



Training Level Improvement and Student Development in Chinese Vocational Colleges

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Fu Lili

Master of Arts in Educational Leadership & Management, Lyceum of the Philippines-Batangas, Batangas City, Philippines

Abstract

Vocational education is significant in the ever-changing global marketplace given that it equips learners with tangible abilities and knowledge that are required for different industries. Heeding this importance, the vocational education sector in China is currently facing a crisis that urgently needs attention and intervention. Although vocational colleges have played a crucial role in cultivating skilled labor, there is still a significant concern about the adequacy and effectiveness of training programs. Hence, this paper points out that there is a gap between the training provided and the actual development needs of students, resulting in unsatisfactory results in both academic and professional fields. In reference to this gap, this study examined the training level improvement and the student development of students in Chinese vocational colleges. It described the profile of the respondents; determined their training level improvement in terms of academic support, personal growth, and institutional environment; identified their development in terms of personal development, professional skills, and social engagement; tested the differences in responses when they are grouped according to profile; tested the relationship between training level and student development; and proposed a plan of action to enhance student internship development. The descriptive method was employed in this study. A total of 650 college students were selected from six vocational schools in Mainland China, including Guangzhou Panyu Polytechnic University. Adapted from the study of Xuefei and Ying (2020), the instrument was subjected to reliability test. Frequency, percentage, weighted mean, one-way ANOVA, t-test, and Pearson-r were used to treat and analyze the data. As to the findings, majority of the respondents were female, in their sophomore year, majoring in Literature, and with 6-10 hours length of training. Most of them agreed on the indicators regarding training level improvement in terms of academic support, personal growth, and institutional environment. A large proportion also agreed on the indicators pertaining to student development in terms of personal development, professional skills, and social engagement. When grouped according to profile, significant differences exist on responses regarding training level improvement and student development as well as when grouped according to sex and length of training. However, no significant differences were yielded when grouped as to year level and major. Additionally, findings showed significant relationship between training level improvement and student development. An enhanced plan of action to improve student internship development was proposed.

Keywords: training improvement, student development, vocational education, Chinese vocational colleges



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INTRODUCTION

Vocational education plays a vital role in the dynamic global economy by equipping learners with practical competencies and industry-relevant knowledge. In China, vocational colleges are a fundamental component of the national education system, tasked with developing a skilled workforce that meets the demands of a highly competitive labor market. Despite significant investments and government policy support, there remains an urgent need to improve both the quality of

training and the developmental outcomes for students enrolled in these institutions.

Currently, China's vocational education sector faces considerable challenges that necessitate immediate intervention. While vocational colleges have contributed significantly to training skilled workers, concerns persist about the adequacy and effectiveness of their programs. These institutions are expected not only to impart technical and professional skills but also to foster students' personal and social development. However, recent reports highlight

a misalignment between the training provided and the actual developmental needs of students, leading to unsatisfactory academic and professional results.

As industries evolve rapidly due to the constant emergence of new technologies and processes, enhanced vocational training becomes essential for keeping employees proficient and up to date with current industry standards. This is especially critical in sectors such as healthcare, technology, manufacturing, and construction. Improved vocational programs can equip learners with practical skills and industry-specific knowledge, thereby increasing employability and long-term career opportunities.

Ling et al. (2023) emphasized that the rapid expansion of vocational education in China aims primarily at enhancing its overall quality. Traditionally, higher vocational education relied on a knowledge-based approach, similar to that of general or intermediate education, but began integrating ability-based education in the early 1990s. The authors argue that the understanding of vocational education at the higher education level should not be restricted to the educational sector alone.

Manoli et al. (2022) identified cognitive trends associated with the long-term success of vocational training through the use of machine learning techniques. Their findings revealed that successful vocational outcomes were associated with regular assessment of verbal memory, visual memory recall, and skills related to problem-solving and planning. Conversely, less successful outcomes were linked to deficits in these cognitive domains.

Sánchez et al. (2023) evaluated a life coaching initiative in Ceuta aimed at enhancing the adaptability, motivation, socio-emotional skills, and overall employability of vocational students in the beauty and hairdressing fields. The intervention showed significant improvements in students' psychosocial development, self-awareness, and motivation, highlighting the importance of cross-cutting skills in vocational training.

