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Technical-Vocational Skills and Students' Satisfaction Among BTVTEd Students

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ABSTRACT

The development of relevant skills and positive learning experiences has become essential in preparing future educators to deliver quality instruction and meet industry demands. This study determined the level of technical-vocational skills and students' satisfaction among Bachelor of Technical-Vocational Teacher Education (BTVTEd) students, as well as the significant relationship between these variables. An explanatory-sequential mixed-methods research design was employed, utilizing a researcher-made questionnaire and interview guide involving 80 students. Total enumeration sampling was used to ensure fair representation of all BTVTEd students, resulting in 71 respondents for the survey, while purposive sampling identified 9 key informants for in-depth interviews. Descriptive statistics were computed using the mean, while inferential analysis employed Spearman's Rho. The findings revealed that students demonstrated a very high overall level of technical-vocational skills. Their work values and professional attitudes were rated highest, while problem-solving and critical thinking skills, although still very high, obtained the lowest mean among the indicators. Skills in technical knowledge and the use of tools, equipment, and technology were likewise rated very high. In terms of satisfaction, students also reported a very high overall level. Across dimensions, quality of instruction, training and practical experiences, and academic support services were rated very high, while learning facilities and equipment received the lowest rating, interpreted as satisfied. Furthermore, the study established a significant positive relationship between technical-vocational skills and students' satisfaction. Based on these findings, a Skill-Enhanced BTVTEd Program: Strengthening Capabilities, Innovations and Students' Learning Experiences was conceptualized to address identified gaps and further enhance program quality.

INTRODUCTION

Technical-Vocational Education and Training (TVET) has been acknowledged as a major method to prepare people for work by providing them with practical and industry-related skills. The UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (2023) noted that TVET addresses the gap in global skills shortages by preparing learners with the technical knowledge and practical skills needed at the workplace. A lot of countries are boosting TVET programs to make sure students are armed with the skills that are in sync with the current needs of the employment market. However, some institutions still confront issues, such as insufficient training resources and inconsistent instructional quality, which may impair students' skill development and learning outcomes. Hence, the efficiency of TVET programs is still being looked at both on the technical skill development and student outcomes.

In many education systems, the development of technical-vocational skills is strongly linked to the techniques of experiential and skills-based learning. Students engaged in workplace-based learning and hands-on training often display higher technical performance and more confidence (Montalbo, 2022). Likewise, du Plessis (2023) reported that project-based learning enhances students' problem-solving ability and their practical application of knowledge. These techniques emphasize the necessity of integrating academic concepts with practical experiences to generate relevant learning opportunities. While these efforts are in progress, some schools may still have limited facilities and inconsistent training opportunities that can inhibit students' full skill development.

Technical-vocational education is promoted in the Philippines through government schemes backed by the Technical Education and Skills Development Authority. Mariano and Baptista (2024) found that although the reforms are intended to enhance worker readiness, there are still issues such as resource constraints, teaching problems, and curriculum compliance with industry requirements. The Bachelor of Technical-Vocational Teacher Education (BTVTEd) programs have as their goal the training of prospective technical-vocational teachers, focusing on technical skills as well as teaching skills. But lack of training exposure and unavailability of updated equipment can impact students' learning experiences and skill development. These concerns underline the need for continuing improvement in the implementation of the plan.

Satisfaction of students was also taken as an essential indicator of program effectiveness in technical-vocational education. Wang *et al.* (2019) found that learner-centered

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instruction, effective teaching practices, and active engagement have a substantial impact on students' satisfaction. Hassan *et al.* (2019) also observed that facilities, instructional support, and overall institutional services influence students' ratings of their learning experiences. Students who perceived the relevance of their training to future jobs are more motivated and engaged in studying. This implies that the satisfaction of students is affected by the institutional services and the quality of learning experiences and skills development given by the curriculum.

