



ASSESSMENT OF PERCEPTION FACTORS INFLUENCING COLLABORATION BETWEEN VOCATIONAL SCHOOLS AND BUSINESSES IN PRACTICAL TRAINING

 Tuan Van
Nguyen¹⁺

 Chinh Danh Cao²

 Hue Thi Nguyen³

¹Ha Noi Metropolitan University, Hanoi, Vietnam.

Email: tuannv@daihocthudo.edu.vn

²University of Technology Education, Nghe An Province, Vietnam.

Email: caochinhkts@gmail.com

³Hanoi National University of Education, Hanoi, Vietnam.

Email: huengyentigd@gmail.com



(+ Corresponding author)

ABSTRACT

Article History

Received: 12 April 2022

Revised: 8 June 2022

Accepted: 21 June 2022

Published: 6 July 2022

Keywords

Collaboration practical teaching

Factors influence

Perception

Student

Teacher

Vocational schools.

As the global economy grows, the labor market's demand for qualified employees increases. However, the present situation is not able to meet labor market requirements; laborers are inexperienced, and their professional skills are inadequate. Collaboration between vocational schools and businesses is essential for educational activities. This study aimed to investigate the degree of perception, the contents, the forms, and the variables that influenced collaboration activities in practical training between vocational schools and businesses. A quantitative study method was conducted on 570 respondents (195 teachers, 125 managers, and 250 graduated students) randomly recruited from four provinces/cities in Vietnam. The results show that participants perceived the importance of practical teaching coordination activities in vocational schools and businesses. In addition, some contents and forms were applied to collaboration teaching activities between vocational schools and businesses. Future studies should consider similar experimental studies to develop appropriate practical training collaboration activities models based on perception levels and factors impacting activities.

Contribution/Originality: This study demonstrates that participants value practical teaching coordination activities in vocational schools and enterprises. In addition, certain themes and forms were discovered that could be applied to activities involving partnership between vocational schools and enterprises and education.

1. INTRODUCTION

In today's globalizing world, economic markets are getting increasingly competitive. Economic development raises the demand for knowledge and labor skills in a lot of industries across society. The current reality also shows that youth unemployment is increasing. The issue of new graduates migrating from learning to practicing and from school to workplace has become much more critical than ever before (Hoffman, 2011). In Vietnam, just about half of graduated students succeed in getting employment in their field of study (Anh, 2007).

Furthermore, due to the current pandemic, the rate of unemployment posed a significant challenge for the society (Nguyen, Tsai, Kayral, & Lin, 2021). Graduated students of a vocational training program commonly fall short of the employer's requirements, and they need to be sent for additional training. This situation often occurs due to the lack of cooperation and interaction between the training school and the industry. This results in a waste of time and resources on the parts of the workers. Global education is innovating to satisfy the demand for suitable expertise in the New Century. To resolve shortage of skilled labor, it is essential to develop a direct and suitable

relationship between educational programs at schools and the skills requirements of an employer base. Collaboration in practical teaching between vocational schools and industry is one of the most effective approaches. It constitutes a substantial innovation and transformation of talent-development model in vocational education.

The concept of collaborative education refers to an organized educational strategy that collaborates classroom instruction and a productive career internship in a field related to a student's academic or professional aspirations (Cockrill & Scott, 1997). Vocational education is organized to provide students with professional certification after students have accomplished an apprenticeship program that combines classroom theory with practice in labor facilities (Breen, 2005). In the learning process, to assist students in gaining and integrating knowledge, skills, and attitude, vocational schools and workplaces are considered the most critical learning places (Gulikers, Bastiaens, Kirschner, & Kester, 2008). Students are provided here with realistic learning experiences (Gulikers et al., 2008) and self-directed learning (Kicken, Brand-Gruwel, & van Merriënboer, 2008).

