

# Effectiveness of TVET-Trained Instructors at Oroquieta Agro-Industrial School (OAIS): Its Relationship to Students' Skills Acquisition

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## Abstract:

The effectiveness of Technical Vocational Education and Training (TVET)-trained instructors plays a vital role in enhancing students' cognitive, technical, and practical skills acquisition. This study examined the relationship between instructor effectiveness at Oroquieta Agro-Industrial School (OAIS) and students' skill development using a descriptive-correlational research design. Data were gathered through structured surveys assessing instructor effectiveness in pedagogical skills, technical expertise, instructional methods, assessment and feedback, industry relevance, student engagement, and professional development. Students' skills acquisition was measured in cognitive, technical, and practical domains, competency-based learning, retention and transferability, self-efficacy, feedback and reflection, and collaboration and teamwork. Descriptive statistics and correlation analysis revealed that TVET-trained instructors at OAIS demonstrated high effectiveness, particularly in pedagogical skills, technical expertise, and instructional methods, while students exhibited strong skills acquisition across all measured domains. A strong positive correlation was found between instructor effectiveness and students' skills acquisition, highlighting the significant role of well-trained instructors in fostering hands-on learning and industry-aligned training. The study recommends continuous professional development, curriculum alignment with industry demands, stronger employer partnerships, increased funding, and community awareness to further enhance TVET education quality and student employability.

**Keywords:** Instructor Effectiveness, Skills Acquisition, TVET Education.

## INTRODUCTION

Technical Vocational Education and Training (TVET) offers a critical window to equip students with practical skills, technical competence, and skills to meet the demands of the labor market. Competency of TVET-trained teachers plays a crucial role in shaping the learning process and outcomes of the students since they are responsible for bridging the gap between theory and practice. Teacher effectiveness entails teaching effectively, engaging learners, and adapting teaching styles to accommodate the needs of the diversified. If these qualities align with the mandates of technical education, then they are critical in the development of students' skills and readiness for the operations of an industry. The link between instructor effectiveness and the practical capability of the students is the success factor of an effective TVET system.

Technical-Vocational Education and Training (TVET) prepares people for economic productivity and social advancement. TVET combines formal and non-formal education systems, incorporating the study of technologies and their applications relevant to various industries (UNESCO, as cited in TVET Information, 2022). In the Philippines, the Technical Education and Skills Development Authority (TESDA) leads the campaign to make TVET programs accessible, with various training modalities such as school-based, center-based, enterprise-based, and community-based (TVET Programs, 2022). Specialized centers such as TESDA Women's Center and Language Skills Institutes offer specialized training to serve particular societal and economic demands. The study reinforces the pivotal role of TVET in promoting productivity and

entrepreneurship, such as in Somalia, where TVET systems are an approach in combating unemployment and improving socio-economic stability (Farah & Farah, 2022). Likewise, Frick (2022) discusses the global use of TVET in making education policies favorable to sustainable economic growth and poverty reduction. Overall, these studies affirm TVET's potential in transforming the skills of individuals into national and international advancement.

Technical and Vocational Education and Training (TVET) is critical in preparing students with the right skills for the needs of the contemporary workforce. Initial observations and interviews with OASIS stakeholders, however, uncovered some gaps and weaknesses in the effectiveness of TVET-trained instructors. These include sporadic application of teaching strategies, absence of industry relevance in training modules, and limited adaptability in responding to new technologies and practices. In addition, some students complained of inadequate hands-on training and assistance, which are essential in skill development. These are indications of the need to assess the effectiveness of the instructors and their contribution to skill development among the students, especially in closing gaps between training outputs and industry needs. Having these concerns is vital in enhancing TVET delivery and preparing students for the workforce.

The study aims to measure the performance of TVET-trained teachers at Oroquieta Agro-Industrial School (OASIS) and its effects on the acquisition of skills by students. It examines the effects of instructors' pedagogical competence, technical competence, instructional methods, assessment techniques, industry relevance, student participation, and professional development on the cognitive, technical, and practical skills of students. The research also examines the effects of instructors' demographic variables, such as age, sex, level of education, years of experience, and frequency of training, on their performance. The research also aims to determine how students acquire competencies, memorize knowledge, transfer skills to the practical context, and acquire self-efficacy, collaboration, and teamwork skills. By determining the relationship between instructor effectiveness and students' acquisition of skills and establishing significant demographic differences, the research aims to develop a monograph that provides information and recommendations on enhancing technical vocational education and training (TVET) practices in the area.

