

# **Entrepreneurship Learning Preparing Vocational High School Students for Prospective Young Entrepreneurs in Indonesia**

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## **Abstract**

The increase in the number of vocational high school graduates every year is not comparable to the number of industries in Indonesia. This is what caused the government to issue a policy to provide entrepreneurship education to vocational high school students. The purpose of this study is to describe the implementation of entrepreneurship education to prepare vocational high school students in Indonesia. This type of research is descriptive with a qualitative approach. The subjects are three public vocational high schools that get the center of excellent program from the ministry of education. Data was collected by interviews, observation and documentation. His findings stated that vocational education is part of the implementation of the Merdeka curriculum in Indonesia. This learning must be project-based and product-producing. This learning is also carried out in collaboration with local and national entrepreneurs. Learning activities begin with making proposals in groups, implementing, and evaluating. Implementation is carried out by involving entrepreneurs or related industries. As a result, every department in every vocational school has entrepreneurial products as outputs and retail businesses carried out by its students. The learning patterns that make the mainstay of the school will then be competed at the regional and national levels. Finally, entrepreneurial activities in VHS not only have a positive impact on schools to prepare their graduates to become young entrepreneurs, but also provide an additional workload of teachers in schools.

*Keywords:* Entrepreneurship Education, Vocational High School, Young Entrepreneur, Student Business

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## Abstract

The increase in the number of vocational high school graduates every year is not comparable to the number of industries in Indonesia. This is what caused the government to issue a policy to provide entrepreneurship education to vocational high school students. The purpose of this study is to describe the implementation of entrepreneurship education to prepare vocational high school students in Indonesia. This type of research is descriptive with a qualitative approach. The subjects are three public vocational high schools that get the center of excellent program from the ministry of education. Data was collected by interviews, observation and documentation. His findings stated that vocational education is part of the implementation of the Merdeka curriculum in Indonesia. This learning must be project-based and product-producing. This learning is also carried out in collaboration with local and national entrepreneurs. Learning activities begin with making proposals in groups, implementing, and evaluating. Implementation is carried out by involving entrepreneurs or related industries. As a result, every department in every vocational school has entrepreneurial products as outputs and retail businesses carried out by its students. The learning patterns that make the mainstay of the school will then be competed at the regional and national levels. Finally, entrepreneurial activities in VHS not only have a positive impact on schools to prepare their graduates to become young entrepreneurs, but also provide an additional workload of teachers in schools.

**Keywords:** Entrepreneurship education, vocational high school, young entrepreneur, student business

## Introduction

Currently, Indonesia is facing the problem of increasing the number of vocational education graduates, especially at the Vocational High School (VHS) level (Kurniawan, at al., 2021; Siminjutak, Voak, & Fairman, 2022; Utomo, 2021). Competition in the job market is not only with prospective domestic workers, but also with overseas workers (Matsuura & Saito, 2022; Palmer & Piper, 2022). Graduates are not only required to have work skills in accordance with what is needed by industry, they are also required to have high abilities (Kenayathulla, Ahmad, & Idris, 2019; Matsouka & Mihail, 2016), especially it is to meet the demands of changing workplaces and promising opportunities (Rawboon, Yamazaki, Klomklieng, & Thanomsub, 2021).

High competition is not only caused by the large number of VHS graduates compared to the number of available industries and their ability to absorb graduates (Lamijan, Ulfatin, Hadi, & Sultoni, 2022; Mulyanto & Widodo, 2023). Indonesian statistical data shows that the number of VHS graduates is 1.47 million in 2019 and 1.73 million in 2021 (Databoks, 2021). Meanwhile, the number of industries in 2019 is 30,072 and in 2021 it will be 30,788 industries (Statistics Indonesia, 2023). It states that the increase in the number of graduates is 260 thousand (17.69%) and the number of industries is 716 (2.38%). If compared between the two, then 1 industry accepts 364 VHS graduates. This condition has not been added by graduates from others, for example, college graduates reached 832 thousand in 2022 (Databoks, 2023).

Due to these problems, the Indonesian Minister of Education issued a policy on Entrepreneurship Education must be included in the curriculum as part of the Independent Curriculum in VHS (Ministry of Education, 2023). This is also in line with the VHS revitalization program in Indonesia (Ministry of Education, 2021). The goal is to shape graduates to work or continue their studies to college or become young entrepreneurs. In its implementation, each vocational school has its own implementation pattern, depending on the creativity and innovation of its teachers. Furthermore, this study aims to describe the implementation of entrepreneurship education to prepare vocational high school students in Indonesia.

## **Method**

The type of research is descriptive with a qualitative approach. The subjects of this study were five teachers who taught entrepreneurship education at VHS in East Java, Indonesia. The teachers selected are teachers who have a family business. The data was obtained through interviews, observations, and documentation. Furthermore, the data was analyzed with qualitative analysis manual techniques to find patterns in the implementation process of entrepreneurial learning at VHS in East Java, Indonesia. Data validation is carried out by triangulation between the three data collection techniques and reliability is carried out through checking data with other related sources until the data is saturated.

