models and innovations, support for technology entrepreneurs, start-ups, and businesses, and product development for various industries (Rukmana, 2023). In terms of practical teaching, the study's findings indicate that the higher education institution has established a practice base for university students' innovation and entrepreneurship, which provides space, resources, and guidance services for students to carry out entrepreneurial practice activities, allowing them to try out entrepreneurial projects at a low cost. However, because the entire size of the innovation and entrepreneurship base for college students is small, the number of student entrepreneurial initiatives that may be accommodated is similarly restricted. This is something that should be improved. T6 stated that the Student Innovation and Entrepreneurship Base provides a tangible platform for students to make their entrepreneurial ideas a reality. Regardless of whether the final entrepreneurial project was successful or unsuccessful, students learned something from the planning to the implementation of the project, applied a lot of classroom knowledge, and formed their own thinking, all of which helped to improve students' innovation and entrepreneurship abilities.

8.6 Process Evaluation

The primary goal of process evaluation is to characterize all actions within a program (Stufflebeam, 1969). For innovation and entrepreneurship education, process evaluation may be separated into two parts: curriculum implementation and extracurricular activities.



8.7 Curriculum Development

Curriculum development is the process of establishing a teaching program, which primarily relates to instructors using proper teaching techniques to carry out instructional activities and managing program operations. Entrepreneurship education will only be effective if higher education institutions provide proper teaching approaches for developing entrepreneurial thinking (Nabi et al., 2017). According to the report, university professors mostly employ the flipped classroom teaching technique and simulation software game teaching method, which allows teachers to connect with students and creates a more dynamic classroom environment. The curriculum is managed and operated more efficiently. The specifics are as follows: when implementing the curriculum, the teachers at these Higher vocational institutions typically employ the flipped classroom and gamification teaching methods.

The flipped classroom is a basic method that involves delivering learning resources such as articles, pre-recorded films, and online links prior to class. The online classroom time is then used to further comprehension through discussions with the teacher and students. This is an excellent technique to promote problem-solving, critical thinking, and self-directed learning (Kaup S et al., 2020). T5 stated that our team of lecturers has set up an online open curriculum at Chinese University MOOC, and students are requested to pre-study and attend class with ideas on the challenges. In the classroom, we encourage kids to speak out and express themselves more, and instructors and students may collaborate to discuss and solve problems. T7 stated that the flipped classroom approach has shown to be more effective, particularly in encouraging students to identify issues and then attempt to solve them, with the instructor providing direction and the required tools to address the problem. T9 believes that the flipped classroom has altered the traditional mode of instruction in which students listen to what the teacher says, allowing students to learn more actively and the teacher to listen to what the teacher says. It enables students to study more actively while also allowing teachers to assist pupils in problem-solving. This strategy is quite popular among students at our higher vocational institutes.

Gamification education is widely used in the execution of innovation and entrepreneurial curriculums at this higher vocational school. Students are permitted to form virtual entrepreneurial project teams, use simulation software to run their entrepreneurial initiatives, and have classroom discussions about the issues involved. Gamification is an immersive teaching style. Experiential pedagogy is more effective at developing learners' competencies than traditional pedagogy simulations of entrepreneurship and work-life pedagogies such as business modeling, real-life projects with companies, student enterprises, and critical reflection in the experiential classroom (Hynes, Costin, & Birdthistle, 2010). Students also stated that the game elements made the curriculum activities more enjoyable, and the majority of participants desired to utilize progress indicators to highlight where they were in the learning content and how far they were from the objective. This drives the user to finish the learning and offers them a sense of accomplishment. T6 contends that today's students detest dogmatic curriculum delivery techniques and favor immersive, interactive approaches. Students benefit from the gamification approach in this aspect.



Gamified teaching also sets greater responsibilities on instructors, forcing them to be prepared to respond to potential difficulties rather than giving a step-by-step lesson. T8 stated that while innovation and entrepreneurship education are incredibly useful, not every student can pursue a real-world entrepreneurial career. Gamifying the teaching of simulated entrepreneurship provides an excellent pathway for students to get familiarity with the practice of entrepreneurship. Students' feedback thus far indicates that they recognize this strategy.