## **METHODS**

### **Research Design**

This study used a descriptive-correlational research design to explore how TVET-trained teachers' effectiveness relates to students' skill learning at Oroquieta Agro-Industrial School (OASIS). This approach was ideal because it allowed the researcher to observe and measure the connection between these factors naturally, without altering any conditions. As Creswell and Creswell (2018) explain, this method helps in understanding the relationships between variables in real-world settings. By following this design, the study provided meaningful insights into how TVET training influences learning outcomes, offering a clear picture of what's happening in the classroom without the need for experimental controls.

### **Research Setting**

The study was conducted at Oroquieta Agro-Industrial School (OASIS), Oroquieta City, Misamis Occidental. This school is a TESDA-administered institution specializing in technical-vocational education and training (TVET). With its focus on secondary and post-secondary technical education, OASIS provided an ideal setting to assess the effectiveness of TVET-trained teachers and their impact on students' skill development.

### **Research Respondents**

The respondents of this study consisted of both students and teachers from Oroquieta Agro-Industrial School (OASIS). Specifically, the teacher respondents were TVET-trained instructors with formal education in technical and vocational education and training (TVET) who were actively teaching at OASIS. They were selected based on their expertise in delivering technical skills instruction.

The student respondents, on the other hand, were those enrolled in various TVET courses at OASIS and were being taught by the aforementioned TVET-trained instructors. To ensure a representative and unbiased sample, stratified random sampling was employed, incorporating students from different technical courses.

Meanwhile, if the population of TVET-trained teachers was small, total population sampling was utilized to gather comprehensive data on their instructional effectiveness and its impact on students' skill development

### **Research Instrument**

A standardized questionnaire was designed to collect data on demographics, TVET-trained teacher effectiveness, and student skill acquisition. The first section gathers respondents' age, sex, education level, experience, and training background to analyze demographic influences. The second section assesses teacher effectiveness based on pedagogical and technical skills, instructional methods, feedback, industry relevance, and professional development. The third section evaluates student skill acquisition in areas namely the cognitive and technical skills, practical application, competency-based learning, retention, self-efficacy, and teamwork. The final section explores correlations between teacher effectiveness and student skill acquisition, analyzing demographic influences and statistical significance.

### **Instrument Validity**

The research instrument underwent validation to ensure accuracy and reliability. Content validity was established through expert reviews by TVET instructors and education specialists to confirm relevance and clarity. Face validity was assessed through feedback from TVET students and instructors to ensure ease of understanding. A pilot test was then conducted, with reliability measured using Cronbach's Alpha ( $\geq 0.7$ ) to confirm internal consistency. Based on expert reviews, respondent feedback, and pilot test results, necessary revisions were made to enhance clarity and effectiveness. These steps ensured that the instrument accurately measured teacher effectiveness and student skill acquisition, providing reliable data for the study.

### **Data-Gathering Procedure**

The data-gathering process began with securing permission from relevant authorities, including the school administration and TVET program coordinators, through a formal request outlining the study's purpose and significance. Ethical approval was also obtained to ensure compliance with research standards. Once approved, data collection tools were prepared, including questionnaires for instructors and skills assessment rubrics for students. Surveys were scheduled in coordination with the school administration, and participants provided informed consent before responding. The collected data was systematically organized and analyzed using statistical methods to determine relationships between instructor effectiveness and student skills acquisition. Findings were compiled into a report and shared with stakeholders for feedback and application.