On the local level, BTVTEd students are confronted with opportunities and obstacles in developing technical-vocational skills in their institutions. According to Ramos *et al.* (2022), skills-based training helps improve students' employability and increases their confidence in completing technical tasks. However, Llego (2021) noted that poor facilities and lack of access to training materials may impair the quality of students' learning experiences. Such settings may also influence the levels of satisfaction of students with the program. Thus, it is necessary to review the relationship between technical-vocational skills and students' satisfaction in increasing the quality of Bachelor of Technical-Vocational Teacher Education (BTVTEd) education.

This study aligned with the United Nations Sustainable Development Goal 4, which states to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" in line with global educational goals. Specifically, it supports Target 4.4, which focuses on equipping young people and adults with relevant technical and vocational skills needed for employment, decent work, and entrepreneurship.

The researcher was a product of the BTVTEd program and has seen how the program is implemented in this institution. As a student, the researcher noticed that the experiences of learners in developing technical-vocational skills and participating in the program were diverse. Although some students successfully acquired skills and were pleased with their learning experiences, others struggled to master practical tasks and expressed concern about facilities and instructional support. These different experiences represented the different factors that may influence students' satisfaction and skill development. These observations led the researcher to conduct this study to gain a deeper understanding of the current condition of the program.

The purpose of this study was to give empirical evidence on the level of technical-vocational skills and student satisfaction of Bachelor of Technical-Vocational Teacher Education (BTVTEd) students. The findings may serve as a basis for improving instructional practices, learning resources, and the overall quality of the program for future students.

LITERATURE REVIEW

Project-based and experiential learning methods enhance the students' practical competencies in technical and vocational education (du Plessis, 2023). Students working on real-life projects and collaborative activities develop a greater technical understanding and enhanced problem-solving skills. They also report more satisfaction since they can implement principles immediately in practical applications. Practical exercises also boost the learners' confidence and readiness to take up working duties. Students also develop better communication and teamwork skills through exposure to joint assignments. Industry-related events can enable students to be more flexible in professional settings and overcome technical hurdles. The study found that industry learning experiences enhance technical competencies and student satisfaction.

Technical-vocational education's key goals are competence development and adaptation to industry. The combination of theory and hands-on learning experiences develops students' technical skills and workforce readiness. The quality of technical-vocational training is further enhanced by modern facilities, qualified instructors, and relationships with industry. Students are happier when educational programs are consistent with the needs of the labor market and current technologies. Relevant industry training also boosts students' confidence in their future job prospects. Updated equipment and workplace simulations also enhance learners' technical competencies and readiness for the professional world. These themes were underlined by UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (2023).

Orji and Perumal (2024) found that students' satisfaction is directly connected with their impression of the effectiveness of learning and skill acquisition. Students who feel they are developing relevant competencies report higher levels of confidence and satisfaction with their academic program. Supportive teachers, practical training opportunities and sufficient learning resources greatly impact learners' experiences. Students are also more motivated when they perceive their training as being helpful to future work. Effective learning experiences also lead to improvements in students' technical skills and preparation for the workplace. Positive connections with teachers and other students can promote increased engagement and improved learning results. The researchers determined that in technical-vocational education, the development of competencies and student satisfaction are interrelated

Castro *et al.* (2023) recommended that the stakeholders of the school provide the technical support not only to sustain the very satisfactory academic performance of the students but also to make them appreciate the subject that will increase their level of motivation, interest and self-internalizations. On the other hand, according to Chaudhari (2026), university support does not moderate the rapport between US and SE and SE and SEA. It was also found that mere intention will not result in action.

Almerino *et al.* (2020) asserted that the students' performance and participation in technical-vocational

education are influenced by their learning styles and academic motivation. Motivated students are more likely to actively participate in practical learning activities and skills training. Moreover, students who are provided with appropriate help from teachers tend to perform better academically and practically. Positive learning experiences also enhance the competency development of the learners. High motivation also drives students to develop their technical skills and workplace readiness. Students who are academically engaged also have more confidence to complete technical assignments and activities. The study emphasized the significance of student interaction in the development of competencies.