## **Results and Discussion**

Entrepreneurship Learning Outcomes at VHS aims to foster students' entrepreneurial spirit and financial intelligence in preparing them to become prospective young entrepreneurs if they do not continue to study at university or do not want to work as employees in the industry. Furthermore, the findings of this paper are grouped into three: learning planning, learning implementation process, and learning evaluation. More details can be seen in Figure 1. Here is the explanation.

### **Entrepreneurship learning planning**

The entrepreneurship learning planning carried out at VHS is perceived by teachers to provide entrepreneurship provisions for their students. This is in accordance with government policy that VHS graduates are not only to work in industry, but also to continue

and entrepreneurship (Suparmin, Priyanto, & Setiadi, 2020). In general, schools through teachers and department heads provide full support for entrepreneurial learning practices in each department.

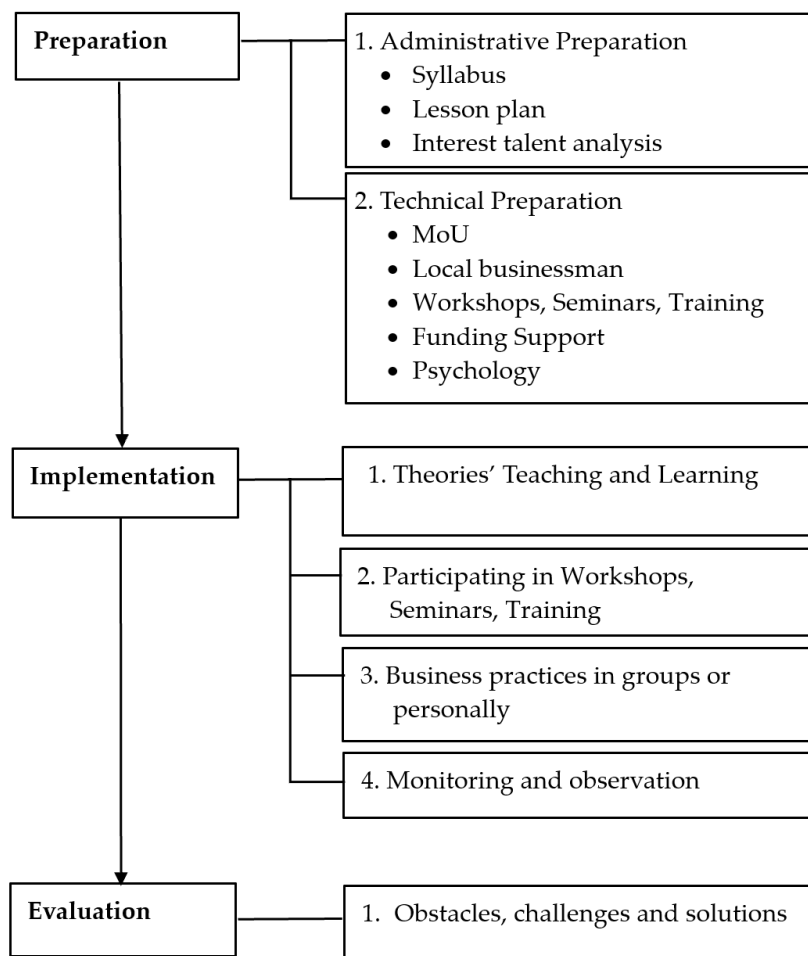


Figure 1 Entrepreneurship Learning Implementation Model at VHS

Careful planning will produce maximum results. The business plan represents the future as well as the target expectations. The existence of planning, activities can get closer to the goal of what is desired. Planning will be the foundation in running a business (Welter, et al., 2021). Planning that has a strategic can be a preparation of long-term projects, this can be an effort to realize the goals to be achieved (Barrow, Barrow, & Brown, 2018).

This research has found that there are plans made by VHS to provide provisions and experience to its students as prospective entrepreneurs. VHS plans are future plans for students to form personalities capable of breaking through market sector barriers. VHS Negeri has planned entrepreneurship learning well. It is proven that some students have felt the results of entrepreneurship that reached tens of millions. For example, students with a business selling koi fish. They have earned a fantastic profit. Reap the benefits of experiences that were once hobbies and earning. This success is inseparable from the mentoring of their teacher. Another recognition to students who are desperate for lack of finances.

Entrepreneurship learning outcomes supported by their experience and knowledge, they got millions money in profits through their business ventures.

Based on this information, planning has an important role in learning entrepreneurship in teaching a small business. In this plan, the teacher makes lesson plans and tools as guidelines in providing learning. This is done by teachers through the analysis of interests and talents so that they become more interactive planning. Without preparing a lesson plan, the teacher's lesson plan will have difficulty in achieving the expected learning objectives. Therefore, planning has an important role so that learning can run optimally.

In addition, technically, this learning preparation is to communicate with business people related to their learning (Sörensson & Bogren, 2020). Through the involvement of entrepreneurs, it is hoped that students can be motivated in continuing their entrepreneurial efforts. It also introduces the demonstration of entrepreneurs' ability in entrepreneurship and the advantages of being an entrepreneur need to be done for the psychological needs of students.