8.8 Development of Extracurricular Activities

Students in higher education institutions must seek out instructional activities that might assist them to build entrepreneurship and capabilities (Vesa, 2010). Universities provide students a wide choice of instructional activities and assistance for entrepreneurship, with extracurricular activities playing a critical role (Doan & Sung, 2018). Extracurricular activities in entrepreneurship supplement the necessary curriculums in the university's official curriculum. These activities are intended to encourage entrepreneurial initiative and give suitable support to students' entrepreneurial interests and objectives (Arranz et al., 2017). According to the findings of this study, this higher education institution hosts a variety of extracurricular activities on innovation and entrepreneurship each year, including innovation and entrepreneurship lectures, entrepreneurship training, entrepreneurship simulation games, entrepreneurship plan competitions, creative works exhibitions, entrepreneurial enterprise visits and experiences, an entrepreneurship alumni salon, and so on. T3 stated that innovation and entrepreneurial activities are incorporated in the student activity plan at the start of each year. Colorful innovation and entrepreneurship education activities, as well as innovation and entrepreneurship education curriculums, have emerged as a significant tool for students to strengthen their innovation and entrepreneurial skills. Every year, the Higher Vocational Colleges organize the Innovation and Entrepreneurship Culture Festival for college students, which aims to foster an innovative and entrepreneurial campus culture via a variety of events. T6 stated that extracurricular activities differ from official classes in that students can make decisions based on their own interests, giving them more flexibility and allowing them to use their own initiative. However, students' enthusiasm for extracurricular activities is rather general, and the attractiveness of the activities still needs to be improved. T7 stated that students' innovative and entrepreneurial extracurricular activities must update their contents and forms in accordance with the changing times. Organizers must think more thoroughly about the requirements of learners and how to increase the efficacy of activities.

8.9 Product Evaluation

Product evaluation evaluates short- and long-term, intended and unexpected effects and outputs, and it focuses not only on goal achievement but also on goal attainment (Stufflebeam 2003). This research comprised a product evaluation of higher vocational institutions to see whether the objectives were accomplished. The study's findings show that an effective environment, adequate resources, relevant content, appropriate and effective instruction, and the use of various instructional methods and strategies all have a significant impact on students'



skills, attitudes, behaviors, achievement, and outcomes. The more welcoming the setting is to the pupils, the more successful their learning will be. According to the research findings, the environment, inputs, and procedures all have a major influence on student performance. The document analysis reveals that the students engaged in a variety of activities, obtained high ranks in national and worldwide innovation and entrepreneurial contests, and successfully established themselves in society. Students' satisfaction with the creative and entrepreneurial education program has regularly been higher than 85%. The National Education Department has recognized Higher vocational colleges for their exceptional accomplishments in innovation and entrepreneurial education. Higher vocational colleges try to preserve the quality of creative and entrepreneurial education by applying various techniques via the collaborative efforts of their leadership, administration, professors, and staff.

9.0 Discussion

Interviews with study participants revealed nine research themes: context assessment, input evaluation, curriculum structure, faculty structure, curriculum resources, process evaluation, curriculum development, extracurricular activity development, and product evaluation. The first theme emerging from this study's findings on context assessment expresses itself in behavioural changes. Rogers defines an organisation as "a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labour." He splits the organisational dissemination of innovation into two phases: initiation and execution. Meanwhile, the second subject of input assessments is based on curricular input. Curriculums are instructions designed to educate and assist pupils. It contains objectives, activity modules, and suggestions for boosting learning. Fadzil et al. (2018) discovered that the seven essential characteristics of an entrepreneur's personality include innovation, risk-taking, inspiration, the need for autonomy and independence, tolerance of uncertainty, a hardworking and persistent attitude, and optimism. Teachers can write or design goal-oriented learning content based on the organization's principles (Supriani et al, 2022). The organization's ideals guide the development of goal-oriented learning content, which can be written or created by teachers. The curriculum's outcomes

Initiation: Everything that happens within an organization before an innovation is implemented (e.g., information collecting, conceptualizing, and planning). This is separated into two sub-stages:

1. Agenda-setting involves identifying an issue that has to be addressed inside an organization.
2. Matching refers to finding a problem that aligns with an innovative solution.

Implementation: Everything involved in putting the invention into action. The process is broken into three sub-stages:

1. As the mobilization of forethought.
2. As the deepening of the lure of the commodity through the co-implementation of commodities with consumers.