Student construction of meaningful relationships between their learned knowledge, skills, and attitudes at both vocational schools and workplaces is the overarching goal of a vocational program (Baartman & De Bruijn, 2011). Educators in countries are attempting to shift the educational system away from the traditional classroom and toward more collaboration with the workplace (Nelen, Poortman, De Grip, Nieuwenhuis, & Kirschner, 2010). The opposite is the case of a vocational system, such as that seen in Germany, where students work as professionals in a company while simultaneously attending school one day a week to learn (Rauner, 2007).

The combination of work and learning occurs as soon as possible to support learners in realizing the change from the student role to the professional worker (Ding, Xiong, & Lv, 2016). Openness, practicality, and professionalism are the essential characteristics of the combination of working and learning (Liang, 2010). The study revealed that students' learning techniques in vocational schools and workplaces are associated with six major points: students' learning styles, students' expertise development, students' incorporation of knowledge obtained in school and even from the workplace, students' motivating factors for learning, and students' professional identity formation, knowledge development processes (Schaap, Baartman, & De Bruijn, 2012).

Several factors influence the relationship between school and workplace learning, including collaboration and communication across learning institutions and the creation of appropriate teaching programs (Sappa, Aprea, & Vogt, 2018; Tan & Wang, 2021), a few of those influence the effectiveness of the school-workplace relationship. These factors include the degree of collaborative efforts among different parties (Hardy & Parent, 2003) the quality of program training (Rauner, Smith, Hauschildt, & Zelloth, 2010), integrated teaching methodologies (Schaap et al., 2012) and teachers' ability (Baartman & De Bruijn, 2011).

There are many different vocational education systems, including systems that provide vocational training in fully school-based programs. A vocational system is a practice-based model of education that combines schools and businesses in a so-called "dual system" (Ryan, 2001). Breen (2005) indicates that collaborations between schools and businesses help young occupations in vocational systems, specifically dual systems. In 1960s, Germany had invented the phrase "Dual System" to highlight equal accountability, equal partnerships, and close collaboration between business and education (Bohnenkamp, 1966). "Dual System" comprised extensive training via courses that combined theory and practice (Göhringer, 2002). The purpose was to offer the finest education possible for students, to familiarize them with future work and society. The model was described as the "dual training" system or the dual system. Parallel vocational training was also a system of vocational education in which practical training occurred in workplaces, and theoretical education was imparted in schools; both processes happening simultaneously. For the laborer, direct practice at the workplace allowed for the explanation, construction, and reinforcement system that incorporated teaching content and theories (Rauner, 2007).

Many countries have investigated and implemented collaboration vocational training between vocational schools and businesses to enhance the quality of vocational training for a laborer via a "dual system" model. Norway's vocational education and training method used the 2+2 model, which involved a two year of theoretical

study and two years of professional experience. Furthermore, depending on this model, Norwegian vocational training increased incidence and created more flexible and open models such as the "1+3 model" (1 year of school followed by three years of vocational training); and the "0+4 model" (all four years are vocational training) (The World Bank, 1998). It was thought that this would lead to increased productivity in teaching and vocational training.

This combination model has also been utilized in a wide range of countries which modified it to achieve the best effect dependent on the demands and development conditions of the educational system. For instance, Korea implemented a (2+1) system, which combined schools and businesses intending to enhance the quality of student achievements through expanding students' practice time at factories and machines (Jung, 2001). The cooperation model between vocational education and businesses was also given importance in Japan. Employers organized interns to receive professional skills training at their companies and factories after they graduated from vocational schools or high schools.

In Vietnam, businesses/organizations have faced difficulties due to a shortage of professional skills required to keep up with the rapid growth of globalization. The issue of training competent individuals becomes even more critical as the country faced the increase in industrialization, modernization, and economic integration with the rest of the civilized world. The significant problem is the collaboration between the educational system, teaching in schools, and employers. This collaboration should be regarded as an integral process that should constantly develop and diversify in terms of both form and content.