### **Implementing entrepreneurial learning**

The implementation of entrepreneurial learning is the process of carrying out an activity that has been planned in advance. The implementation of practical learning has shown to work well. The implementation of this learning is carried out in groups. Learning is carried out by providing material and feedback both offline and online according to conditions. The stages are as follows.

- First, learning activities begin by motivating students by teachers about the world of entrepreneurship. The goal is to open students' insights and *mindsets* about the business world, then the teacher gives assignments to students to find information by reading many business success stories. Minimum 5 business actors both at home and abroad.
- Second, the next activity, students randomly presented the results of a summary of tips and success stories of the entrepreneur. At this stage, questions and answers and discussions were carried out accompanied by the teacher. The presentation of this success story is also carried out every time you start learning by one of the students randomly with the condition that the entrepreneur must not be the same.
- Third, at the next meeting, the teacher accompanies the students to form a real trading company. In this session, the first thing to do is for students to form groups of 5-6 people. Then identify what business legality requirements are needed in establishing a company. Since you are still learning, the requirements can be searched from the internet. Second, each group forms a corporate organizational structure, starting from company leaders, secretaries or administration, finance divisions, marketing divisions, and personnel. Third, each student is required to pay as if he/she planted shares of \$0.64 based on a class agreement and is considered as capital.
- Fourth, each group spends the money collected according to the agreement, may not be the same type of manufacturing or trade,

- Fifth, students make sales both online and offline. Every weekend, according to the organizational structure formed, each group makes simple financial statements to find out the development of its business.
- Sixth, the money from the sale is turned back by buying merchandise, and so on.
- Seventh, at the end of each month each group makes simple financial statements, cash and profit and loss. Thus, students can find out the development of the company, how much the gains and losses, manage the company's finances correctly, and can practice making policies to conduct business evaluations. Every week teachers as facilitators, motivators, and assistants check the results of the administrative report of each group. Then give *projects* to students to present the results of each group's work. Students discuss business development, looking for the causes of ups and downs in sales volume. Through this activity, students then practice setting guidelines and steps that need to be taken to develop their business.

Direction and monitoring of teachers with the involvement of business entrepreneurs applied students in the process of implementing entrepreneurial learning. Making an organizational structure and *job* description of each student has been done. Through this learning process, students can grow their entrepreneurial spirit (Li & Chen, 2022) so that they are not always processed to work in the industry, but becoming an entrepreneur is also a goal after graduation and provides business opportunities for others (Porfírio, Carrilho, Jardim, & Wittberg, 2022).

### **Learning evaluation**

Evaluation of entrepreneurial learning is carried out after the end of the semester. The obstacles experienced in the implementation of entrepreneurship learning at VHS stem from the experience of teachers and student dissatisfaction because they feel failed in their business.

The first problem is the minimal experience of teachers. The solution effort is to lead students to try to be productive. This orientation can provide information and stimulate students to entrepreneurship. Experience can make that a person already has knowledge and skills, because he has undergone events and obtained information and is used as an improvement in carrying out activities (Cosgun, 2016; Fazey, Fazey, & Fazey, 2005; Kingkaew, et al., 2023).

The second is that there are students who feel dissatisfied because of the unsold products they sell. The solution is to bring in experience-related practitioners to be effective in selling products. At VHS which has alumni who are successful in entrepreneurship, this can be used to motivate in the cultivation of students in entrepreneurship. Practitioners can provide solutions to the experiences they have experienced, therefore by bringing directly can be a discussion and positive input to students. Effectiveness for entrepreneurship education is through the entrepreneurial experience taught (Byun, Sung, Park, & Choi, 2018; Decker-Lange, Lange, Dhaliwal, & Walmsley, 2022).

Learning evaluation needs to be done consistently to provide optimal learning outcomes. Through practice and motivation entrepreneurship will strengthen the locus of control of

students. Their success in business will strengthen their entrepreneurial mindset. The training, workshops, and entrepreneurship competitions they participate in will strengthen entrepreneurial competence so that it has a strong impact on the intention to become a young entrepreneur.

## Conclusion

Learning entrepreneurship at VHS is not easy. This demands the readiness of schools, teachers, students and associated entrepreneurs. A project-based and experiential learning scenario is very important to be implemented in a structured manner with the availability of learning tools made based on the results of the analysis of students' talents and interests. Assisting students in learning is very important because in general VHS students have their mental psychology is still unstable, so motivation is very important for teachers to shape their entrepreneurial spirit. As a result, 3-5% of VHS graduates become young entrepreneurs in their area.

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**2023 後疫情時代技職教育之發展與  
挑戰國際研討會**

**2023 International Conference of  
Development and Challenges of  
Industrial Education in Post-Pandemic Era**

**會議手冊  
Conference Program**

**2023 年 11 月 4 日**

# 2023 後疫情時代技職教育之發展與挑戰國際研討會

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**2023 International Conference of  
Development and Challenges of  
Industrial Education in Post-Pandemic Era  
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# 壹、議程

# 2023 後疫情時代技職教育之發展與挑戰國際研討會

中華民國 112 年 11 月 04 日 (星期六)