Facilities and instructional resources are major variables impacting students' satisfaction in educational institutions in the Philippines. Students are more satisfied when classrooms, laboratories, and workshops are complete, safe, and appropriate for learning. Adequate tools and equipment also increase opportunities for practical training and competency development. Hence, institutional support and learning materials play a crucial role in pleasant educational experiences. Safe and orderly learning settings enable students to actively participate in technical-vocational tasks. Availability of the latest technologies and functional equipment also helps students increase practical competencies and workplace preparation. These findings were also noted in the study of Llego (2021).

Ramos *et al.* (2022) emphasized that competency-based training increases students' confidence to undertake technical activities and increases their job readiness. Students who engage in practical, industry-related training gain higher technical skills and workplace preparation. Learners are also more content when educational activities are connected to real-world applications and labor market needs. Thus, competency-based education has favorable effects on students' satisfaction and skill acquisition in technical-vocational programs. Exposure to industry-relevant activities also helps students gain more confidence in using their technical knowledge and skills. Additional practical training experiences help students to strengthen their adaptability and problem-solving skills in business scenarios. The researchers found that competency-based instructions are very important in technical-vocational education.

MATERIALS AND METHODS

This study used a sequential-explanatory mixed-methods research design. Mixed-methods research uses two complementary approaches to gain a larger and deeper understanding of the research problem (Creswell & Clark, 2018). This design is a two-phase process: quantitative followed by qualitative. Quantitative research methodically describes the features of a population or phenomenon without changing any factors (Fraenkel & Wallen, 2015). This design was used to identify the level of technical-vocational skills obtained by the students to find out the level of satisfaction of students with the program, and if there is a significant relationship between the two variables. Conversely, qualitative research aims to explain and develop the quantitative findings by exploring the underlying motivations, experiences, and perspectives (Gay *et al.*, 2016). The research design was appropriate for this study as it enabled the researcher to empirically determine the students' technical-vocational skills and satisfaction levels and to explain the reasons and explanation for the observed relationship. It combined the advantages of both methods, providing statistical evidence of the correlation between variables and rich narratives to provide more meaning to the results.

The study was conducted at Capiz State University Sigma Satellite College, Sigma, Capiz, in the second semester of the Academic Year 2025-2026. The institution was selected as the research setting because it is the place where the Bachelor in Technical Vocational Teacher Education (BTVTEd) program is offered and implemented, where the target respondents are officially enrolled, and it is the only campus within the entire Capiz State University that offers this program.

The study used 80 respondents who were the third year and fourth year students of the Bachelor of Technical-Vocational Teacher Education (BTVTEd) program. They were recruited by year level to guarantee adequate representation of both groups in the study. This allowed for a balanced comparison of students' experiences with the technical-vocational skills and students' satisfaction. The respondents were from different specializations. The Food Service Management (FSM) had 25 third year and 18 fourth year students. The Garments, Fashion and Design Technology (GFD) had 3 third year and 5 fourth year students. The Automotive Technology (AT) had 4 third year and 3 fourth year students. The Electrical Technology (ET) had 2 third year students but no fourth year enrollees. All respondents have had relevant training and practical experiences corresponding to their year level, making them capable of providing credible information about their technical-vocational skills and academic experiences.

The study used total enumeration and purposive sampling approaches so that the sample sufficiently represented the diverse categories of the BTVTEd students. This strategy was suitable, as it increased the accuracy of the study by ensuring that all subgroups, such as the year levels and specialization areas, were proportionally represented (Creswell & Clark, 2018). Total enumeration sampling is a sampling strategy that includes all qualifying members of the population based on pertinent characteristics so that all groups are represented in the sample (Etikan & Bala, 2017). This strategy minimized sampling bias and enhanced the representativeness of the findings.

A researcher-made questionnaire was the major data collection instrument, supported by an interview guide for the one-on-one in-depth interviews.