Güngör (2020) outlined numerous challenges facing vocational education, including inadequate funding, poor infrastructure, misalignment with industry needs, insufficient career guidance, and systemic issues within educational administration.

Mandviwalla et al. (2023) described student development as a holistic process encompassing skill acquisition, knowledge growth, social integration, and personal development. Using multifaceted adaptive system theory, their framework explored mechanisms for fostering these outcomes and emphasized the use of performance indicators as real-time feedback for improvement.

Effective vocational education focuses on equipping students with job-specific knowledge and skills. Strengthening student development programs through collaboration with industry stakeholders ensures alignment with both current and emerging labor market demands. This approach enhances graduates' readiness for employment and supports long-term career success.

Giatman et al. (2023) reported that many vocational students experience anxiety over future employment prospects, often stemming from limited exposure to real-world industry practices. Their study identified five key themes: job characteristics, professional development support, career options, informed decision-making, and vocational career planning.

A notable gap in vocational training is the limited access to hands-on experiences such as internships, apprenticeships, and collaborative projects with industry. Without these experiential learning opportunities, it becomes difficult to assess and improve training effectiveness or ensure high-quality standards.

Vocational education also plays a transformative role in supporting students from disadvantaged backgrounds, offering pathways to upward mobility. This study aimed to explore strategies for enhancing support systems, such as mentorship, career counseling, and soft

skills training, all of which are critical for comprehensive student development.

Enhancing the quality of vocational training and student development can significantly contribute to cultivating a skilled and competitive workforce. Addressing existing gaps in vocational education helps reduce unemployment and ensures that graduates are equipped with the competencies required by employers.

The primary objective of this study was to assess training quality and student development among Chinese vocational college students, with the goal of formulating a strategic plan to improve internship outcomes. Specifically, the study examined the demographic profiles of the respondents (e.g., sex, year level, major, and training duration), assessed the improvements in training across dimensions such as academic support, personal growth, and institutional environment, and evaluated student development in terms of personal, professional, and social outcomes. Furthermore, the study tested the differences in responses based on demographic variables, examined the relationship between training quality and student development, and proposed a targeted action plan to enhance student training experiences.

LITERATURES

Curriculum and Student Development. Curriculum development plays a crucial role in enhancing student engagement, retention, and character achievement. E-learning integration into curricula can improve student engagement and readiness (Kuswandi et al., 2021). At the University of East London, curriculum redesign led to improved student progression and retention rates (Prince, 2019). Web-based platforms can support students' academic progression and portfolio management, as demonstrated by a study involving 40 students and program administrators (Kikuchi et al., 2023). Additionally, a student-centered learning curriculum can effectively promote character education, though careful attention must be paid to learning materials, lesson plans, and

teaching methods (Amaliyah & Pramudiani, 2020). These studies highlight the importance of innovative curriculum development approaches in addressing various aspects of student development, from academic progress to character formation, and suggest that well-designed curricula can significantly impact student success and engagement in higher education.

Student Employability and Career Readiness. Recent studies highlight the importance of employability-focused curricula in enhancing students' career readiness. Embedding employability activities throughout degree programs, particularly in first-year subjects, has been shown to effectively prepare students for future employment (Harris-Reeves et al., 2024). University-level employability skills development modules have demonstrated high effectiveness, with students reporting increased confidence in facing career challenges (Perera et al., 2020). Internship programs are also crucial in developing employability skills and positively influencing students' attitudes towards future careers (Bawica, 2021). However, some students, particularly in fields like architecture, may perceive gaps in their employability readiness, suggesting areas for improvement in formal education (Oluwatayo et al., 2016). Overall, these studies emphasize the value of integrating career readiness opportunities into higher education curricula, including assessments, modules, and internships, to better prepare students for the competitive job market.