### **Ethical Considerations**

Ethical considerations were central to this study, ensuring transparency, confidentiality, and participant well-being. Following the guidelines of the American Psychological Association (2017), respondents, including TVET-trained instructors, students, and school administrators from OASIS, were fully informed about the study's purpose, procedures, and potential risks before providing written consent. Participation was voluntary, with the right to withdraw at any time without consequences. Confidentiality was maintained by anonymizing data and restricting access to authorized personnel. Results were reported in aggregate form to prevent identification. Additionally, measures were taken to prevent any psychological, emotional, or professional harm, reinforcing the principles of autonomy and non-maleficence.

### **Statistical Treatment**

This study utilized various statistical tools to analyze the data effectively. Frequency count was applied to tally the occurrences of specific demographic variables, such as age, sex, and educational attainment, providing a clear distribution of respondents. Arithmetic mean was used to determine the average effectiveness of TVET-trained instructors and the overall level of students' skills acquisition, offering a concise measure for comparison. Spearman's rank correlation coefficient assessed the relationship between instructor effectiveness and students' skills acquisition, identifying the strength and direction of the association. Lastly, the Kruskal-Wallis H test examined significant differences in instructor effectiveness based on demographic factors, ensuring a comprehensive analysis of group variations.

## RESULTS AND DISCUSSION

**Table 1 - Demographic Profile of the Respondents**

Profile	f	%
<b>Age</b>		
21 - 30 years old	8	47.06
31 – 40 years old	5	29.41
41 – 50 years old	4	23.53
51 – 60 years old	0	0
Above 60 years old	0	0
<b>Total</b>	<b>17</b>	<b>100.00</b>
<b>Gender</b>		
Male	8	47.06
Female	7	41.17
LGBTQ+	2	11.77
<b>Total</b>	<b>17</b>	<b>100.00</b>
<b>Educational Attainment</b>		
High School Graduate	0	0
Technical Vocational Graduate	0	0
Bachelor’s Degree	2	11.75
Master’s Degree	10	58.83
Doctorate Degree	5	29.42
<b>Total</b>	<b>17</b>	<b>100.00</b>
<b>Length of Service</b>		
Less than 1 year	0	0
1 – 3 years	1	5.88
4 – 6 years	8	47.06
7 – 10 years	5	29.41
More than 10 years	3	17.65
<b>Total</b>	<b>17</b>	<b>100.00</b>
<b>Number of Trainings Attended</b>		
No training	0	0
1 - 3	1	5.88
4 – 6	8	47.06
7 – 10	6	35.30
More than 10	2	11.76
<b>Total</b>	<b>17</b>	<b>100.00</b>

The demographic profile of the respondents highlights a workforce composed mainly of early to mid-career professionals, with a strong emphasis on advanced education and continuous professional development. The distribution of respondents across various demographic indicators provides insight into the composition of technical-vocational educators and their professional backgrounds. Among the age groups, the highest proportion of respondents falls within the 21–30 years old category at 47.06%, followed by 31–40 years old (29.41%) and 41–50 years old (23.53%). No respondents were aged 51 and above, indicating that the workforce is predominantly composed of younger professionals.

In terms of gender, 47.06% of the respondents are male, 41.17% are female, and 11.77% identify as LGBTQ+, reflecting inclusivity within the workforce.

Regarding educational attainment, the majority of respondents hold a master’s degree (58.83%), followed by those with a doctorate (29.42%). A smaller percentage (11.75%) possesses a bachelor’s degree, while none

have only a high school or technical-vocational education. This high level of educational attainment underscores the emphasis on advanced academic qualifications in technical-vocational instruction.

For length of service, nearly half (47.06%) of the respondents have 4 to 6 years of teaching experience, followed by 29.41% with 7 to 10 years and 17.65% with more than 10 years. Only 5.88% have served for 1 to 3 years, while no respondents have less than one year of service. This suggests a workforce with significant professional experience.

In terms of training participation, 47.06% of respondents have attended 4 to 6 trainings, followed by 35.30% with 7 to 10 trainings. Only 11.76% have undergone more than 10 trainings, while 5.88% have attended 1 to 3 trainings. No respondents reported having no training experience. This highlights a strong culture of continuous professional development, which is essential in maintaining instructional effectiveness in technical-vocational education.