This paper analyzed the perceived degree of practical teaching coordination activities of vocational schools and businesses. It examined the state of the contents and the forms applied to collaboration teaching activities. It also investigated the factors that influence collaboration activities in practical training between vocational schools and businesses.

2. METHODS

2.1. Participants

The sample of the study was selected randomly from four provinces/cities in Vietnam. A total of 570 subjects responded to the survey by returning the questionnaire. This sample comprised 195 teachers from vocational schools that trained electricians and welders (34.2 %), 125 managers and technical staff at firms and companies that employed electricians and welders (21.9 %), and 250 graduated students (43.9 %) of vocational schools currently working at businesses and enterprises.

2.2. Measurements

This study utilized a survey design to measure the perception and factors that influenced the collaboration of vocational training instruction activities between vocational schools and enterprises. The survey instruments had four parts. The first part contained questions designed to ascertain respondents' perceptions of the importance of collaboration in teaching and practice activities between vocational schools and businesses. The second part included questions to assess the current cooperation between vocational schools and businesses in teaching practice. The third part was related to the current state of collaboration between vocational schools and businesses in practical teaching; and finally, the last part dealt with questions related to factors affecting the collaboration of practical teaching activities between vocational schools and businesses.

2.3. Procedures

Before conducting the survey, participants were informed of the purpose of the research and the basis of voluntary participation in the survey. All participants received a normative explanation of the basic requirements for completing the questions. Volunteers were requested to submit demographic information of the respondent,

including their gender, date of birth, position, level of education, and trained profession. Finally, the participants were provided with an explanation of how to conduct the survey.

Table 1. Perception of the importance of collaborating practical teaching between vocational schools and businesses.

Participant	Level (%)		
	Not at all important	Neutral	Very important
Technical staff	0.0	1.2	98.8
Teachers	0.0	3.1	96.9
Students	0.0	7.5	92.5

Table 1 showed that 98.8% of technical staff agreed that practical teaching collaboration between vocational schools and businesses was very important, followed by 96.9% of teachers and 92.5% of graduated students.

Table 2. The state of collaboration of content in practical training between vocational schools and businesses.

Item	Level (%)				
	Never	Rarely	Occasionally	Frequently	Very Frequently
Collaboration in the construction of vocational education program	0.0	8.4	55.2	25.7	10.7
Collaboration in construction of a practical teaching plan	0.0	21.3	72.1	5.2	1.4
Collaboration in teaching organization	0.0	5.2	24.7	60.5	9.6
Collaboration in the use of practice equipment and internships”	0.0	3.4	21.6	70.9	4.1
Collaboration of assessment on practical teaching results	0.0	22.2	54.7	20.6	2.5
Collaboration in ability development and professional enhancement for teaching staff and teachers	0.0	10.5	52.8	33.2	3.5

Concerning the state of collaboration of content in practical training between vocational schools and businesses, Table 2 shows a list of critical content of collaborative teaching activities. " *Collaboration in the use of practice equipment and internships*" was a significant factor affecting the quality of training, with 75% of respondents believed that vocational schools and establishments employ workers frequently and very frequently; followed by " *Collaboration in teaching organization*" with 70.01% (60.5% frequently and 9.6% very frequently) ; " *Collaboration in ability development and professional enhancement for teaching staff and teachers*" with 36.7% (33.2% frequently and 3.5% very frequently); and " *Collaboration in the construction of vocational education programs*" with 36.4% of participants in total respond that frequently or very frequently.

Table 3 shows that the most frequently selected form of cooperation in practical teaching by teachers at vocational schools and technical staff at businesses was "Vocational schools and businesses each doing one thing," with 75% of teachers (Frequently) and 70% of technical staff (Frequently). Meanwhile, the participants seldom chose to apply the form of coordination "Vocational schools and businesses are involved in all stages of the practical teaching process".

Table 3. The forms of collaboration in the practical teaching of teachers and technical staff.