Faculty Capacity and Student Development. Faculty development programs play a crucial role in enhancing teaching capacity and student learning outcomes. These programs can improve faculty's intercultural teaching skills, develop student learning outcomes for study abroad programs, and support the transition to online learning during crises like COVID-19 (Hoff & Medina, 2022; Morelock et al., 2023). They contribute to both individual and organizational capacity development by enhancing attitudes, values, and skills (Salajegheh et al., 2024). Importantly, faculty development initiatives can extend beyond individual participants to benefit

a wider community of practice, as exemplified by the African concept of ubuntu (Frantz et al., 2019). Research suggests that creating spaces for faculty dialogue, providing protected time and support, and recognizing pre-existing skills can lead to more effective capacity development (Hoff & Medina, 2022; Frantz et al., 2019). However, there is a need to ensure that these efforts also increase capacity for students, not just faculty members (Morelock et al., 2023).

METHODS

Research Design. This study employed the descriptive method as it evaluated and described the extent of improvement in training levels and student growth among the respondents. According to McCombes (2022), descriptive research aims to offer a precise and systematic portrayal of a certain collection of individuals, situations, and occurrences. Descriptive-comparative and correlation were specifically used for the inferential problems. Comparative was used to determine the comparison of responses based on respondents' demographic variables, while correlation design examined the relationship between training quality and student development.

Populations, Samples, and Sampling Technique. The researcher randomly selected 650 college students from six vocational schools in Mainland China including Guangzhou Panyu Polytechnic University and the distribution were as follows: School A (112), School B (100), School C (120), School D (95), and School E (115).

The respondents were based on the list given by each participating schools. The researcher used the Raosoft calculator application to elicit the sample size. Based on a 0.05 sample size, 0.60 effect size, and 95% estimated power analysis, the computed sample size is 650. Simple random sampling technique was used to select the teachers to be surveyed.

Research Instrument. This study utilized a quantitative research approach to collect data. The researcher prepared an online survey using Google form. The survey has four parts. In Part

I, respondents were asked to provide demographic information about themselves. This included their sex, year level, major, and length of training. Part II focused on determining the respondents' training level improvement in terms of academic support, personal growth, and institutional environment wherein respondents were asked to rate their level of agreement on a scale ranging from Strongly Agree (4) to Strongly Disagree (1). The questionnaire was adapted from the study of Xuefei and Ying (2020). In Part III, respondents determined their level of agreement regarding student development in terms of personal development, professional skills, and social engagement and the same scale was used. It was derived from the modified case study of Chunxia et al. (2023).

The contents of the instrument used in this study underwent rigorous verification and validation processes to ensure its reliability. The instrument was first examined and validated by a panel of experts in the field and ensured that it adequately measures the intended constructs. As shown in Table 1, all sections of the instrument resulted to acceptable to good levels of reliability. These results indicated that the instrument consistently measured the intended constructs and can be relied upon to provide accurate and consistent data.

Table 1
Reliability Test Results

Indicators	Cronbach Alpha	Remarks
Academic Support	0.776	Acceptable
Personal Growth	0.739	Acceptable
Institutional Environment	0.717	Acceptable
Personal Development	0.849	Good
Professional Skills	0.807	Good
Social Environment	0.874	Good

Data Gathering Procedures. The first step before the actual testing was to seek approval and a letter of consent to conduct research in the six vocational schools in Mainland China. After obtaining approval, two letters, one indicating approval and one indicating agreement, were provided to the principal, math teachers, and parents of the selected school for

the convenience of virtual management investigation.

The questionnaires were distributed to the respondents upon approval. The students were given enough time to answer the questions. Regular monitoring of responses was conducted to evaluate the completeness of submitted responses. Subsequent actions were taken through virtual communication, email, phone calls, and personal visits to vocational schools. After gathering the data, the researcher collected the responses, checked for missing responses, input the data into SPSS software, tallied, and applied statistical treatment.

Data Analysis. Quantitative data analysis was used in this study to interpret the data. Frequency and Percentage distribution was used to describe the profile of the respondents in terms of sex, year level, major and length of training. Weighted mean and ranking were used to determine the respondents' training level improvement in terms of academic support, personal growth, and institutional environment and identify the respondents' development in terms of personal development, professional skills, and social engagement. Analysis of Variance was used to test the differences in responses when grouped according to profile; Pearson's r correlation was used to test the relationship between training level and student development. All statistical analyses and data processing were conducted using SPSS version 26, a widely used statistical software package.

