



## RESEARCH ARTICLE

## Developing Adult Vocational Training Strategies for Chinese Higher Education Institutes under the Background of Industrial Revolution 4.0

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ARTICLE INFO	ABSTRACT
Received: May 14, 2024	<p>In the era of industrial revolution 4.0, digitalization, robotization and automation have accelerated occupational and skills transitions in China, the employment environment of China has become unprecedentedly volatile and unpredictable. The vocational training opportunities for Chinese workforces upskilling and reskilling along with the changes of employment environment are critical for them to secure the career life, and the key for the Chinese government to cope with the unemployment and maintain harmony in society. In consideration of maximum utilization of the forces of Chinese higher education institutes, this study aimed to develop adult vocational training strategies for Chinese higher education institutes to better organize their own adult vocational training programs and offer qualified vocational training opportunities for local workforces. This study was based on a qualitative design with 17 semi-structured key-informant interviews, thematic analysis method has been used to analyze the obtained data. As a result, adult vocational training strategies consisted of 1 vision statement, 6 goals, 31 actionable strategies have been identified.</p>
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### INTRODUCTION

Under the background of industrial revaluation 4.0, Chinese government is upgrading industrial structure from traditional labor-intensive to technology-intensive and knowledge-intensive industries due to the purpose of improving its industrial efficiency and remaining economic competitiveness as manufacturing hub of the world (Chang, Ding & Liu, 2023). But those technological changes would transform current business model, manufacturing processes, thereby reshaping the nature of work, impacting job tasks, skills, and the distribution of works across the labor market, increasing skill gaps and skill shortages and accelerating skill obsolescence and resulting into skill discontinuity and mass unemployment (Montemayor & Chanda, 2023). World Economic Forum (2023) claimed that the world is embracing industrial revaluation 4.0 by introducing digitalization, robotization and automation into their operations, and estimated that only 66% performed by humans, the remaining 34% of all business-related tasks are performed by machines, and the percentage will be increased up to 42% by 2027. China is also expected to experience a significant portion of global occupational and skills transitions, with up to one-third of

these transitions occurring in the country, by 2030, approximately 220 million Chinese workers, constituting 30 percent of the workforce, may need to switch between occupations due to automation (Bick, Wang & Yu, 2020).

But the current Chinese education systems are failed to adopt themselves to the fast-changing employment environment in the era of industrial revolution 4.0 due to the skills and knowledges students learned in school were quickly out of date after the graduation. To cope with this situation, Chinese government is advocating to establish a learning society that is consistent with promoting lifelong learning opportunities for all as the goal 4 of United states' Sustainable Development Goals (SDGs). And adult vocational training has been globally highlighted as an important component of lifelong education to offer employed or unemployed adult peoples with assessable training opportunities to empower adults with more employability and adaptability for the uncertainties of future employment environment (OECD,2022; UNESCO,2022; WEF,2023). Higher education institutes characterized with good reputation in the local area, plentiful teaching and training facilities, experienced teaching forces, specialized in certain field, various kinds of cooperation with local employers, is perfect match for developing adult vocational training programs such as the "Open Loop University" in America and Industry training organizations (ITOs) In New Zealand (Cheng, 2016; Williams, 2022).

There were 3,012 higher education institutes across China, integrating adult vocational training with higher education institutes is a triple-win solution. One aspect, China is encountering depopulation problem that will soon cause the problem of insufficient student to Chinese higher education institutes, developing adult vocational training would help higher education institutes increase student number. Second aspect, the adult people would have more vocational training opportunities for them to be upskilled and reskilled to improve their employability and cope with the future uncertain employment environments. Third aspect, the more adult vocational training opportunities would accelerate the realization of learning society, and solve the unemployment problems, main the harmony in the society. Thereby, the researcher of this study aims to develop adult vocational training strategies for Chinese higher education institutes to better organize their own adult vocational training programs.