Item	Level (%)							
	Vocational Schools				Businesses			
	Never	Rarely	Occasionally	Frequently	Never	Rarely	Occasionally	Frequently
Vocational schools and businesses are involved in all stages of the practical teaching process	100	0	0	0	100	0	0	0
Vocational schools and businesses each doing one thing	0	5	20	75	0	8	22	70
The vocational school is responsible for teaching, and the businesses are responsible for the assessment	15	34	46	5	12	37	43	8

Table 4. The factors that influence the collaboration of practical teaching between vocational schools and businesses.

Factors	Level (%)			
	Very important	Neutral	Low importance	Not at all important
State mechanisms and policies	64.2	25.3	9.0	1.5
Collaboration environment	55.1	34.5	8.1	2.3
Vocational education program	1.0	70.2	19.2	9.6
Teachers and technical staffs	60.1	24.2	8.3	8.3
Teaching facilities and equipment	45.4	5.4	12.3	36.9

Table 4 shows the list of crucial factors that impact the practical teaching and learning collaboration between vocational schools and businesses. The first element was "State mechanisms and policies" with 64.2% (very important) of respondents agreeing that this element affects collaboration of practical teaching between vocational schools and businesses; followed by "Teachers and technical staffs" with 60.1% (very important); "Cooperative environment" with 55.1% (very important); 45.4%% of the apprentices interviewed believed that "Teaching facilities and equipment" influence collaborative educational activities between vocational schools and businesses. Interestingly, only 1% of the apprentices believed that vocational education programs are very important.

3. DISCUSSION

The main objectives of the present research were: (i) to assess the participants' perception of the importance of practical teaching collaboration between vocational schools and businesses; (ii) to investigate the state of cooperation of content in practical teaching between vocational schools and businesses; (iii) to figure out the factors that impact the practical teaching and learning collaboration between vocational schools and businesses.

The findings reveal that all participants generally agreed that vocational training and practicing collaboration between vocational schools and employers were very necessary. This outcome was consistent with the findings of the study conducted by Ramli and Abd Wahid (2021), which found out that a majority of practical academic staff members expressed an understanding of significance and willingness to apply the component of collaboration with industry. When discussing why the labor force trained in vocational training schools did not meet the quality and structural standards of jobs, employers regularly expressed dissatisfaction with the quality of vocational training schools. As a result, labor supply and demand were out of sync at times. To accommodate this, it is necessary to examine the training approaches and review how future workers gained technical and professional qualifications. Collaboration between vocational schools and labor firms is necessary for allowing people to study and work at the same time, to receive real-world experience, and learn new material while still in school. It also has the additional benefit of reducing youth unemployment (Gonon, 2017). Apprentices frequently need to collaborate in order to bridge borders between education and work; in order to master a profession, they must integrate knowledge from institutions as well as industry (Guile & Young, 2003).

The findings also indicated that there was currently some collaborative teaching content that is used in conjunction with vocational schools and businesses in the process of employee training. The results showed that the three objectives of the current research, namely collaboration in the use of practice equipment and internship, collaboration in teaching organizations, and collaboration in the development of teaching staff and teachers' abilities and professional enhancement were important collaboration content of vocational schools and businesses. Meanwhile, the organization of teaching comprises the compilation of teaching records, lesson plans, and lesson summaries, as well as the design of teaching materials and tools. These findings are congruent with the perspective expressed by Komba and Nkumbi (2008). The study indicated that a vast majority of participants agreed that teacher professional development was necessary because it helped teachers to enhance their professional, academic, and technical abilities, among other things.

Teachers' ability appears to be limited by a lack of professional experience and communication skills. Due to the academic nature of vocational teachers, they tend to promote theoretical learning. As a result, all teachers must be prepared with critical skills, including effective communication and interpretation (Bakar, 2018; Day & Gu, 2007). Besides, the collaboration in the construction of vocational education programs is a significant content. According to Bolli, Caves, Renold, and Buergi (2018) educational efficacy is dependent on several elements, including employer involvement in curriculum development and the integration of workplace training and classroom learning.