地點：國立臺灣師範大學教育學院 202 會議廳

時間	議程
09:00-09:30	註冊/報到
09:30-10:00	<b>開幕式</b> 開幕貴賓：新北市政府教育局 張明文局長 教育部技術及職業教育司 楊玉惠司長 教育部國民及學前教育署高級中等教育組 易秀枝專門委員
10:00-10:40	<b>專題演講 I</b> 主持人：教育部技術及職業教育司 楊玉惠司長 主講人：韓國職業教育學會會長 首爾大學農業與生命科學學院教授 羅承日博士
10:40-11:00	茶敘
11:00-11:40	<b>專題演講 II</b> 主持人：教育部國際及兩岸教育司 李彥儀司長 主講人：越南國家職業教育與培訓局副局長 Pham Xuan Thu 博士
11:40-12:20	<b>專題演講 III</b> 主持人：教育部國際及兩岸教育司 李彥儀司長 主講人：泰國先皇技術學院工業教育與科技學院國際事務中心主任 Sirirat Petsangsri 博士
12:20-13:30	午餐

## 2023 後疫情時代技職教育之發展與挑戰國際研討會

中華民國 112 年 11 月 04 日 (星期六)				
地點：國立臺灣師範大學教育學院 202 會議廳				
13:30-14:50	高職優質化團隊 分享及交流 (TA305)	論文發表 場次一 (研討六)	論文發表 場次二 (研討二)	論文發表 場次三 (研討四)
14:50-15:10	茶敘			
15:10-16:30	國科會應用科學 教育學門技職教 育 SIG 學門 介紹與研究交流 (研討一)	論文發表 場次四 (研討六)	論文發表 場次五 (研討二)	論文發表 場次六 (研討四)
16:30	賦歸			

## 2023 International Conference of Development and Challenges of Industrial Education in Post-Pandemic Era

<b>November 4, 2023 (Saturday)</b>	
<b>Location: Room 202, College of Education, National Taiwan Normal University</b>	
<b>Time</b>	<b>Agenda</b>
09:00-09:30	<b>Registration</b>
09:30-10:00	<p><b>Opening Ceremony</b>  <b>Opening Guest:</b> Dr. Ming-Wen Chang            Commissioner, Education Department, New Taipei City Government</p> <p>Dr. Yu-Huei Yang            Director General, Department of Technologic and Vocational Education, Ministry of Education</p> <p>Dr. Hsiu Chin I            Senior Specialist, Division of Academic Senior High Education, K-12 Education Administration, Ministry of Education</p>
10:00-10:40	<p><b>Keynote Speech I</b>  <b>Session Chair:</b> Dr. Yu-Huei Yang            Director General, Department of Technologic and Vocational Education, Ministry of Education</p> <p><b>Speaker:</b> Dr. Seung Il Na            President, Korean Society of Agricultural Education and Human Resource Development            Professor, College of Agriculture and Life Sciences, Seoul National University</p>
10:40-11:00	<b>Coffee/Tea Break</b>



11:00-11:40	<p><b>Keynote Speech II</b></p> <p><b>Session Chair:</b> Yen-Yi (Nicole) Lee Director General, Department of International and Cross-strait Education, Ministry of Education</p> <p><b>Speaker:</b> Dr. Pham Xuan Thu Deputy Director, National Institute for Vocational Education and Training, Vietnam</p>			
11:00-11:40	<p><b>Keynote Speech III</b></p> <p><b>Session Chair:</b> Yen-Yi (Nicole) Lee Director General, Department of International and Cross-strait Education, Ministry of Education</p> <p><b>Speaker:</b> Dr. Sirirat Petsangsri Head of International Office, School of Industrial Education and Technology, King Mongkut's Institute of Technology Ladkrabang, Thailand</p>			
12:20-13:30	<b>Lunch</b>			
13:30-14:50	High Quality Assisting Programs in Vocational High Schools Workshop (TA305)	Paper Presentation Section I (TA308)	Paper Presentation Section II (TA212)	Paper Presentation Section III (TA214)
14:50-15:10	<b>Coffee/Tea Break</b>			
15:10-16:30	National Science and Technology Council Applied Science Education -Vocational Education SIG Workshop (TA213)	Paper Presentation Section IV (TA308)	Paper Presentation Section V (TA212)	Paper Presentation Section VI (TA214)
16:30	<b>Closing</b>			

## 貳、論文分組發表場次

## 論文分組發表場次（上半場）

11/04 (六) 13:30~14:50

地點：國立臺灣師範大學科技與工程學院大樓 3 樓 會議室

主持人：易秀枝/教育部國民及學前教育署高級中等教育組專門委員

主題：高職優質化團隊分享及交流

地點：國立臺灣師範大學科技與工程學院大樓 3 樓 研討六

主持人：田振榮/國立臺灣師範大學工業教育學系退休教授

評論人：劉曉芬/國立臺北科技大學技術及職業教育研究所副教授

主題：技職教育政策規劃

論文題目	作者
後疫情時代技職教育政策規劃-淺論政策綱領修訂方向	曾芳琪、黃聖哲、游鏡可
技職教育綱領之實施—龍華科技大學技職教育推展之探究	魏黎傑
從防疫政策探討我國技職教育之發展趨勢影響	陳美宏