The demographic findings reveal that the workforce is primarily composed of young to mid-career professionals with substantial educational qualifications and significant teaching experience. The high percentage of master's and doctorate degree holders reflects a strong commitment to professional growth and instructional excellence. Furthermore, the substantial engagement in professional training programs underscores the dedication of educators to continuous learning and improvement.

**Table 2.1** – Extent of Effectiveness of TVET-Trained Instructors in terms of Pedagogical Skills

Pedagogical Skills	Sd	Mean
1. I effectively use diverse teaching techniques to cater to varied learning needs.	0.45	3.70
2. My lesson plans are well-structured and aligned with course objectives.	0.49	3.47
3. I explain concepts clearly and ensure student comprehension.	0.49	3.52
4. I encourage critical thinking and active class participation.	0.47	3.64
5. My classroom management strategies support an optimal learning environment.	0.47	3.64
<b>Average Mean</b>		<b>3.60 Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

As shown in Table 2.1, the overall mean of 3.60 indicates a very high level of pedagogical effectiveness among TVET-trained instructors, highlighting their strong capability in delivering quality instruction.

The highest-rated competency was "I effectively use diverse teaching techniques to cater to varied learning needs" with a mean of 3.70, demonstrating instructors' ability to adapt their methods to accommodate different learning styles. In contrast, the lowest rated competency "My lesson plans are well-structured and aligned with course objectives" received a mean of 3.47 which still falls within the very high category reinforce that instructors maintain a well-organized and goal-oriented approach to teaching, further supporting student learning outcomes.

These findings align with Okolie et al. 2021, who emphasized that TVET instructors' diverse teaching strategies and active learning approaches contribute to effective student engagement. The results suggest that while instructors demonstrate strong pedagogical competencies, continuous professional development can further enhance their already well-structured lesson planning and instructional delivery.

**Table 2.2** – Extent of Effectiveness of TVET-Trained Instructors in terms of Technical Expertise

Technical Expertise	Sd	Mean
1. I have up-to-date knowledge of technical advancements in my field.	0.47	3.64
2. I demonstrate proficiency in handling industry-standard tools and equipment.	0.49	3.52
3. My technical demonstrations are accurate and relevant to course content.	0.47	3.64

4.	I provide real-world examples to connect theory with practice.	0.42	3.76
5.	I attend regular technical training to stay current in my expertise.	0.60	3.47
<b>Average Mean</b>		<b>3.61 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

As shown in Table 2.1, the overall mean of 3.60 indicates a very high level of pedagogical effectiveness among TVET-trained instructors, demonstrating their strong ability to deliver quality instruction.

The highest-rated competency, "I effectively use diverse teaching techniques to cater to varied learning needs," received a mean of 3.70, highlighting instructors' adaptability in addressing different student learning styles. Meanwhile, the lowest-rated indicator, "My lesson plans are well-structured and aligned with course objectives," obtained a mean of 3.47. Although the lowest, this rating still falls within the very high category, reinforcing that instructors maintain a well-organized and goal-oriented approach to teaching, ultimately enhancing student learning outcomes.

These findings align with Okolie et al. (2021), who emphasized that diverse teaching strategies and structured lesson planning contribute to effective student engagement. This further suggests that continuous professional development in instructional design and pedagogy can enhance teaching effectiveness even more.

**Table 2.3 – Extent of Effectiveness of TVET-Trained Instructors in terms of Instructional Methods**

<b>Instructional Methods</b>		<b>Sd</b>	<b>Mean</b>
1.	I incorporate multimedia and technology to enhance lessons.	0.47	3.64
2.	My instructional methods encourage interactive and collaborative learning.	0.49	3.41
3.	Hands-on training activities are effectively integrated into the curriculum.	0.23	3.94
4.	I modify teaching approaches based on student progress and feedback.	0.42	3.76
5.	Using real-life scenarios in instruction enhances student learning engagement.	0.38	3.82
<b>Average Mean</b>		<b>3.71 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

As illustrated in Table 2.3, TVET-trained instructors exhibit a very high level of effectiveness in instructional methods, with an overall mean of 3.71, demonstrating their ability to implement diverse teaching strategies that enhance student learning and engagement.