In Switzerland, efforts are being made to develop an education program and associated educational practices to improve educational effectiveness. The effectiveness of the training program is still defined by the vocational school, with a little input from employer staff. For this effectiveness, the study identifies components that contribute to the relationship between school and workplace learning, such as curriculum construction and instructional placement (Sappa et al., 2018). However, market research, analysis of training requirements, job analysis, trial teaching, and assessment are still not included in the coordinating process. This is comparable to the study by Sauli, Wenger, Gross, and Berger (2019), who suggested that according to apprentices, a positive and constructive relationship exists between classroom knowledge and practical learning experience at training organizations. Specifically, some trainees from technical professions realized that what they learned in school was useless or inapplicable to their training at training organizations. They concluded that there was no connection between theory and practice in the practical education program, its logic and science were inadequate, it did not match with labor-market standards, and it was inappropriate for the rapid change in manufacturing technology that was currently occurring.

Vocational schools and employers each does one thing that is the most frequently used form of collaboration between vocational schools and employers. Teachers and technologists keep carrying out the primary tasks of each party. Additionally, this structure exploits and utilizes each party's current resources in terms of facilities, and avoids duplication and strain. This is demonstrated by the dual system approach, which establishes the vocational schools as equal partners with the employers. Both work toward the same objective, and even under different commands and with different levels of responsibility (Bohnenkamp, 1966). Learners have participated in practical learning work in enterprises while also studying theory in schools (Ryan, 2011). On the contrary, another study conducted in Germany revealed that businesses and vocational schools had just an unstable relationship with employers and vocational education (Gessler, 2017).

The results also revealed that several significant factors influenced the collaboration of practical teaching between employers and vocational schools, such as following elements: state mechanisms and policies, teachers and technical staff, cooperative environment, and teaching facilities and equipment. Meanwhile, several further research has revealed that additional elements influence collaboration. The following are the most crucial factors to consider when establishing links between school and workplace learning: cooperation and communication capabilities, curriculum development, and instructional variables (Sappa et al., 2018). On the other hand, Ramli and Abd Wahid (2021) proposed that six influential components existed, including placement in industry, the added value, the curriculum, the training, the facilities, and the support.

The findings further suggest that teachers and technical staff are crucial factors of activity collaboration and training quality. Practical teachers have usually limited education and teaching capacity (Bakar, 2018). Numerous practicing teachers lack manufacturing experience and have minimal access to advanced techniques and cutting-edge technologies. Teachers typically adhere to traditional teaching methods, and students are more likely to seek employment, gaining new knowledge of practical skills and entrepreneurship (Yamada & Otchia, 2020). Vocational teachers must not only be able to teach theory in the classroom, but they must also have the capacity to teach and coach students in the workplace. All of the academics thus believe that the teacher is the main focus of classroom instruction and that the teacher's ability is critical to the teaching-learning process (Galabawa & Agu, 2001).

Teachers' roles and professionalism impact both their own and their students' learning processes (Usman, 2002). As a result, teacher capability affects how vocational schools and employers should collaborate. This requires

the adaptation and enhancement of teachers' capabilities for them to be effective in the current era (Bakar, 2018). Besides that, the environment has a significant impact on the collaboration of vocational schools and employers. Over the last several decades, a sociocultural approach to the relationship between school and work has emerged, emphasizing the need for promoting vocational education and training integration by reducing the environmental gap between these two learning institutions (Biemans, Nieuwenhuis, Poell, Mulder, & Wesselink, 2004). When considering the school-workplace connection model, the learning environment is comprised of dimensions of human context, knowledge, and sociocultural context, which are all interwoven into one another (Tanggaard, 2007).