## LITERATURE REVIEW

In the era of industrial revolution 4.0, digitalization, robotization and automation have caused major disruptions to the world of work (Yang, 2023; Li, 2020). Against this backdrop, it becomes ever more important to build an agile workforce capable of navigating the fast-changing Labour market through an inclusive learning platform where no one left behind for timely skilling, reskilling, and upskilling (Right, 2019). Li (2022) stated that great efforts should be taken to make these learning opportunities, such as reskilling and upskilling, accessible, available, and affordable to the workforce as vision of future-ready learning society. the president of China, Xi (2023) also revealed the same view "we must build a learning-oriented society and a learning-oriented nation where lifelong learning is available to all, everyone could learn anytime anywhere to continuously enhance the development of human resources". A vision of adult vocational training shall embrace the fact of fast-changing employment environment, promotes and enables lifelong learning and decent work for both employed and unemployed youth, adults, and older workers as stated in the 4<sup>th</sup> and 8<sup>th</sup> Sustainable Development Goals advocated Since 2015.

Well-established goals of adult vocational training must could satisfy with the needs or characteristics of adult learners. Adult education and training are often characterized by its voluntariness, pragmatism, diversity, and task-oriented approach, reflecting the societal context (Cyr, 1999). Knox (1977) proposed that adults engage in purposeful, systematic, and sustained learning activities to enhance their skills relevant to their life stage. Malcolm Knowles (1973) in his book "The Adult Learner: A Neglected Species" emphasizes the significant differences between adult

learning and childhood learning, highlighting the need for separate studies on these two types of learners. With the maturity of individuals and the increase in practical activities, adults' social life experiences become increasingly abundant, and these experiences play an increasingly important role in individual learning. For adults, learning activities are not primarily dependent on teacher instruction but rely more on their own experiences to understand and master knowledge (Boeren et al, 2023) Adult learners are influenced by their social roles, their learning plans, content, and methods are closely related to their social role tasks, the learning content of adult education often consists of technical knowledge or practical skills, and the imparting of theoretical knowledge also serves practical purposes. Therefore, strengthening practical activities and relating theory to practice during the teaching process often yields better results to primarily fulfilling certain social responsibilities (Comings, 2023). Adult learning activities, the autonomy and independence of learners largely replace the dependence on teachers although they may still rely on the teacher's assistance in individual cases, in terms of dominant psychological needs, they tend to engage in learning independently and autonomously. As adult learners, the purpose of learning gradually shifts from acquiring knowledge to prepare for future work to learning for the direct application of knowledge and engage in learning aimed at addressing specific issues in social life, driven by a strong desire to solve practical problems through learning (Rowan-Kenyon et al, 2023). Regardless of the learning objectives, learning often comes with pressure, most of adult learners 'self-finance their learning, and Some of adult learners used to have failed learning experiences during the period of their youth learning, which may affect the confidence toward completion of learned training programs (Ryu & Fan, 2023).

The actionable strategies in this research would be developed based on educational administration elements of higher education institutes. As enrollment strategies, it is necessary to consider accessibility towards training program of adult learners, it is not only about marketing training information, but also need to consider their enrollment difficulties such as offering them with financial aid (Ahern&Burgazzoli, 2017). As curriculum, developing reskilling and upskilling courses, or any courses are useful for them future career development would be necessary due to adult learners are pragmatic and having a clear learning purpose (Li,2020). As teaching strategies, adult learners prefer setting their own pace, utilizing their preferred learning style, and having flexible learning schedules adaptable to their individual time constraints, otherwise, it would be more challenging for adult learners to balance their multiple work and family responsibilities they hold outside of school (Merriam & Baumgartner, 2020). the training towards adults shall be directly related with industries, thereby the industrial working of teaching forces is very important to ensure the quality of training (Fenwick & Tennant,2020). Besides that, incentives shall be offered to motivate the enthusiasm of teachers. many teachers in higher education rely on outdated knowledge to educate current students, thereby, providing teachers with training related with adult education might be needed. It is obvious that what adult learner trained are expected to use to better develop their career in the society, thereby, social recognition of what they learn are important, hence it is vital to involve the third party from the industries into learners learning assessment.