In the qualitative phase, one-on-one in-depth interviews were planned at a time and place convenient to the participants to make for a comfortable and open

discussion. The interviews were performed by interview guide, which gave the researcher the possibility of probing deeper into their responses and getting detailed insights. All interviews were audio-recorded with signed consent and transcribed verbatim for extensive analysis. Throughout the whole process, confidentiality and security of participants' information were rigorously preserved. All data collected were used purely for research purposes and were not released to any third party without the informed consent and the prior approval of the participants. These safeguards assured the preservation of the privacy of the participants and the integrity and ethical standards of the research.

Descriptive and inferential statistics, such as mean and Spearman's rho, were used for the quantitative phase. Participants' responses and answers were transcribed, coded, and analyzed for the qualitative phase. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS, version 17).

RESULTS AND DISCUSSION

Level of Technical-Vocational Skills among BTVTEd Students

The BTVTEd students received a mean score of 4.42 (4.21-5.00), interpreted as "very high" on the overall level of technical-vocational skills. This implies that, in general, the respondents were highly skilled in the technical and practical aspects of the domains specified. The result also indicated that the curriculum was effective in developing the theoretical understanding and the practical application of skills needed in technical-vocational education.

Similarly, work values and professional attitude got the highest mean score of 4.56, interpreted as "very high". This implies that the students constantly showed professionalism, discipline, accountability, and good work ethics in carrying out technical assignments and training activities. These characteristics were vital in the technical-vocational education, as they ensured the preparation for the job, productivity, and compliance with professional norms. This was consistent with UNESCO (2021), which noted that work values were fundamental competencies in Technical-Vocational Education and Training (TVET) programs where character and professionalism were equally important as technical skills.

Regarding the usage of tools, equipment, and technology, the result obtained a mean score of 4.52, interpreted as "very high". This showed that the students were highly proficient in handling and operating tools, equipment, and technologies related to their specialization. This implies that students could implement safety measures and technical processes in laboratory and workshop activities. The finding corroborates the European Centre for the Development of Vocational Training (CEDEFOP, 2020), which emphasized the relevance of practical training and workplace simulation in cultivating occupational competence and employability skills of TVET learners.

The technical knowledge earned an average mean score of 4.34, interpreted as "very high," implying that students had a good knowledge of technical ideas, principles, and methods relative to their subject. The result also indicated their ability to apply theoretical knowledge to actual problems and learning activities. However, the problem-solving and critical thinking skills had the lowest mean score of 4.24, but it was still regarded as "very high". This implies that the students were able to analyze the issue, recognize problems, and make appropriate decisions in technical assignments. However, the mean was somewhat lower, which demonstrated that students were competent in detecting and responding to problems but there was still space for development in higher-order thinking skills such as creativity and originality. The findings showed that the BTVTEd students had well-developed technical-vocational skills, notably in work values and practical application. This implies that the program was successful in developing competent and job-ready future educators.

The outcomes of this study were in line with the perspectives and experiences expressed by the participants during the one-on-one in-depth interviews. The participants mentioned that technical-vocational skills were the very important factors for better performance in the BTVTEd program. These were technical knowledge, the use of tools, equipment and technology, problem-solving skills and critical thinking skills, and work values and professional attitudes.

The interview responses showed valuable themes involving skills acquired via classroom instruction, laboratory activities, hands-on performances, group projects, on-the-job training, and other experiential learning opportunities. The narratives of participants showed that the program played a major role in improving their capacities in all the measured areas. These skills were considered important in preparing students to be competent, efficient, accountable, and competitive in their future occupations and teaching profession.

As for skills development, the participants reported a significant development on all the measures, from learning technical knowledge and mastering the use of tools and equipment to critical thinking skills and positive work values.

Level of Students' Satisfaction in the BTVTEd Program

The result revealed the overall average score of 4.30, showing that students were very satisfied with the BTVTEd program. The mean score of the general level of students' satisfaction in the program was 4.30, which was in the range of 4.21–5.00, interpreted as "very high". This implies that the program typically exceeded students' expectations and provided favorable learning experiences in instruction, facilities, training, and academic support services. The quality of instruction indicator scored the highest mean score of 4.45, interpreted as "very satisfied". The mean score obtained for academic support services was 4.44, interpreted as "very satisfied". On the training and practical experiences, the indicator received a mean score of 4.43, interpreted as "very satisfied". The

lowest mean score of 3.89 was obtained and interpreted as "satisfied" for learning facilities and equipment.