RESULTS AND DISCUSSION

Table 2 shows the percentage distribution of the respondents' profile based on their sex, year level, major, and length of training. As to sex, results showed a disparity with 228 or 56% of the respondents being female and 178 or 44% are male. It was apparent that female students outweighed male students. There may be variations in learning styles between males and females, with males likely to prefer aggressive and pragmatic approaches, while females may lean towards collaborative and theoretical ways. Some vocational fields have a higher

proportion of men, whereas others have a higher proportion of women. This disparity could affect the training experience and development options accessible to students, potentially showing a preference for one gender over the other.

Table 2
Percentage Distribution of the Respondents Profile

Sex	Frequency	Percentage %
Male	178	44.0
Female	227	56.0
Year Level		
Freshman	132	32.6
Sophomore	185	45.7
Junior	79	19.5
Senior	9	2.2
Major		
Literature	245	60.5
Engineering	84	20.7
Economics	27	6.7
Management	36	8.9
Education	13	3.2
Length of Training		
1-5 hours	23	5.7
6-10 hours	196	48.4
11-15 hours	124	30.6
16-20 hours	47	11.6
21 hours and above	15	3.7

in terms of year level, 185 of the respondents were Sophomores or 45.7% of the total respondents. Whereas Freshmen were 132 or 32.6% of the total respondents. Junior respondents were 79 or 19.5% and lastly, Seniors were 9 or 2.2% of the total respondents. Over time, students may benefit from previous experiences and enhance their training and development methods. The distribution in major showed that most of the respondents were taking Literature with 245 or 60.5% of the total respondents. This was followed by Engineering majors with 84 or 20.7%; Management, with 36 or 8.9%, Economics, with 27 or 6.7%; and finally, Education with 13 or 3.2% of the total respondents. In terms of length of training, 196 or 48.4% of the respondents had 6-10 hours spent; 124 or 30.6% had 11-15 hours; 47 or 11.6%

had 16–20 hours; 23 or 5.7% had 1–5 hours; and finally, 15 or 3.7% had 21 hours and above spent in training. Fields of study that involve a broad array of topics and abilities may necessitate extended periods of training in order to thoroughly cover every vital information

Table 3
Summary Table of Training Level Improvement

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Academic Support	3.15	Agree	1.5
2. Personal Growth	3.15	Agree	1.5
3. Institutional Environment	3.14	Agree	3
Composite Mean	3.15	Agree	

Table 3 presents the summarized results of training level improvement. According to the data, the respondents agreed with all the indicators, as evidenced by the composite mean of 3.15. Item 2, personal growth, and item 1, academic support, had the highest results with an equal weighted mean of 3.15. This was followed by Item 3, institutional environment, with a weighted mean of 3.14.

The integration of academic support, personal growth, and the institutional environment may be imperative for elevating training levels at vocational colleges. This holistic approach to education may yield benefits to learners, teachers, and institutions as a whole. Providing students with access to educational resources, one-on-one instruction, and guidance from mentors guarantees that they possess the resources necessary to comprehend intricate ideas and achieve academic success. Personal growth programs may cultivate resilience and adaptation, equipping students to effectively navigate obstacles in both their personal and professional spheres. Competent training programs may result in improved interactions with industry partners, so bolstering employment chances and offering invaluable hands-on learning experiences.

Bükki and Fehérvári (2021) examined the extent of the interaction between teachers in Hungarian vocational schools and training institutions by conducting an online poll of instructors. Collaboration among teachers has

been well recognized for its substantial advantages, such as enhanced drive, fulfillment in work, and personal and group effectiveness, as well as its contribution to the professional growth of teachers and the improvement of schools. According to their research, Hungarian VET teachers commonly engage in sharing-type teamwork, which includes professional conversations and material exchanges. They have a lower likelihood of engaging in more advanced collaborative activities that require a higher degree of mutual dependence, and they value the effects of deeper collaboration to a lesser extent.