## **METHODS**

The in-depth interview method is frequently employed in social sciences research. Hyman et al. (1954) assert that interviewing is a universally recognized method of inquiry in social sciences. It characterized as exploratory, noting its reliance on a guide focused on the main topic while allowing for flexibility, despite the predefined topical trajectories, this method facilitates deep discovery (Magaldi & Berler, 2020). Trustworthy qualitative research findings are also important for forming policy and strategies and improving the provision of services in various fields. Thereby, in-depth interview research method has been used for this study to explore the ideas of participants on strategies of adult vocational training program based on higher education institutes. The key criteria for ensuring the quality of qualitative research include credibility, achieved through extended

involvement, persistent observation, and triangulation, Hence, literature review on adult vocational strategies has been done prior to collect data, and 17 participants who has administrative working experiences in the related field of adult education and adult training from different higher education institutes or governmental agencies have been selected with purposive sampling to participate into this study. Furthermore, three interview guiding questions were designed as semi-structured interview form as followed table 1 to guide the interview, besides that, an IOC test (Item Objective Congruence) towards semi-structured interview form have been done by five experts, the IOC score of three interview questions are respectively 1.0, 0.8 and 0.8 which all are higher than 0.5, the IOC values illustrated that the interview guiding questions are qualified to guide the interview.

**Table 1: semi-structured interview form**

<b>Themes</b>	<b>Example questions</b>
Vison	What is the suitable vision of adult vocational training in higher education institutes in this era?
Goals	To achieve above vision, what goals shall be established for adult vocational training of higher education institutes?
Strategies	To achieve above goals, What strategies shall be adopted in terms of educational administration?

## **DATA ANALYSIS**

The richness of qualitative research lies in its ability to gather nuanced data. thematic analysis is a systematic and renewable technique in which some words of a text are summarized in smaller content categories. It is a step-by-step process of analyzing and converting the raw data into themes of data. The major steps in a thematic analysis are familiarizing with the data, generating the initial codes, searching for themes, reviewing the identified themes, and producing the manuscripts (Braun&Clarke, 2006). Validity in this process is maintained through a systematic coding approach, allowing researchers to interpret subjective data in a rigorous and scientific manner (Moretti et al., 2011). In addition, this study was conducted in accordance with the guidelines for credibility and trustworthiness as outlined by Lincoln and Guba (1986). They recommend several techniques, such as persistent observation, prolonged engagement, and peer debriefing, to ensure a study's credibility. Accordingly, a code was only identified after repeated observations, demonstrating persistent observation of the code in the collected data. Data was gathered from 17 participants who from different employers to facilitate possible triangulation. Additionally, there was related literature review have been done before coding to improve the identification of relevant and important codes. To ensure the study's transferability, detailed descriptions of the data-derived codes were provided as needed. Confirmability was maintained by thematizing issues found in the data rather than presenting the participant's opinion. The data was not altered to fit the study.

## **RESULTS**

The thematic analysis resulted in the identification of three themes, with underlying sub-themes, that contributed to the development of adult vocational training strategy consisted of vison, goals and actionable strategies. each of which are discussed below. Each of the themes were interconnected and some of the sub-themes fit into more than one theme based on the different ways in which it was discussed by participants.

### **Vision identified**

Many participants mentioned that technologies brought with a lot of uncertainties in our working environments, people shall ensure their resilience in future career development through lifelong learning. Besides that, lots of participants also illustrated that Chinese government are promoting in constructing a learning society to benefit all people with the opportunities of learning anytime anywhere. One of the participants was descript as followed: "As higher education institutions, we

should take on more social responsibilities by developing vocational training programs where everyone can afford to learn and have the flexibility to study anytime and anywhere to realize learning society in China". furthermore, the importance of matching vocational training with industrial needs has also been emphasized during the interview due to universities education and training lags behind society, what students learn often disconnected from reality, teaching material appearing outdated, the teaching software available on university computers also significantly lags behind current industrial standards. thereby, the adult vocational training of higher education institutes shall be the pioneer in constructing learning society, shall be able to cultivate learned with skills required by industries and being a platform where everyone could access for their career development as showed in the table 2. As an example of this, one participant said:

*"In today's rapidly developing society and technology landscape, the job market is also changing rapidly. Many of the subjects taught in universities are outdated or overly theoretical, lacking practical skills. This often leads to many students facing unemployment right after graduation. Besides that many people only discover what they want to do and learn after entering the workforce. However, the current situation is such that by the time they realize what they want to learn, opportunities may have passed them by. Now, our government is currently working towards building a learning society, where lifelong learning has become a nationwide movement. However, constructing a true learning society requires more than just slogans. People need accessible places where they can learn anytime, anywhere. Therefore, vocational training should be an essential part of lifelong learning."*

**Table 2: Vison**

Theme	Subtheme
Vison	As constructing learning society pioneer that cultivates skilled professionals with industrial needs, offering everyone accessible opportunities for career development

### Goals identified

This theme is about the goals which are expected to be achieved to realize above vision, according to the interview data, this theme has been categorized into six subthemes as followed table 3:

Goal 1: to reskill and upskill learners

Skills are important to today's employment market, specially, technologies are facilitating the skill iteration, mastering certain up-to-date skills could directly improve people's employability due to the employers are more welcome multi-skilled employees. Besides that, one of the participants expressed that "people with muti-skills are more likely to achieve entrepreneurial success". All the participants have illustrated that reskilling and upskilling are the main reason for adult people to participate into vocational training programs particular for the skills that could be used directly in the current workplace environment. As an example of this, one participant said:

*"Adult education is highly utilitarian in nature. As a vocational training program, its primary goal is to enhance the participants' specific occupational skills, ideally those that can be directly applied in their current workplace environments."*

Goal 2: to offer an accessible vocational training to learners

The industry 4.0 workplace is characterized by the changing nature of work, resulting in rapid obsolescence of knowledge and frequent disruption to jobs that affect everyone in the world, intensified the needs for workers to reskill and upskill themselves. Accessible vocational training is vital for them to adopt quickly to this changing world. As an example of this, one participant said:

*“Adult vocational training in the era of industrial 4.0 shall be accessible to all people, otherwise there are no way to realize a real learning oriented society”*

Goal 3: to extend interpersonal network of learners

Nowadays, the importance of networking has become increasingly evident. Networking relationships not only bring more opportunities and resources to individuals but also foster social interactions and personal growth. Networking can provide individuals with valuable support and resources. Connecting with people from diverse backgrounds and industries allows access to various resources such as professional knowledge, shared experiences, and insider industry information. thereby, help learners to explore their social network is also beneficial with their future career development. As an example of this, one participant said:

*“In China, it's a society where interpersonal relationships (guanxi) are crucial. By building connections and resources, people can access information from various industries, which is very helpful for their future career development. In this environment, networking often proves more important than individual technical skills.”*

Goal 4:to provide comprehensive counseling for learners

Adult learners are also needed counseling services, and their high stress levels can lead to unhealthy psychological states which eventually affect their learning. Some may feel inferior due to their career, educational background, or job status. Others, because of their age, struggle to keep up with learning, which affects their confidence in education. besides that, what they also need to have guidance to guide them what to learn for their career. As an example of this, one participant said:

*“Adults also need counseling services, and their high stress levels can lead to unhealthy psychological states. Some may feel inferior due to their career, educational background, or job status. Others, because of their age, struggle to keep up with learning, which affects their confidence in education. Some students in their middle age want to change their career, and it is necessary to provide them with corresponding career planning when facing various skills and positions so that they can be more confident in subsequent training.”*

Goal 5: to customize training schedule for learners

Adult learners come from diverse backgrounds, with varying educational experiences, work schedules, and personal responsibilities, flexibility in adult vocational training must be provided to accommodates this diversity, allowing individuals to pursue training while managing other commitments such as work, family, and community responsibilities. most of the participants stated that adult learners prefer setting their own pace, utilizing their preferred learning style, and having flexible learning schedules adaptable to their individual time constraints. Lacking flexible scheduling may make it more challenging for adult learners to balance their multiple work and family responsibilities they hold outside of school.