The highest-rated item, "Hands-on training activities are effectively integrated into the curriculum," achieved a mean score of 3.94, highlighting the strong emphasis on practical, skills-based learning. Meanwhile, the lowest-rated item, "My instructional strategies promote interactive and collaborative learning," received a mean score of 3.41. Although this was the lowest-rated aspect, it still falls within the very high category, reaffirming that instructors successfully encourage student collaboration while also presenting opportunities for further enhancement.

These findings align with Che Isa et al. (2021), who emphasized that problem-based learning in TVET enhances student engagement and achievement through hands-on activities and real-world applications. To further optimize instructional effectiveness, integrating more structured collaborative learning activities and peer-based interactions could enhance student engagement and knowledge retention.

**Table 2.4** – Extent of Effectiveness of TVET-Trained Instructors in terms of Assessment and Feedback

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. My assessments accurately measure students' competencies and learning outcomes.	0.49	3.52
2. The feedback I provide is specific, actionable, and timely.	0.49	3.58
3. I use assessment results to improve my teaching strategies.	0.38	3.82
4. I implement both formative and summative assessments effectively.	0.47	3.64
5. I give students opportunities to review and understand assessment outcomes.	0.42	3.76
<b>Average Mean</b>	<b>3.67</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

As shown in Table 2.4, TVET-trained instructors demonstrate a very high level of effectiveness in assessment and feedback, with an overall mean of 3.67, reflecting their strong ability to design evaluations and provide meaningful feedback that enhances student learning and skill development.

The highest-rated item, "I use assessment results to improve my teaching strategies," achieved a mean of 3.82, emphasizing instructors' commitment to refining their instructional methods based on student performance. The lowest-rated item, "The feedback I provide is specific, actionable, and timely," recorded a mean of 3.58, further affirming that instructors consistently deliver constructive feedback that effectively supports student progress.

These findings support the insights of Subheesh (2020), who highlighted that well-structured assessments and timely feedback play a crucial role in technical education by guiding students in recognizing their strengths and areas for improvement. Furthermore, the results reinforce the importance of continuous assessment refinement, ensuring that instructional strategies remain responsive to students' learning needs.

**Table 2.5** – Extent of Effectiveness of TVET-Trained Instructors in terms of Industry Relevance

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. The training programs I teach align with industry needs and current labor market demands.	0.49	3.58
2. I ensure that course content reflects modern industry practices.	0.49	3.58
3. Industry experts contribute to the development of the curriculum.	0.47	3.64
4. My training equips students with the skills required by local and global industries.	0.49	3.52
5. Industry connections facilitate internships and job placements for students.	0.49	3.47
<b>Average Mean</b>	<b>3.56</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 2.5 shows that TVET-trained instructors demonstrate a very high level of industry relevance, with an overall mean of 3.56, indicating their strong ability to align training programs with industry standards and labor market demands.

The highest-rated item, "Industry experts contribute to the development of the curriculum," achieved a mean of 3.64, emphasizing the importance of industry collaboration in ensuring relevant and up-to-date training. The lowest-rated item, "Industry connections facilitate internships and job placements for students," received a mean of 3.47, reinforcing that instructors actively foster industry linkages to support student career opportunities.

Overall, TVET instructors modernize curricula, integrate industry insights, and design competency-based training. Strengthening industry partnerships can further enhance TVET effectiveness. These findings align with Alinea (2022), who emphasized continuous industry engagement for curriculum relevance and real-world training.

**Table 2.6 – Extent of Effectiveness of TVET-Trained Instructors in terms of Student Engagement**

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. I actively engage students through class discussions and group activities.	0.49	3.58
2. I create learning environments that foster curiosity and student involvement.	0.32	3.88
3. I make students feel valued and supported during lessons.	0.49	3.47
4. I frequently use active learning techniques (e.g., debates, simulations).	0.45	3.70
5. I address individual student needs and concerns effectively.	0.69	3.41
<b>Average Mean</b>	<b>3.61</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 2.6 highlights the very high effectiveness of TVET-trained instructors in student engagement, with an overall mean of 3.61. This underscores their ability to foster curiosity, participation, and interactive learning experiences.