地點：國立臺灣師範大學科技與工程學院大樓 2 樓 研討二

主持人：曾淑惠/國立臺北科技大學技術及職業教育研究所教授

評論人：張仁家/國立臺北科技大學技術及職業教育研究所教授

主題：技職教育課程發展與教學創新（一）

論文題目	作者
The Impact of Engagement with Feedback on Learning Outcomes in Online Learning Environments	Nguyen Thi Phuong Vy, Yi-Fang Lee, Nguyen Hoang Bao Ngoc, Hsinling Sonya Hung, Shu Fan Deng
應用雲端即時互動系統翻轉設計領域教學：以大學「數位特效後製」課程為例	許正妹
應用 OMO「三動一合」模式在大學設計領域教學及其成效之研究	許正妹
後疫情時代技職教育混合式實作課程教學設計：以機械群科機械加工課程為例	謝鎮遠

地點：國立臺灣師範大學科技與工程學院大樓 2 樓 研討四

主持人：陳麗妃/國立臺灣師範大學工業教育學系教授

評論人：詹勳育/國立臺灣師範大學工業教育學系助理教授

主題：國際視野（一）

論文題目	作者
A Study on Student Perception of Formative Assessment Affecting Student Performance	Pham Thuy Trinh, Tang Thi Thuy
Entrepreneurship Learning Preparing Vocational High School Students for Prospective Young Entrepreneurs in Indonesia	Didik Nurhadi, Siti Zahro
Augmented Reality in the Implementation of Information and Communication Technology in Engineering and Vocational Teaching in the Post-Pandemic Era	Putrinda Inayatul Maula

## 論文分組發表場次（下半場）

11/04 (六) 15:10~16:30

地點：國立臺灣師範大學科技與工程學院大樓 2 樓 研討一

主持人：李懿芳/國立臺灣師範大學工業教育學系教授

主題：國科會應用科學教育學門技職教育 SIG 學門介紹與研究交流

地點：國立臺灣師範大學科技與工程學院大樓 3 樓 研討六

主持人：宋修德/國立臺灣師範大學工業教育學系教授

評論人：曾壁光/國立羅東高級中學校長

主題：技職教育課程發展與教學創新（二）

論文題目	作者
以美國心理學會資優學生教與學原則討論技職體系學生學習需求	黃聖哲、曾芳琪、游鏡可
COVID-19 疫情下線上學習的教師教學技能、學習態度與感知學習成效之探討—以新竹市技術型高中資訊科技課程為例	陳筠晶、張品珊
Developing a Teaching Competency Framework to Enhance High School Students' Key Competencies in Vietnam	Nguyen Hoang Bao Ngoc, Yi-Fang Lee, Tang Thi Thuy
私立技術型高級中等學校教師工作滿意度與轉職傾向之個案研究	邱郁玲

地點：國立臺灣師範大學科技與工程學院大樓 2 樓 研討二

主持人：吳明振/國立臺灣師範大學工業教育學系退休教授

評論人：張俊興/國立臺灣師範大學車輛與能源工程學士學位學程助理教授

主題：技職師資暨職場人力培訓

論文題目	作者
新二代私立高職學生人際互動、學校適應、自我認同之相關研究	江素梅
Differences in Students' Metacognition by Gender and School Locations in Vietnam	Tang Thi Thuy, Yi-Fang Lee, Duong Tran Hoang Thuy

疫後職場組織創新領導經營模式探討	郭弼強、胡茹萍
後疫情時代各國 AI 人工智慧產業及人才培育政策對於我國高級中等以下 AI 人工智慧教育之啟示：以新加坡、日本及中國大陸為例	江彥廷、江宗皓

地 點：國立臺灣師範大學科技與工程學院大樓 2 樓 研討四

主持人：陳麗妃/國立臺灣師範大學工業教育學系教授

評論人：詹勳育/國立臺灣師範大學工業教育學系助理教授

主 題：國際視野（二）

論文題目	作者
Universities' Communication Efforts with Students Influence University Choice Decisions of Grade 12 Students	Vu Minh Hieu, Tang Thi Thuy
Assessment and Evaluation in Online Learning in the Context of Covid 19: New Approaches and Best Practices	Tran Thi Thu Huong
Longitudinal Changes in Self-Efficacy of Math, Professional, and Workshop Courses for Vocational High School Students in Applied Engineering Programs	詹勳育、陳諺纓
Financial Autonomy in Universities: Current Situation and Recommendations	Nguyen Anh Tuan

## 參、議事規則

## 議事規則—與會者注意事項

- 一、建議與會者請於大會期間全程配戴口罩。
- 二、會場內請將手機保持關機或靜音模式，俾利議事進行。
- 三、會議進行中請勿大聲喧嘩，遵守主持人所宣布之規則及事項。
- 四、每位與會者發言時請先說明服務單位及姓名，發言以 2 分鐘為限，屆時鈴響兩聲，每超過 1 分鐘鈴響一聲。
- 五、請於本研討會活動結束後繳回識別證給工作人員。
- 六、因本校停車位有限，請多加利用大眾運輸工具。
- 七、為響應節能減碳，請自備環保杯。



## **Participant Guidelines**

1. Participants are encouraged to wear masks throughout the conference.
2. Please keep your phone turned off or in silent mode while inside the venue.
3. Please refrain from making loud noises during the meeting and follow the rules announced by the host.
4. Members in the audience should first introduce their name and affiliation when speaking during the Q&A session. Please limit the questions to 2 minutes. The moderator will ring the bell twice when the 2-minute time slot is used, followed by an additional bell ring per minute afterward.
5. Please return your badge to the staff at the end of the conference.
6. Attendees are encouraged to take public transportation to the conference site.
7. Please bring your own water bottle.