*“Adults play many roles in society: they are someone's child, a parent, a spouse, an employee, among others. Their time is limited, especially with many companies implementing alternate workweek schedules. Sometimes, they may want to learn but lack the energy or opportunity. Therefore, vocational training programs need to be flexible enough to accommodate these various demands and schedules.”*

Goal 6: to qualify learners with social approval

The higher education institutes are required to involve the trained skills relevant industries into the evaluation and accreditation process, to ensure the trained skills are required by them. Many individual institutions are creating systems that make it easier to move between non-credit and credit courses and programs Articulation agreements between institutions help students know in advance which courses will receive credit at their new school.

*“An important aspect of adult vocational training is how to gain recognition from society, especially from employers, for the skills you have acquired. For businesses during recruitment, they often have limited time to assess your knowledge and skills. Therefore, it is crucial that the training programs you choose are recognized and valued by employers.”*

**Table 3: Goals**

Theme	Subtheme
Goals	to reskill and upskill learners
	to offer an accessible vocational training to learners
	to extend interpersonal network of learners
	to provide comprehensive counseling for learners
	to customize training schedule for learners
	to qualify learners with social approval

### **Actionable Strategies identified**

This theme is about the actionable strategies which are expected to be completed, thereby realizing above vision and Goals, according to the interview data, this theme has been categorized into 5 Aspects and 31 subthemes as specific actionable strategies as followed table 4:

#### **Enrollment strategies**

According to the interview data, there were 5 subthemes as actionable strategies in term of enrollment strategies have been identified as followed: 1) Establishing new media operation department, there are three participants mentioned this view due to social media has been playing an important tools of receive information in our life, in particular for young people, Hence, establishing new media operation department would be able to easier to market the vocational training information to the potential learners; 2) Establishing career guidance system, a clear career planning would make learners become more confident with future career, besides that clear career goals would be able to motivate learners' studying. Furthermore, *the career guidance also could contain interview skills training courses that provide training on interview techniques, mock interviews, and other related skills. This helps students enhance their confidence and ability to handle interviews effectively;* 3) Creating low barriers to entrance, Adult vocational program shall provide access to all people, educational background, working experiences and age shall not be the barriers for them to obtain training opportunities, furthermore, various of backgrounds are beneficial to each others in term of exchanging ideas in studying, working and life 4) Establishing psychological guidance office, there are adult learners used to have failed learning experiences during the period of their youth learning, which may affect the confidence toward completion of learned training programs, besides that, the mental pressures also could be come from working environment and family which might eventually affects the studying; 5) Offering various of tuition payment options, the vocational training in the learning society is not only for rich people, but for all, the unemployed people are most likely in a poor financial status, but those people also are the one who has the most strong motivation towards vocational training. Thereby, the tuition payment shall be in various forms, such as tuition installments, tuition loan with low interest or scholarship so on, to help the learners who are in financial difficulties get back to the normal track.

#### **Curriculum strategies**

With the analysis of interview data, there were 5 subthemes as actionable strategies in term of curriculum have been identified as followed: 1) Establishing fragmented and project-based course selection system, fragmented courses system refers to dividing the traditional courses into mini-courses based on specific topic, which immerse learners into mini-courses supermarket where learners could select mini-courses according to their available fragmented time. Besides that, the

mini courses shall be grouped by certain business project due to real business projects involved multiple courses and skills, so grouping courses around projects helps students better understand future learning needs and the overall scope of the project, it is also beneficial for those who want to start up their own business after trainings. Furthermore, learners could gain deeper knowledge through actively exploring challenges and issues in the real business projects ; 2) Establishing vocational training course based on strength of higher education institute, It can better utilize the school's existing educational resources, teaching staff, instructional equipment, and school-enterprise relationships; 3) Developing training courses based on specific corporate, which could strengthens the cooperation between training program and industries and ensure the employment of the learners 4) Establishing industrial database system by attending industry forum, seminar ,field trip, and establishing information sharing platform with industry to obtain the industry dynamics, update the training contents, and ensure the trainings are match with industrial needs. 5) Developing vocational certificate based courses, vocational certificates are vital in career development, developing vocational certificate training courses are to satisfy the need of learners.