Iannelli and Raffe (2007) report that the degree to which vocational education and the labor market are intertwined differs from country to country, depending on the national industrial history, social and democratic culture, as well as the accompanying institutions and procedures that have emerged within the country's environment. Furthermore, teaching facilities and equipment are equally critical. To improve the overall quality of vocational training institutions and the efficacy of the teaching process, a variety of technical and facility support initiatives, as well as training programs, are being implemented (Mac, Pham, & Nguyen, 2012). Nonetheless, the reality indicated that the number of teaching facilities and equipment at vocational training institutes was insufficient and did not fulfill specified standards (Dang, 2015).

4. CONCLUSION

Unemployment among young people is on the rise. When it comes to current socio-economic developments, vocational education does not match the demands of the labor market. Collaboration of practical training between vocational schools and businesses is a vital prerequisite. According to the findings of this study, the perception of teachers, technical staff, and graduated students agree that practical teaching collaboration between vocational schools and employers was very necessary. It is clear from the conclusions of this study that it is critical to develop a comprehensive and effective model of partnership between vocational schools and businesses. The current study discovered the contents used in collaborating teaching activities such as the collaboration in the construction of vocational education programs, the cooperation in teaching organization, the coordination in the use of practice equipment and internships, the collaboration in skills development, and professional enhancement for teaching staff and teachers.

Additionally, the form of vocational schools and businesses each do one thing is the most frequently used approach of collaborating educational activities. A few factors such as mechanisms and policies, teachers and technical staff, teaching facilities and equipment, and collaborative environment are the factors that affect the coordination of vocational teaching and learning. This result serves as the foundation for further research to develop teaching strategies that integrate learning in schools and workplaces whilst still adjusting teaching activities appropriately. The findings of this research have consequences for theory, policy, and future research. Theoretically, this study makes substantial contribution to current knowledge of the collaboration between vocational schools and businesses in Vietnam. Additionally, the findings of this study can be utilized as reference material for future education and training studies. The continued study determines what students have learned during their studies at vocational schools and firms, as well as examines the challenges that learners have experienced when learning with the integrated model.

The research has several limitations. Firstly, the study concentrated only on the current level of perception and issues involving collaborative teaching activities between vocational schools with employers, rather than on the future of the field. It suggests that the following studies concentrate on conducting an experimental study from which they may develop models of teaching combination that are suited for the research environment. Secondly, additional elements affect the teaching collaboration of vocational schools and businesses that should be examined in the subsequent research, including placement in industry, support, and communication capacities. Finally,

because this study focused on teachers, technical staff, and graduates, further studies would need to include other samplings such as parents, company managers, and senior laborers.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study.