The highest-rated item, "I create learning environments that foster curiosity and student involvement," received a mean of 3.88, emphasizing the importance of stimulating and engaging learning spaces. The lowest-rated item, "I address individual student needs and concerns effectively," still falls within the very high category which scored 3.41, reinforcing that instructors are highly responsive to student needs while also presenting an opportunity to further enhance personalized support.

These findings align with Kuzminykh et al. in 2021, who emphasized that active learning, student-centered instruction, and supportive classroom environments enhance engagement and academic performance in TVET settings. Strengthening individualized support can further optimize student engagement and learning outcomes.

**Table 2.7 – Extent of Effectiveness of TVET-Trained Instructors in terms of Professional Development**

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. I engage in ongoing professional development programs.	0.47	3.64
2. I adopt new teaching strategies and tools after attending training.	0.49	3.52
3. I collaborate with peers for skill-sharing and improvement.	0.49	3.47
4. Professional development activities address gaps in my teaching competencies.	0.49	3.58
5. My institution provides opportunities for me to enhance my skills	0.32	3.88
<b>Average Mean</b>	<b>3.62</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 2.7 illustrates that TVET-trained instructors exhibit a very high level of effectiveness in professional development, as reflected in the overall mean of 3.62. This underscores their strong dedication to continuous learning and skill enhancement, contributing to the improvement of their teaching competencies.

The highest-rated item, "My institution provides opportunities for me to enhance my skills," received a mean of 3.88, highlighting the significant institutional support for professional growth. Meanwhile, the lowest-rated item, "I collaborate with peers for skill-sharing and improvement," scored 3.47, which is still within the very high range. This reaffirms that instructors actively engage in peer collaboration, with further strengthening of these efforts offering even greater opportunities for shared learning and professional advancement.



These findings align with Arinaitwe (2021), who emphasized that collaboration between vocational training institutions and workplaces enhances professional growth. Enhancing peer collaboration initiatives can further optimize professional development and instructional effectiveness among TVET instructors.

**Table 2.8** – Summary of the Extent of Effectiveness of TVET-Trained Instructors

Components	Mean	Interpretation
Pedagogical Skills	3.60	Very High
Technical Expertise	3.61	Very High
Instructional Methods	3.71	Very High
Assessment and Feedback	3.67	Very High
Industry Relevance	3.56	Very High
Student Engagement	3.61	Very High
Professional Development	3.62	Very High
<b>Average Mean</b>	<b>3.629</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 2.8 provides a summary of the extent of effectiveness of TVET-trained instructors across various components, with an overall mean of 3.629, signifying a very high level of effectiveness. This highlights the instructors’ strong competencies in delivering quality education and maintaining industry relevance. These findings affirm the well-rounded competencies of TVET-trained instructors, reflecting their expertise in pedagogy, technical skills, and professional growth. Strengthening industry linkages can further optimize their effectiveness in preparing students for evolving workforce demands.

**Table 3.1** – Extent of Students’ Skill Acquisition in terms of Cognitive Skills

Instructional Methods	Sd	Mean
1. Training improves students' ability to analyze and solve complex problems.	0.59	3.53
2. Students effectively apply theoretical knowledge to practical scenarios.	0.47	3.32
3. Critical thinking skills are developed through training activities.	0.52	3.41
4. Students demonstrate the ability to evaluate and synthesize information.	0.50	3.55
5. The program enhances students'	0.52	3.54
<b>Average Mean</b>		<b>3.47 Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.1 presents the extent of students’ skill acquisition in terms of cognitive skills, with an overall mean of 3.47, categorized as very high. This indicates that students greatly benefit from the training activities in enhancing their cognitive abilities. The highest-rated item, "Students demonstrate the ability to evaluate and synthesize information," received a mean score of 3.55, highlighting strong integration of knowledge and decision-making abilities. The lowest-rated item, "Students effectively apply theoretical knowledge to practical scenarios," obtained a mean score of 3.32, which falls within very high category. This reflects students’ strong capability to connect theory with practice, reinforcing their comprehensive learning experience. These findings align with Asari et al. (2019), who emphasized that well-structured training programs are essential for fostering students’ critical and creative thinking abilities.