### **Teaching strategies**

With the analysis of interview data, there were 9 subthemes as actionable strategies in term of teaching management have been identified as followed: During the interview, adult learning style has been frequently mentioned by the participants, as one of the participants said that adult learners typically have clear learning goals and strong motivations. They often engage in learning to meet specific career needs and address workplace challenges. Therefore, their learning is highly targeted, demanding that the content they study is directly relevant to their work and applicable in practice thereby, participants advised that the teaching methods for adult learning shall be Hands on learning, Mentorship. With the maturity of individuals and the increase in practical activities, adults' social life experiences become increasingly abundant, and these experiences play an increasingly important role in individual learning. For adults, learning activities are not primarily dependent on teacher instruction but rely more on their own experiences to understand and master knowledge, thereby case study-based teaching method and Group discussion also be mentioned by participants. in addition, adult learners are influenced by their social roles, their learning plans, content, and methods are closely related to their social role tasks, the learning content of adult education often consists of technical knowledge or practical skills, and the imparting of theoretical knowledge also serves practical purposes. Therefore, strengthening practical activities and relating theory to practice during the teaching process often yields better results to primarily fulfilling certain social responsibilities. Thereby, field trip, workshop-based teaching method and simulation lab-based teaching method are also necessary to consider into adult teaching to let learners better know how the learning knowledge and skill are applied into working, thereby, workshop-based teaching methods and simulation lab-based teaching also be mentioned by many of participants. Blended teaching method is most frequentist mentioned due to adult learners have limited time because they have various role to play in their family and working, blended teaching method could offer them flexibilities in learning.

### **Human resources strategies**

With the analysis of interview data, there were 6 subthemes as actionable strategies in term of human resources management have been identified as followed: 1) Establishing industrial experience prioritized teaching teams, participants mentioned that most of lecturers in higher education institutes are lacking the industrial working experiences because they work as lecturers in higher education institutes after graduation. But as vocational training, industrial working experiences are very important to training, due to it is the things that could inspire adult learners to think in working reality. Thereby recruiting training teachers who are rich of industrial experience is important to the quality of vocational training program. 2 ) Organizing leadership training towards program leaders,



A leader is the one who has specific characteristic features that motivate individuals in the organization to help reach the common goal that conveys his or her experiences, the one who prepares them to change by interacting with them, motivates the staff by creating a synergy, exceeds the usual practices and authorities, and affects and directs the behaviors, beliefs, and attitudes of the staff who are under his or her management. Besides that, leaders in vocational training program required to maintain a good relationship with industries and governments, thereby, necessary training towards leaders are also important to the success of the program. 3) Establishing learner's feedback-based motivation mechanism for teachers, by integrating learners results and feedback with faculty and staff salaries and bonuses would motivate faculties staff and lecturers to better serve learners and think in learners' position; 4) Constructing channels for training teacher to participate into industries to increase their understanding about industrial reality and needs, and delivery industrial information back to class. 5) Organizing fellowship activities and alumni activities which serves as a lifelong link between alumni and their alma mater, acting as a platform were integrating alumni resources, establishing smooth, long-term, and close communication channels for resource sharing among alumni. Furthermore, those activities also could provide a window for various post-graduation services to alumni, this enhances the cohesion of the school, providing resources and assistance for alumni in lifelong learning, career development, and success; 6) Organizing job fairs, providing opportunities for students to interact with employers facilitates access to comprehensive employment information. Students can gain insights into industry demands and job prospects, deepening mutual understanding and enhancing their career planning and competitiveness in the job market.