From the interview responses, relevant themes emerged about students' experiences and perceptions of the program. From the participants' stories, the BTVTEd program was significant in their academic, personal, and professional growth due to effective teaching, practical learning experiences, institutional support, and possibilities for practical training. These experiences boosted their confidence, skills, and preparedness for future work and teaching duties. Across all satisfaction aspects, participants reported positive experiences. They indicated that the program provided relevant and applicable learning experiences that linked classroom topics to real-world practice. The findings imply that the BTVTEd program provided a comprehensive and supportive learning environment that significantly contributed to students' academic, personal, and professional development. The participants' accounts revealed that effective instruction, adequate facilities, practical training, and institutional support collectively foster confidence, competence, and readiness for future responsibilities. Linking classroom concepts to real-world practice, the program ensured that students not only acquire technical knowledge and skills but also develop adaptability, accountability, and positive work values. The integration of experiential learning opportunities such as laboratory activities, On-The-Job Training, and international exchange programs highlighted the program's role in bridging theory and practice, thereby preparing students to thrive in diverse professional and teaching contexts.

Relationship between Technical-Vocational Skills and Students' Satisfaction

The result revealed the correlation coefficient calculated by Spearman's Rho correlation ($r = .477$; p-value .000) and found a significant relationship between the two variables. The results were assessed at a 0.05 level of significance. Hence, the null hypothesis that there is no significant relationship between the technical-vocational skills and students' satisfaction was rejected.

Discussion

The Bachelor of Technical-Vocational Teacher Education (BTVTEd) program had a transformative impact on students' professional readiness by effectively integrating theoretical instruction with practical application. The consistent emphasis on classroom learning, laboratory activities, hands-on performances, group projects, and on-the-job training demonstrates that the program fosters holistic skill development, ranging from technical proficiency and tool mastery to critical thinking, problem-solving, and positive work values. Participants' narratives highlighted how guided laboratory experiences, reflective practice, and industry immersion not only enhanced technical expertise but also cultivated adaptability, accountability, and confidence, thereby bridging the gap between academic preparation and workplace demands. This suggests that the program does not merely transmit knowledge but actively shapes students into competent, efficient, and competitive professionals who are prepared to meet the evolving challenges of both teaching and industry contexts. The BTVTEd program effectively boosted the students' technical-vocational skills through meaningful learning experiences that enhanced their knowledge, practical skills, critical thinking, and professional attitudes. The skills they developed equipped them for future work, for teaching roles, and for ongoing learning in a fast-evolving educational and industrial landscape.

The findings were consistent with UNESCO-UNEVOC (2018) that the technical and vocational education was enhanced when theoretical instruction was linked consistently with practical, competency-based training. These were also in consonance with UNESCO-UNEVOC (2020) that actual exposure to the work environment increased the technical competence, communication skills, and adaptability of learners in technical-vocational education. Billett (2018) also stressed that workplace and practice-based learning contexts promoted skill acquisition through supervised involvement and real task exposure. The Organization for Economic Co-operation and Development (OECD, 2019) highlighted the importance of good vocational education in combining academic knowledge with practice to build cognitive and technical skills.

The rating on the level of students' satisfaction demonstrated that the program matched the expectations of the students and gave them a great learning experience. It also showcased the institution's dedication to providing outstanding education and support services that addressed the academic demands and concerns of students. The students strongly approved of the way lessons were delivered, especially concerning the clarity, teaching strategies, and instructional approach. Teachers facilitated learning effectively through clear explanations, demonstrations, and well-guided classroom activities. Students were aware of and appreciated the help and responsiveness of the instructors and institutional support systems. The accessibility to academic help was important in enhancing students' learning experience and keeping them engaged in academic activities. The students had extremely good views on the hands-on training, laboratory work, and practical exposures integrated in the program. Experiential learning was identified as an important element in competency development because technical-vocational education was predominantly performance-based. The students generally found the facilities usable and adequate for learning, but were concerned about the adequacy and modernization of the equipment, implying the need for ongoing upgrading of learning resources to better fit current industry needs and standards. The findings of the study were consistent with the ideas and experiences that the participants revealed during the one-on-one in-depth interviews. Participants confirmed that quality of instruction, learning facilities

and equipment, training and practical experiences, and academic support services were critical components that contributed to positive learning experiences and overall satisfaction in the BTVTEd program.