The respondents' assessments of student development in terms of personal development were shown in Table 7. The composite mean of 2.94 signified an agreement among the respondents. Taking the highest rank was Item 10, with a weighted mean of 2.99, indicated an agreement among respondents that the school trains the students to work independently. The second highest ranking indicator was item 7, with a weighted mean of 2.98, indicated that the school believes in lifelong passion for learning. The third-highest ranking factor was Item 6, with a weighted mean of 2.97, whereas respondents agreed the school advocates effective time management skills.

Table 4 presents the summarized results of student development. According to the data, the respondents agreed with all the indicators, as evidenced by the composite mean of 2.94. These indicators were personal development, professional skills, and social engagement. All the given indicators recorded an equal weighted mean of 2.94 and were verbally interpreted as agree.

Developing students in terms of personal development, professional skills, and social engagement may be key elements for cultivating individuals who are competent and equipped for their vocations and responsibilities as engaged and productive members of society. Personal growth may provide students with the capacity to effectively manage stress and overcome setbacks, allowing them to quickly recover from difficult

situations. Building expertise in tools and technology relevant to a sector may empower students with the necessary skills to make immediate and substantial contributions to their professional endeavors. Participating in social activities may inspire a grasp of notions, such as social equity, morality, and the value of making positive contributions to society.

Table 4
Summary Table of Student Development

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Personal Development	2.94	Agree	2
2. Professional Skills	2.94	Agree	2
3. Social Engagement	2.94	Agree	2
Composite Mean	2.94	Agree	

Wong and Kaur (2018) evaluated how vocational recognition procedures and beliefs about motivation influenced student involvement in a sample of 216 undergraduate students. Regression research revealed a positive correlation between in-depth career exploration and student engagement characteristics, whereas professional self-doubt was a negative predictor. Moreover, students' subjective assessment of the importance of schoolwork played a crucial role in moderating these associations. Although there are notable connections, alternative vocational identity processes also exist. However, the present results clearly show the significance of vocational identity formation in undergraduate students' learning. This indicated a requirement for further treatment or career counseling services focused on identity in university and pre-university settings.

Table 5 presents the comparison of responses on training level improvement. It was observed that significant differences exist on indicators when grouped according to sex and length of training since the obtained alpha levels were greater than the p-values. This implies that the responses differ statistically. In terms of year level, and major, it was recorded that there were no significant differences since the obtained p-values all greater than the alpha level. This meant that the responses did not differ statistically.

Males and females may have varied needs for scholastic support contingent upon individuals' diverse backgrounds, experiences, and academic disciplines. Personal development possibilities may be customized in distinct ways for individuals of different sexes. Inclusive institutions that ensure equitable access to resources such as laboratories, cutting-edge technology, and networking platforms may efficiently tackle and reduce gender gaps in training outcomes. The length of training and the organizational context may collectively impact the degree of personal growth.

Table 5
Differences in Training Level Improvement when Grouped According to Profile

Sex	F-value	p-value	Interpretation
Academic Support	19.998	.000	Significant
Personal Growth	21.546	.000	Significant
Institutional Environment	19.868	.000	Significant
Year Level			
Academic Support	1.042	.374	Not Significant
Personal Growth	.753	.521	Not Significant
Institutional Environment	1.115	.343	Not Significant
Major			
Academic Support	.276	.893	Not Significant
Personal Growth	.125	.974	Not Significant
Institutional Environment	.497	.738	Not Significant
Length of Training			
Academic Support	10.561	.000	Significant
Personal Growth	10.239	.000	Significant
Institutional Environment	11.734	.000	Significant

Additionally, institutions that offer a conducive setting for an extended period of instruction may greatly augment the individual growth of all students. The efficacy of training programs in fostering personal growth among individuals of different genders and training duration may be influenced by the quality of the institutional environment, including factors such as inclusion, resource availability, and support networks.

Al-Momani (2018) sought the efficacy of a training program aimed at enhancing teachers' understanding of the national professional standards in secondary vocational education in Jordan. The results indicated a statistically significant disparity in the average performance of study participants on the national professional growth norms learning

assessment between those who received backward training and those who received forward training. This disparity was observed in both overall test scores and in each specific area. These findings suggest that the proposed training program is effective in enhancing the knowledge of national professional development standards among vocational educational teachers. The program's effectiveness ranged from moderate to very strong.