## 議事規則—論文發表

### 一、論文發表場次時間安排：

(一) 主持人開場：3 至 5 分鐘。

(二) 發表人時間：

1. 每篇論文發表 10 分鐘。

2. 結束前 2 分鐘鈴響一聲，屆時鈴響兩聲，之後每超過 1 分鐘鈴響一聲。

(三) 評論人時間：約 15 分鐘。

(四) Q&A 時間：約 10 分鐘。發表人綜合答覆、開放與會者提問。

二、發表人請於該場次開始前 10 分鐘至發表場地報到，並與工作人員確認發表簡報檔案內容。

三、各場次結束前 3 分鐘，舉牌提醒主持人，屆時將再次舉牌提醒。

## Conference Rules - Paper Presentation

### 1. Schedule:

(1) Opening remark by the host: 3 to 5 minutes.

(2) Presentation Time for Each Paper:

a. Each paper will have 10 minutes for presentation.

b. There will be one bell ring 2 minutes before the end of the allocated time, followed by a double bell ring at the end of the allocated time and an additional single bell ring per minute afterward.

(3) Discussant's Commentary: Approximately 15 minutes.

(4) Q&A Session: Approximately 10 minutes. Presenters will answer and engage with attendees' questions.

2. Presenters are requested to check in at the presentation venue 10 minutes before the start of their respective session to set up the presentation.

3. Staff will signal the host 3 minutes before the end of each session. A second reminder will be given at the end of the session.

## 肆、專題演講人簡介



## 專題演講 I 主講人

### Keynote Speech I Speaker

羅承日 博士

Dr. Seung IL Na

韓國職業教育學會會長

首爾大學農業與生命科學學院教授

President, Korean Society of Agricultural  
Education and Human Resource  
Development

Professor, College of Agriculture and Life  
Sciences, Seoul National University

羅承日博士於首爾國立大學取得農業教育學士學位、職業教育碩士學位，並在美國俄亥俄州立大學獲得博士學位。自 1999 年 9 月以來，擔任首爾國立大學職業教育與勞動力發展學系的教授，教授教學與學習方法、管理與政策、研究方法以及職業教育和勞動力發展的教育。最近的研究主題主要聚焦於 NCS/NQF、國家技術資格制度、能力評估和資格考試，以及專業工程師等領域。羅博士曾於 2013 年 3 月至 2014 年 8 月擔任大韓民國教育部副部長，並曾擔任韓國技能與資格協會會長，目前擔任韓國職業教育學會會長，以及亞洲職業教育與培訓學術協會（AASVET）會長。

Dr. Seung IL Na has been a professor of Seoul National University since September 1999. He teaches methods of teaching and learning, administration and supervision, teacher education, and research methodology in vocational education and workforce development. He received his bachelor's and master's degree from Seoul National University and his Ph.D. degree from the Ohio State University. He served as Vice Minister of Education of the Republic of Korea. He has served as President of the Korea Association of Skills and Qualification and currently serves as President of the Korean Society of Agricultural Education and Human Resource Development.



## 專題演講 II 主講人

### Keynote Speech II Speaker

Pham Xuan Thu 博士

Dr. Pham Xuan Thu

越南國家職業教育與培訓局副局長

Deputy Director, National Institute for  
Vocational Education and Training

Pham Xuan Thu 博士於 1996 年起任教於越南南定技術教育大學，專攻電機工程；2002 年起在越南國家職業培訓局（NIVT）服務。Pham Xuan Thu 博士在職業教育領域進行大量研究，並長期在多個教育機構教授教學方法和管理職業教育等課程。他積極參與許多與越南職業教育相關的國際級計畫。Pham Xuan Thu 博士擁有越南胡志明市技術教育大學的教育科學學士和碩士學位，以及越南河內國立大學的教育管理博士學位。

Dr. Pham Xuan Thu previously taught at Nam Dinh University of Technology Education starting in 1996, where he specialized in electrical engineering. In 2002, he transitioned to work at National Institute for Vocational Training (NIVT). He has conducted extensive research in the field of vocational education and possesses many years of experience in teaching teaching methods and managing vocational education at various educational institutions. He has actively participated in numerous international projects related to vocational education in Vietnam. Dr. Pham Xuan Thu holds a Bachelor's and Master's degree in Educational Science from Ho Chi Minh City University of Technology and Education, and a Ph.D. in Educational Management from the National University of Hanoi.