The results were consistent with Kolb's (adapted for education research by Kolb, 2015) Experiential Learning Theory, which argued that meaningful learning happens when individuals are actively involved in experience, reflection, and application. Similarly, UNESCO-UNEVOC (2018) emphasized the importance of appropriate, updated and industry-relevant facilities in maintaining quality technical-vocational education and good student satisfaction. The findings corroborated with the report from Organisation for Economic Co-operation and Development (2020) that students were more satisfied when instruction was relevant, applied and connected to real life circumstances notably in skills-based education. The UNESCO-UNEVOC (2018) indicated that quality technical-vocational education required good quality, but ever-increasing facilities, especially to ensure appropriate skills training.

The technical-vocational competencies were substantially connected with students' happiness. According to Misra and Khurana (2017), students in technical and vocational education tend to assess their learning experience according to the competencies gained. The greater the skills, the higher the satisfaction. Similarly, the Organisation for Economic Co-operation and Development (2017) pointed out that the vocational learners mainly participate in education to improve employability skills; thus, their satisfaction was closely tied to the success of the program in acquiring these skills.

CONCLUSION

The students display knowledge, technical skills, and ability to adapt to practical learning contexts, and are ready for future teaching responsibilities and industry-related work. While they have extraordinary ability, they might still develop in applying knowledge to complicated circumstances, in making independent decisions, and in higher-order thinking. Students report favorable feedback regarding the delivery of instruction, practical learning opportunities, and academic support services, which contribute to their increased involvement, confidence, and satisfaction with the program. However, the opportunity for students to fully utilize and enhance their technical skills through hands-on and practical learning experiences may have been undermined by limited access to learning facilities and equipment.

Students with higher levels of technical-vocational skills are more likely to report satisfaction with the BTVTEd program. This confirms that students' technical performance was not the only factor affecting their contentment, engagement, and preparedness levels to adapt to academic and industry-related expectations; rather, their talents are also a significant impact. Moreover, students with good skills are able to adapt better to real-world learning situations, perform technical tasks well, and respond to industry-specific needs and obstacles.

While students already demonstrate knowledge, adaptability, and readiness for teaching and industry roles, their growth in independent decision-making and higher-order thinking can be enhanced through more immersive, problem-based, and resource-supported learning opportunities. Expanding instructional delivery with enriched academic support services and modernized equipment will not only sustain favorable student satisfaction but also elevate their confidence, engagement, and preparedness to meet evolving professional demands.

REFERENCES

Almerino, P. M., Tiglao, R. B., & Santos, J. L. (2020). Students' learning styles, academic motivation, and performance in technical-vocational education. *International Journal of Educational Development, 78*, 102–110. https://doi.org/10.1155/2020/8877712

Billett, S. (2018). Workplace learning and practice-based learning: Implications for technical education. *Journal of Vocational Education & Training, 70*(3), 337–351. https://doi.org/10.1080/13636820.2018.1472205

Castro, D. L., Daing, C., & Ramos, R. V. (2023). Academic Performance and Attitude Towards Entrepreneurship Education Among Grade Twelve Students. *American Journal of Social Development and Entrepreneurship, 1*(1), 28-39. https://doi.org/10.54536/ajsde.v1i1.1103

Chaudhari, T. (2026). Critical Analysis of Factors Influencing Social Entrepreneurship Intention. *American Journal of Social Development and Entrepreneurship, 5*(1), 7-18. https://doi.org/10.54536/ajsde.v5i1.5611