REFERENCES

- Anh, D. N. (2007). Youth work and employment in Vietnam. In T. L. Giang & K. H. Duong (Eds.), *Social issues under economic transformation and integration in Vietnam* (pp. 57-78). Hanoi, Vietnam: Vietnam Development Forum.
- Baartman, L. K., & De Bruijn, E. (2011). Integrating knowledge, skills and attitudes: Conceptualising learning processes towards vocational competence. *Educational Research Review*, 6(2), 125-134. Available at: <https://doi.org/10.1016/j.edurev.2011.03.001>.
- Bakar, R. (2018). The influence of professional teachers on Padang vocational school students' achievement. *Kasetsart Journal of Social Sciences*, 39(1), 67-72. Available at: <https://doi.org/10.1016/j.kjss.2017.12.017>.
- Biemans, H., Nieuwenhuis, L., Poell, R., Mulder, M., & Wesselink, R. (2004). Competence-based VET in the Netherlands: Background and pitfalls. *Journal of Vocational Education and Training*, 56(4), 523-538. Available at: <https://doi.org/10.1080/13636820400200268>.
- Bohnenkamp, H. (1966). *Recommendations and expert opinions of the German committee for education 1953-1965*. Stuttgart, Germany: Ernst Klett.
- Bolli, T., Caves, K. M., Renold, U., & Buergi, J. (2018). Beyond employer engagement: Measuring education-employment linkage in vocational education and training programmes. *Journal of Vocational Education & Training*, 70(4), 524-563.
- Breen, R. (2005). Explaining cross-national variation in youth unemployment: Market and institutional factors. *European Sociological Review*, 21(2), 125-134. Available at: <https://doi.org/10.1093/esr/jci008>.
- Cockrill, A., & Scott, P. (1997). Vocational education and training in Germany: Trends and issues. *Journal of Vocational Education and Training*, 49(3), 337-350. Available at: <https://doi.org/10.1080/13636829700200019>.
- Dang, V. H. (2015). Parental perspectives towards the vocational education training sector in Vietnam. *Journal of Education and Vocational Research*, 6(1), 37-51. Available at: <https://doi.org/10.22610/jevr.v6i1.178>.
- Day, C., & Gu, Q. (2007). Variations in the conditions for teachers' professional learning and development: Sustaining commitment and effectiveness over a career. *Oxford Review of Education*, 33(4), 423-443. Available at: <https://doi.org/10.1080/03054980701450746>.
- Ding, Y. L., Xiong, B., & Lv, Y. Z. (2016). Improvement for Course system of exploration technology and engineering based on specialized direction of Alumni. *Higher Education Forum*, 3(2), 115-124.
- Galabawa, J. C. J., & Agu, A. O. (2001). Advocacy, mobilization and partnership building for education and literacy for all in Tanzania: Moving from rhetoric to reality. *Papers in Education and Development*, 21, 1-13.
- Gessler, M. (2017). The lack of collaboration between companies and schools in the German dual apprenticeship system: Historical background and recent data. *International Journal for Research in Vocational Education and Training*, 4(2), 164-195. Available at: <https://doi.org/10.13152/ijrvet.4.2.4>.
- Göhringer, A. (2002). University of cooperative education—Karlsruhe: The dual system of higher education in Germany. *Training Asia-Pacific Journal of Cooperative Education*, 3(2), 53-58.
- Gonon, P. (2017). Quality doubts as a driver for vocational education and training (VET) reforms—Switzerland's way to a highly regarded apprenticeship system. In *Vocational Education and Training in times of economic crisis* (pp. 341-354). Cham: Springer.
- Guile, D., & Young, M. (2003). Transfer and transition in vocational education: Some theoretical considerations. In T. Tuomi-Gröhn & Y. Engeström (Eds.), *Between school and work: New perspectives on transfer and boundary-crossing* (pp. 19-38). Amsterdam, Netherlands: Pergamon.