Table 6
Differences in Student Development when Grouped According to Profile

Sex	F-value	p-value	Interpretation
Personal Development	10.160	.002	Significant
Professional Skills	12.812	.000	Significant
Social Engagement	13.279	.000	Significant
Year Level			
Personal Development	.092	.964	Not Significant
Professional Skills	.126	.945	Not Significant
Social Engagement	.363	.780	Not Significant
Major			
Personal Development	1.003	.406	Not Significant
Professional Skills	1.189	.315	Not Significant
Social Engagement	1.067	.372	Not Significant
Length of Training			
Personal Development	6.801	.000	Significant
Professional Skills	6.267	.000	Significant
Social Engagement	9.728	.000	Significant

Table 6 shows the comparison of responses on student development when grouped according to profile. It was observed that there were significant differences on indicators when grouped according to sex and length of training since the obtained alpha levels were greater than the p-values. This meant that the responses differ statistically. In terms of year level, and major, it was noted that there were no significant differences since the obtained p-values all greater than the alpha level. This meant that the responses did not differ statistically.

The accessibility and quality of support systems, such as mentorship and intervention, may differ based on sex. Women may possess distinct requirements or encounter unique obstacles in contrast to men, which may impact their individual development. The significant gaps in student development, categorized by gender and training duration, especially in relation to personal growth, vocational aptitude,

and social involvement, may be ascribed to several parameters. To rectify these inequalities and enhance student growth results, schools may develop training programs that are adaptable to various learning styles and backgrounds, thereby ensuring that all students derive equal benefits from the duration of training.

According to Prabowo et. al. (2023), student development is essential at all educational levels in order to ensure that students achieve career maturity. Employability is a crucial component in the development of career maturity. Employability refers to a collection of essential abilities that individuals need to thrive in the workplace. Their study sought to ascertain the impact of an employability skills program on students attending vocational schools. The research findings suggested that the skills program has the potential to enhance vocational students' employability skills. Their study asserted that the implementation of skills training in schools can assist students in acquiring as well as in refining their employability skills.

Table 7
Relationship Between Training Level Improvement and Student Development

Academic Support	r-value	p-value	Interpretation
Personal Development	.229	.000	Significant
Professional Skills	.224	.000	Significant
Social Engagement	.268	.000	Significant
Personal Growth			
Personal Development	.259	.000	Significant
Professional Skills	.260	.000	Significant
Social Engagement	.290	.000	Significant
Institutional Environment			
Personal Development	.256	.000	Significant
Professional Skills	.260	.000	Significant
Social Engagement	.301	.000	Significant

Table 7 displays the association between training level improvement and student development. The computed r-values indicated a strong direct correlation, and the resulted p-values were less than the alpha level. This meant that there were significant relationships that existed and implied that the better the training level is, the better that student's development is.

The strong correlation between the enhancement of the training level and the progress of students may be attributed to the interdependence of skill acquisition, personal development, and the entire educational experience. As students advance their training programs, they gain important skills and expertise that are directly applicable to their respective industries. Acquiring this fundamental knowledge may be essential to achieving professional expertise and self-assurance. The difficulties and achievements experienced during advanced training programs may contribute to the development of resilience and adaptation, which are crucial qualities for effectively managing the intricacies of both personal and professional lives. Efficient training programs may not only provide students with technical skills but also facilitate their total growth, equipping them with prosperous jobs and satisfying lifestyles.

Maslennikova et. al. (2020) argued that the foundation of educating students consists of strategies, methods, and forms of learning through practical activities and the execution of professional acts. Equipping students into careers in the education sector enhances the advancement of school education. The real-world importance of their study centered on the need to align the level of school teaching with contemporary technological advancements. Evidence has demonstrated the need to motivate students in scientific endeavors. According to all respondents, it has been determined that acquiring competencies and experience in open training systems is a necessary requirement for effectively carrying out future educational, cognitive, and professional activities. The study's distinctiveness stemmed from the need to enhance the proficiency of undergraduates in chemical discipline instruction.

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