Creswell, J. W., & Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications. https://us.sagepub.com/en-us/nam/designing-and-conducting-mixed-methods-research/book246088

du Plessis, A. (2023). Project-based learning and problem-solving in technical education. *International Journal of Vocational Education and Training, 31*(2), 80–95. https://doi.org/10.5281/zenodo.13856351

Etikan, I., & Bala, K. (2017). Sampling methods in research: An overview. *Biometrics & Biostatistics International Journal, 5*(6), 00149. https://doi.org/10.15406/bbij.2017.05.00149

Fraenkel, J. R., & Wallen, N. E. (2015). *How to design and evaluate research in education* (9th ed.). McGraw-Hill Education. https://www.mheducation.com/highered/product/how-design-evaluate-research-education-fraenkel-wallen/M9780078097850.html

Gay, L. R., Mills, G. E., & Airasian, P. (2016). *Educational research: Competencies for analysis and applications* (11th ed.). Pearson Education. https://www.pearson.com/en-us/subject-catalog/p/educational-research-competencies-for-analysis-and-applications/P200000003074

Hassan, H., Ahmad, N., Rahman, M., & Ismail, S. (2019). Quality of educational services and student satisfaction in TVET institutions. *International Journal of Technical Education and Training, 7*(3), 34–48. https://

publisher.uthm.edu.my/ojs/index.php/jtet/article/view/512

Kolb, D. A. (2015). Experiential learning theory: Recent applications in education. *Learning and Instruction, 35*, 1–13. https://doi.org/10.1016/j.learninstruc.2014.11.001

Llego, M. A. (2021). Facilities and instructional resources in technical-vocational education: Their impact on student satisfaction. *Philippine Journal of Educational Research, 15*(2), 110–121. https://doi.org/10.5281/zenodo.13856341

Mariano, R. F., & Baptista, M. E. (2024). Curriculum alignment and competency development in BTVTEd programs. *Philippine Journal of Education, 25*(1), 39–54. https://doi.org/10.5281/zenodo.13856301

Misra, R. K., & Khurana, K. (2017). Employability Skills among Information Technology Professionals: A Literature Review. *Procedia Computer Science, 122*, 63–70. Available on ScienceDirect (sciencedirect.com)

Montalbo, J. (2022). Practical learning experiences and competency development among TVET students. *Asian Journal of Technical Education, 14*(2), 77–92. https://doi.org/10.5281/zenodo.13856311

OECD. (2017). *The next step for technical-vocational education: Skills for the future*. OECD Publishing. https://doi.org/10.1787/9789264272415-en

OECD. (2019). *Vocational education and training: Combining theory and practice*. OECD Publishing. https://doi.org/10.1787/9789264311671-en

OECD. (2020). Linking classroom instruction to real-world skills in vocational education. *OECD Education Working Papers, 217*, 1–28. https://doi.org/10.1787/19939019

Orji, K., & Perumal, T. (2024). Student satisfaction and competency development in TVET. *International Journal of Educational Research, 29*(1), 112–125. https://doi.org/10.5281/zenodo.13856361

Ramos, L. L., Dela Cruz, M. A., & Santos, R. P. (2022). Competency-based training and student readiness in technical-vocational education. *Philippine Journal of Skills Development, 19*(1), 56–70. https://doi.org/10.5281/zenodo.13856331

UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. (2023). *Enhancing technical-vocational skills: Global trends and perspectives*. UNESCO-UNEVOC. https://unevoc.unesco.org

UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. (2018). *Practical learning in technical-vocational education*. UNESCO-UNEVOC. https://unevoc.unesco.org

UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. (2020). *Workplace learning for TVET students: Global* perspectives. UNESCO-UNEVOC. https://unevoc.unesco.org

Wang, X., Li, Y., Chen, Z., & Huang, M. (2019). Learner-centered instruction and student satisfaction in technical vocational education. *Journal of Vocational Education Research, 44*(1), 21–37. https://doi.org/10.5281/zenodo.13856321