- Gulikers, J. T., Bastiaens, T. J., Kirschner, P. A., & Kester, L. (2008). Authenticity is in the eye of the beholder: Student and teacher perceptions of assessment authenticity. *Journal of Vocational Education and Training*, 60(4), 401-412. Available at: <https://doi.org/10.1080/13636820802591830>.
- Hardy, M., & Parent, C. (2003). School-workplace collaboration: an uneasy partnership—experiences from two alternation programs in Quebec. In Schuetze, H.G.; Sweet, R. (Eds.), *Integrating school and workplace learning in Canada: principles and practices of alternation education and training* (pp. 135-155). Montreal, Canada: McGill/Queens University Press.
- Hoffman, N. (2011). *Schooling in the workplace: How six of the world's best vocational education systems prepare young people for jobs and life*. Cambridge, USA: Harvard Education Press.
- Iannelli, C., & Raffe, D. (2007). Vocational upper-secondary education and the transition from school. *European Sociological Review*, 23(1), 49-63. Available at: <https://doi.org/10.1093/esr/jcl019>.
- Jung, C. G. (2001). *Vocational and training system in Korea*. Seoul, Korea: Ministry of Labour.
- Kicken, W., Brand-Gruwel, S., & van Merriënboer, J. J. (2008). Scaffolding advice on task selection: A safe path toward self-directed learning in on-demand education. *Journal of Vocational Education and Training*, 60(3), 223-239. Available at: <https://doi.org/10.1080/13636820802305561>.
- Komba, W. L., & Nkumbi, E. (2008). Teacher professional development in Tanzania: Perceptions and practices. *Journal of International Cooperation in Education*, 11(3), 67-83.
- Liang, Z. (2010). Problems existed in teaching management of higher vocational education under the model of working and learning combination and the countermeasures. *Vocational and Technical Education*, 31(11), 74-76.
- Mac, V. T., Pham, X. T., & Nguyen, Q. V. (2012). *Viet Nam vocational training report 2011*. Hanoi, Vietnam: Labour and Social Publishing House.
- Nelen, A., Poortman, C., De Grip, A., Nieuwenhuis, L., & Kirschner, P. A. (2010). *The return on investment of combinations of learning and working. A review study*. Den Haag, Netherlands: Netherlands Organization for Scientific Research.
- Nguyen, P.-H., Tsai, J.-F., Kayral, I. E., & Lin, M.-H. (2021). Unemployment rates forecasting with grey-based models in the post-COVID-19 period: A case study from Vietnam. *Sustainability*, 13(14), 1-27. Available at: <https://doi.org/10.3390/su13147879>.
- Ramli, F. A., & Abd Wahid, N. H. (2021). Perception of vocational colleges academic staffs' on the importance and readiness to collaborate with industry. *E-BANGI*, 18(7), 191-206.
- Rauner, F., Smith, E., Hauschildt, U., & Zelloth, H. (2010). *Innovative apprenticeships*. Münster, Germany: LIT Verlag.
- Rauner, F. (2007). Vocational education and training—A European perspective. In *Identities at work* (pp. 115-144). Dordrecht: Springer.
- Ryan, P. (2001). The school-to-work transition: A cross-national perspective. *Journal of Economic Literature*, 39(1), 34-92. Available at: <https://doi.org/10.1257/jel.39.1.34>.
- Ryan, P. (2011). Apprenticeship: Between theory and practice. *School and the Workplace*, 64, 1-47.
- Sappa, V., Aprea, C., & Vogt, B. (2018). Success factors for fostering the connection between learning in school and at the workplace: The voice of Swiss VET actors. In *Integration of Vocational Education and Training experiences* (pp. 303-325). Singapore: Springer.
- Sauli, F., Wenger, M., Gross, V., & Berger, J.-L. (2019). *The quality of the Swiss initial vocational education and training system through apprentices' perception of the connections between school and training company*. Paper presented at the Contemporary Apprenticeship Reforms and Reconfigurations.
- Schaap, H., Baartman, L., & De Bruijn, E. (2012). Students' learning processes during school-based learning and workplace learning in vocational education: A review. *Vocations and Learning*, 5(2), 99-117. Available at: <https://doi.org/10.1007/s12186-011-9069-2>.
- Tan, H., & Wang, X. (2021). Educational mismatch and income inequality in developing countries. *International Journal of Social Sciences Perspectives*, 9(2), 9-18. Available at: <https://doi.org/10.33094/7.2017.2021.92.9.18>.

- Tanggaard, L. (2007). Learning at trade vocational school and learning at work: Boundary crossing in apprentices' everyday life. *Journal of Education and Work*, 20(5), 453-466. Available at: <https://doi.org/10.1080/13639080701814414>.
- The World Bank. (1998). *Vocational and technical education and training. A world bank policy paper*. Washington, USA: The World Bank.
- Usman, M. U. (2002). *Become a professional teacher*. Bandung, Indonesia: Remaja Rosdakarya.
- Yamada, S., & Otchia, C. S. (2020). Perception gaps on employable skills between technical and vocational education and training (TVET) teachers and students: The case of the garment sector in Ethiopia. *Higher Education, Skills and Work-based Learning*, 11(1), 199-213. Available at: <https://doi.org/10.1108/heswbl-08-2019-0105>.

Views and opinions expressed in this article are the views and opinions of the author(s), Humanities and Social Sciences Letters shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.