3. As the construction of different kinds of apparently more innovative space suffused with information technology.

Curriculum planning is the process of creating optimal learning environments. These conditions include identifying learning needs, selecting evaluation methods, determining learner characteristics, selecting instruction content and methods, accommodating individual differences, and logistical issues (e.g., materials, equipment, facilities, personnel, time, and cost) (Supriani et al, 2022). Ahrari et al (2021) believe that curriculum design is necessary to achieve successful education. According to Priestley et al (2021), curriculum decisions are mostly based on the developer's beliefs about how the curriculum should benefit students' development. According to De Winnaar & Scholtz (2020), curriculum design is the process of organizing curricular concepts for effective implementation. Managers' support for innovation is crucial for successful implementation. Employees may dismiss an invention as a transitory fad if there is no clear management backing for its deployment. Managers and instructors, as change agents, enthusiastically embrace innovations, even if they are deemed inappropriate. Providing intensive training, continuous user assistance, launching a marketing effort to convey the benefits of the innovation, and relaxing performance criteria all need financial investment. Klein discovered that an organization's financial resources have a substantial impact on the quality of its implementation policies and practices, thereby predicting its performance (Anwar & Abdullah, 2021). Psychological safety mitigates the effects of process innovation on organizational performance. The higher an organization's atmosphere for psychological safety, the more beneficial the association between process innovation adoption and implementation and financial success (Andersson et al, 2020). Curricular innovation is organizing human and material resources to meet curricular aims and objectives more effectively (Supriani et al, 2022). Curricular innovation involves developing new teaching materials, methods, and pedagogical ideals for potential adopters. Managers who prioritize the long-term advantages of innovation recognize that the implementation process may reduce unit productivity and efficiency in the short term. The more managers press staff to maintain or increase current job performance, the less time and energy they can dedicate to implementing innovations that provide long-term, and possibly more durable, performance advantages (Lopes et al, 2022). While significant progress has been made in understanding the process of innovation implementation, further study is required, and crucial concerns remain. What is the difference between implementing technology improvements like computer systems and non-technological innovations like management, educational, training, or patient-care interventions? How does success or failure in adopting innovation in one team or location impact the organization or community? Do units that successfully adopt one innovation also implement others? The rising literature on innovation implementation emphasizes the necessity and challenge of effective implementation, notwithstanding remaining issues. To sustain the new learning environment, schools and organizations may need to make modifications when the revised curriculum is gradually adopted. Creating a structured curriculum prevents a mix of old and new materials due to a lack of support. For example, the experiential learning working group can be established as an official entity responsible for supervising this curricular component, including technical and academic staff. To assess students' competency, a review unit might be established to monitor their performance and provide corrective activities as needed. Quality assurance and accreditation units can improve and connect the new curriculum with accreditation criteria by detecting gaps and developing necessary tools. To implement interprofessional education in the new curriculum, it is necessary to establish a global unit



with members from various health disciplines. The new structure should align with the curriculum's guiding concepts and support its significant unique components. Targeted employment of academic staff may be necessary if not previously done during the early implementation phase. The purpose of this study is to explore the usage of the CIPP model to evaluate the quality of innovation and entrepreneurship education in higher vocational colleges. Evaluation is a process that tracks an institution's progress towards meeting its goals and objectives. To achieve the evaluation aim, the researcher utilized Stufflebeam's CIPP evaluation methodology to guide the process in a methodical manner, assessing several aspects of the quality of innovation and entrepreneurship education at higher vocational schools. The researchers wanted to assess the quality of innovation and entrepreneurship education at higher vocational colleges by looking at the Changzhou Institute of Industrial Vocational Technology's environment, inputs, procedures, and products.

10.0 Conclusion

According to the study's findings, the Higher vocational college's innovation and entrepreneurship education, with the exception of some shortcomings, is attempting to maintain its quality while also taking additional steps to improve the quality of innovation and entrepreneurship education in Higher vocational colleges. Using various tools and data analysis, it was discovered that all processes are student-centered, that the Higher vocational college system provides students with quality educational resources and appropriate facilities, and that well-structured curricula and colorful extracurricular activities contribute to students' continuous improvement in innovation and entrepreneurship skills. This study will serve as a research model for future systematic evaluations of innovation and entrepreneurship education in higher vocational colleges.

11.0 Recommendations

We provided several recommendations to principals, instructors, and administrators of higher vocational colleges based on our findings in order to improve the quality of innovation and entrepreneurship teaching in these institutions.

1. To increase the quality of innovation and entrepreneurship education, more well-trained instructors with business experience, particularly those from outside of higher vocational institutions, might be employed.
2. Class sizes for innovation and entrepreneurship education are too huge; establish as many opportunities for small class instruction as feasible.
3. Increase teacher training and allow instructors to get out more regularly to share ideas and learn from their colleagues.
4. When developing the curriculum, keep it current and update the instructional content as often as possible.
5. Extracurricular activities should be structured in such a way that they are inventive rather than repetitive.
6. Various educational trips and frequent evaluations can be arranged to promote and sustain the quality of innovation and entrepreneurship education in higher vocational



colleges.

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