### 專題演講 III 主講人

#### **Keynote Speech III Speaker**

Sirirat Petsangsri 博士

Dr. Sirirat Petsangsri

泰國先皇技術學院工業教育與科技學院  
國際事務中心主任

Head of International Office, School of  
Industrial Education and Technology, King  
Mongkut's Institute of Technology  
Ladkrabang

Sirirat Petsangsri 博士自 1995 年起任教於泰國先皇技術學院。Petsangsri 博士於 1986 年於泰國詩納卡寧威洛大學取得 Teaching English as a second Language 學士學位，1994 年於泰國朱拉隆功大學完成 Audio-Visual Education 碩士學位，並於 2002 年於美國匹茲堡大學完成博士學位。目前 Petsangsri 博士擔任泰國先皇技術學院工業教育與科技學院國際事務中心主任。

Dr. Sirirat Petsangsri has been a professor of King Mongkut's Institute of Technology Ladkrabang in Thailand since 1995. Petsangsri has a Bachelor's Degree in Teaching English as a second Language from Faculty of Education, Srinakarintharawirot University in 1986, and a Master of Education in Audio-Visual Education from Faculty of Education, Chulalongkorn University in 1994. She received her Ph.D. in Instructional Design and Technology from School of Education, University of Pittsburgh in United State in 2002. She is now the Director of International Office, School of Industrial Education and Technology, King Mongkut's Institute of Technology Ladkrabang.

## 伍、大會組織暨人員名冊



# 2023 後疫情時代技職教育之發展與挑戰國際研討會

## 大會組織暨人員名冊

組別	單位	姓名	職稱
總召集人	國立臺灣師範大學 工業教育學系	胡茹萍	教授兼系主任
副總召集人	國立臺灣師範大學 工業教育學系	李懿芳	教授
副總召集人	國立臺灣師範大學 工業教育學系	宋修德	教授
執行秘書	國立臺灣師範大學 工業教育學系	詹勳育	助理教授
議事組	國立臺灣師範大學 工業教育學系	馬嘉徽 唐巍芬	行政專員 行政專員
學術組	國立臺灣師範大學 工業教育學系	郭岱強 唐巍芬	博後研究員 行政專員
總務組	國立臺灣師範大學 工業教育學系	林恩立	行政專員
公關組	國立臺灣師範大學 工業教育學系	馬嘉徽 唐巍芬 林恩立	行政專員 行政專員 行政專員
美編設計組	國立臺灣師範大學 工業教育學系	唐巍芬	行政專員

## 陸、發表人員名冊

# 2023 後疫情時代技職教育之發展與挑戰國際研討會

## 發表人員名冊

序號	姓名	單位/職稱	題目
場次	技職教育政策規劃		
論文發表一	曾芳琪、黃聖哲、游鏡可	國立臺灣師範大學工業教育學系博士生	後疫情時代技職教育政策規劃—淺論政策綱領修訂方向
	魏黎傑	龍華科技大學機械工程系講師暨國立臺灣師範大學科技應用與人力資源發展學系博士生	技職教育綱領之實施—龍華科技大學技職教育推展之探究
	陳美宏	國立臺灣師範大學工業教育學系博士候選人	從防疫政策探討我國技職教育之發展趨勢影響
場次	技職教育課程發展與教學創新（一）		
論文發表二	Nguyen Thi Phuong Vy <sup>1</sup> , Yi-Fang Lee <sup>2</sup> , Nguyen Hoang Bao Ngoc <sup>3</sup> , Hsinling Sonya Hung <sup>4</sup> , Shu Fan Deng <sup>5</sup>	<sup>1</sup> International Doctoral Program in Integrative STEM Education, National Taiwan Normal University and University of Education, Vietnam National University, Hanoi	The Impact of Engagement with Feedback on Learning Outcomes in Online Learning Environments
		<sup>2</sup> Professor, Department of Industrial Education, National Taiwan Normal University	
		<sup>3</sup> Ph.D., Department of Industrial Education, National Taiwan Normal University	
		<sup>4</sup> Assistant Professor, Virginia Commonwealth University, USA	
		<sup>5</sup> Doctoral Student, Department of Industrial Education, National Taiwan Normal University	

序號	姓名	單位/職稱	題目
	許正妹	中國科技大學視覺傳達設計系 助理教授	應用雲端即時互動系統翻轉 設計領域教學：以大學「數位特效後製」課程為例
	許正妹	中國科技大學視覺傳達設計系 助理教授	應用 OMO「三動一合」模 式在大學設計領域教學及其 成效之研究
	謝鎮遠	國立臺灣師範大學工業教育學 系技職教育碩士生	後疫情時代技職教育混合式 實作課程教學設計：以機械 群科機械加工課程為例
場次	國際視野（一）		
論文發表三	Pham Thuy Trinh <sup>1</sup> , Tang Thi Thuy <sup>2</sup>	<sup>1</sup> Quality Assurance and Inspection Officer, VNU University of Education	A Study on Student Perception of Formative Assessment Affecting Student Performance
		<sup>2</sup> Lecturer, Faculty of Quality Management, VNU University of Education	
	Didik Nurhadi <sup>1</sup> , Siti Zahro <sup>2</sup>	<sup>1</sup> Associate Professor, Graduate School of Vocational Education, Universitas Negeri Malang, Malang, Indonesia	Entrepreneurship Learning Preparing Vocational High School Students for Prospective Young Entrepreneurs in Indonesia
<sup>2</sup> Lecturer, Department of Creative Industry, Universitas Surabaya, Surabaya, Indonesia			
	Putrinda Inayatul Maula	Doctorate Student, Graduate School of Vocational Education, Universitas Negeri Malang, Indonesia	Augmented Reality in the Implementation of Information and Communication Technology in Engineering and Vocational Teaching in the Post-Pandemic Era