### **Evaluation and accreditation Strategies**

With the analysis of interview data, there were 6 subthemes as actionable strategies in term of evaluation and accreditation have been identified as followed : 1) Establishing interuniversity credit bank, so that the learners would be able to transfer the learning credits from different programs, meanwhile, it would be able to increase the recognition of the vocational program among higher education institutes; 2) Involving the third-party evaluators from industries to let related industries to recognize what learners form specific vocational training programs, besides that the training program also could be examine by the industries experts to update the training according to the industrial needs; 3) Using workplace-based assessment, which contains formative assessment and summative assessment, spans across multiple domains and over the entire duration of the workplace learning, and catering to holistic assessment with structured measures, real-time feedback, and continuous professional development, the assessed results could be serves as professional performance to employers; 4)Organizing follow-up survey, to understand students' current working statues, to get the feedback from students to improve training quality, and know the current industry's needs, to understand employers' attitudes towards students; 5) National/provincial level vocational skills competition, Skills competitions provide a platform for vocational training programs to interact with enterprises, offering opportunities for these programs to conduct in-depth market research, target market changes, closely align with business needs, and ultimately cultivate more highly skilled talents tailored to industry demands. as to students, they could use the competition results to approve their abilities to employers; 6) Taking national vocational standards as references.

National vocational training standards are crucial safeguards ensuring the effective implementation of vocational qualification certificate systems. They provide clear learning objectives and assessment criteria for learners, while also offering standardized guidance and supervision for training institutions.

**Table 4: Actionable Strategies**

Theme	Categories	Subtheme
Actionable Strategies	Enrollment strategies	Establishing new media operation department
		Establishing career guidance system
		Creating low barriers to entrance
		Establishing psychological guidance office
		Offering various of tuition payment options
	Curriculum strategies	Establishing flexible project-based course selection system
		Establishing vocational training course based on strength of higher education institute
		Developing training courses based on specific corporate
		Establishing industrial database system
		Developing vocational certificate-based courses
	Teaching strategies	Hands on learning
		Mentorship teaching
		Workshop based learning
		Field trip/ study trip
		Simulation lab-based learning
		Blended learning
		Case study-based learning
		Role plays based learning
		Group discussion-based learning
	Human resource strategies	Establishing industrial experience prioritized teaching teams
Organizing leadership training towards program leaders		
Establishing learner's feedback-based motivation mechanism for teachers		
Constructing channels for training teacher to participate into industries		
Organizing fellowship activities and alumni activities		

		Organizing job fairs
	Evaluation and accreditation strategies	Establishing interuniversity credit bank
		Involving the third-party evaluators from industries
		Using workplace-based assessment
		Organizing Follow-up survey
		Organizing national/provincial level vocational skills competition
		Taking national vocational standards as references

## DISCUSSION AND CONCLUSION

As the results showed that adult learners are significantly different from full-time youth students, developing strategies for adult vocational training is necessary to consider the characteristics of adult learners. Rowan-Kenyon et al (2023) stated that the adult learning purpose gradually shifts from acquiring knowledge to prepare for future work to learning for the direct application of knowledge and engage in learning aimed at addressing specific issues in social life, driven by a strong desire to solve practical problems through learning, which the result of this paper also showed the same view by proposed project based courses system, and workplace based assessment. Comings (2023) stated that strengthening practical activities and relating theory to practice during the teaching process often yields better results to primarily fulfilling certain social responsibilities, which also reflected in the result of this paper by proposing the mentorship learning and hand on skills learning shall be used in adult teaching. Ryu & Fan (2023) stated that some of adult learners used to have failed learning experiences during the period of their youth learning, which may affect the confidence toward completion of learned training programs, which also are common with the result of this paper showing the need of establishing psychological guidance office. In conclusion, it is necessary to consider the characteristic of adult learners needs into developing strategies for adult vocational training in the higher education institutes.

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