序號	姓名	單位/職稱	題目
場次	技職教育課程發展與教學創新（二）		
論文發表四	黃聖哲、曾芳琪、游鏡可	國立臺灣師範大學工業教育學系博士生	以美國心理學會資優學生教與學原則討論技職體系學生學習需求
	陳筠晶、張品珊	國立臺灣師範大學工業教育學系博士生	COVID-19 疫情下線上學習的教師教學技能、學習態度與感知學習成效之探討—以新竹市技術型高中資訊科技課程為例
論文發表四	Nguyen Hoang Bao Ngoc <sup>1</sup> , Yi-Fang Lee <sup>2</sup> , Tang Thi Thuy <sup>3</sup>	<sup>1</sup> Ph.D., Department of Industrial Education, National Taiwan Normal University	Developing a Teaching Competency Framework to Enhance High School Students' Key Competencies in Vietnam
		<sup>2</sup> Professor, Department of Industrial Education, National Taiwan Normal University	
	邱郁玲	國立臺灣師範大學工業教育學系碩士生	私立技術型高級中等學校教師工作滿意度與轉職傾向之個案研究
場次	技職教育師資暨人力培訓		
論文發表五	江素梅	國立彰化師範大學工業教育及技術研究所博士生	新二代私立高職學生人際互動、學校適應、自我認同之相關研究
	Tang Thuy Thi <sup>1</sup> , Yi-Fang Lee <sup>2</sup> , Duong Tran Hoang Thuy <sup>3</sup>	<sup>1</sup> Lecturer, Department of Measurement and Evaluation, VNU University of Education	Differences in Students' Metacognition by Gender and School Locations in Vietnam
		<sup>2</sup> Professor, Department of Industrial Education, National Taiwan Normal University	
<sup>3</sup> Doctorate Student, Department of Industrial Education, National Taiwan Normal University			

序號	姓名	單位/職稱	題目
	郭弼強 <sup>1</sup> 、胡茹萍 <sup>2</sup>	<sup>1</sup> 國立臺灣師範大學工業教育學系博士後研究員	疫後職場組織創新領導經營模式探討
		<sup>2</sup> 國立臺灣師範大學工業教育學系教授兼系主任	
	江彥廷、江宗皓	國立臺灣師範大學工業教育學系博士生	後疫情時代各國 AI 人工智慧產業及人才培育政策對於我國高級中等以下 AI 人工智慧教育之啟示：以新加坡、日本及中國大陸為例
場次	國際視野（二）		
論文發表六	Vu Minh Hieu <sup>1</sup> , Tang Thi Thuy <sup>2</sup>	<sup>1</sup> Staff, Division of Cooperation and Development, VNU Center for Education Accreditation	Universities' Communication Efforts with Students Influence University Choice Decisions of Grade 12 Students
		<sup>2</sup> Lecturer, Department of Measurement and Evaluation, VNU University of Education	
	Tran Thi Thu Huong	Head of Department, Accreditation and Quality Management, Quality Management Faculty, VNU University of Education, Vietnam National University	Assessment and Evaluation in Online Learning in the Context of Covid 19: New Approaches and Best Practices
	詹勳育 <sup>1</sup> 、陳諺纓 <sup>2</sup>	<sup>1</sup> Assistant Professor, Department of Industrial Education, National Taiwan Normal University	Longitudinal Changes in Self-Efficacy of Math, Professional, and Workshop Courses for Vocational High School Students in Applied Engineering Programs
		<sup>2</sup> Graduate Student, Department of Industrial Education, National Taiwan Normal University	
Nguyen Anh Tuan	Lecturer, Faculty of Quality Management, VNU University of Education	Financial Autonomy in Universities: Current Situation and Recommendations	

## 柒、會場配置圖



一、研討會 Conference Location：

教育學院大樓 2 樓 202 會議廳

Education Building, 2F, Conference Room 202

二、論文發表 Paper Presentation：場次一~場次六 Section I to VI

科技與工程學院大樓 Science and Technology Building

三、高職優質化團隊分享及交流：

科技與工程學院大樓 3 樓 TA305 會議室

Science and Technology Building, 3F, Conference Room TA305

四、國科會應用科學教育學門技職教育 SIG 學門介紹與研究交流 National

Science and Technology Council Applied Science Education -Vocational

Education SIG Workshop：

科技與工程學院大樓 2 樓研討一

Science and Technology Building, 2F, Room TA213



後疫情時代技職教育之發展與挑戰  
國際研討會

論文集

國立臺灣師範大學工業教育學系

## 目錄

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## Certificate of Participation

This is to certify that **Siti Zahro** has participated in the 2023 International Conference of Development and Challenges of Industrial Education in Post-Pandemic Era, held by the National Taiwan Normal University on November 4<sup>th</sup>, 2023.

Chairman of Department of Industrial Education,  
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