**Table 3.2** – Extent of Students’ Skill Acquisition in terms of Technical Skills

Instructional Methods	Sd	Mean
1. Students acquire hands-on experience with industry-standard tools and techniques.	0.54	3.48
2. Technical competencies align with the job market's expectations.	0.50	3.52
3. Students demonstrate mastery of specific skills relevant to their field.	0.49	3.41

4.	Training includes exposure to advanced	0.50	3.50
5.	Technical skills gained prepare students for workplace challenges.	0.52	3.48
<b>Average Mean</b>		<b>3.48 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.2 presents the extent of students' skill acquisition in technical areas, with an overall mean of 3.48, categorized as very high. This highlights the strong effectiveness of instructional methods in equipping students with essential technical skills.

The highest-rated item, "Technical competencies align with the job market's expectations," received a mean score of 3.52, emphasizing that students feel well-prepared for industry demands. The lowest-rated item, "Students demonstrate mastery of specific skills relevant to their field," obtained a mean score of 3.41, which remains very high. This reflects that students have developed strong expertise in their respective fields, reinforcing the program's effectiveness in fostering industry-relevant skills.

These findings align with Webb in 2021, who emphasized that instructional methods that provide hands-on experience and align with industry needs are crucial for workforce preparation.

**Table 3.3 – Extent of Students’ Skill Acquisition in terms of Practical Application**

<b>Instructional Methods</b>		<b>Sd</b>	<b>Mean</b>
1.	Students can independently apply their skills to solve real-world problems.	0.57	3.51
2.	Practical exercises reinforce the connection between training and industry needs.	0.50	3.44
3.	Internships or job placements improve students’ practical capabilities.	0.50	3.46
4.	Hands-on learning activities enhance students’ confidence in their skills.	0.53	3.42
5.	Real-world applications of skills are emphasized throughout the program.	0.52	3.53
<b>Average Mean</b>		<b>3.47 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.3 presents the extent of students' skill acquisition in practical application, with an overall mean of 3.47, categorized as very high. This underscores the effectiveness of instructional methods in equipping students with strong practical competencies.

The highest-rated item, "Real-world applications of skills are emphasized throughout the program," received a mean score of 3.53, highlighting that students recognize the program’s strong industry relevance. The lowest-rated item, "Hands-on learning activities enhance students’ confidence in their skills," obtained a mean score of 3.42, which remains very high. This affirms that students develop strong confidence in their abilities through hands-on learning, further reinforcing the program's success in skill application.

These findings align with Kolb’s (1984) Experiential Learning Theory, which emphasizes that direct experience and practical engagement lead to deeper learning and skill retention. The results affirm the effectiveness of industry-aligned instructional strategies in enhancing students’ practical competencies.

**Table 3.4 – Extent of Students’ Skill Acquisition in terms of Competency-Based Learning**

<b>Instructional Methods</b>		<b>Sd</b>	<b>Mean</b>
1.	Learning outcomes are based on clearly defined competencies.	0.60	3.35
2.	Students understand the benchmarks for achieving competence in their field.	0.48	3.37
3.	The program emphasizes skill mastery over time-based progression.	0.52	3.39

4. Competency assessments are regularly conducted to ensure student growth.	0.50	3.51
5. Students feel motivated to achieve specific skill-related goals.	0.50	3.45
<b>Average Mean</b>	<b>3.41 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.4 highlights the extent of students' skill acquisition through competency-based learning, with an overall mean of 3.41, categorized as very high. This signifies that the instructional methods effectively support students in developing well-defined competencies relevant to their field of study.

The highest-rated indicator, "Competency assessments are regularly conducted to ensure student growth," received a mean score of 3.51, emphasizing the role of regular evaluations in reinforcing student learning. Even the lowest-rated item, "Learning outcomes are based on clearly defined competencies," with a mean of 3.35, remains very high, affirming that students perceive learning goals as well-structured and aligned with their competencies.

These findings align with Bloom's Mastery Learning Theory (1968), which advocates for skill mastery over time-based progression. The results reinforce that competency-based education is highly effective, as it provides clear benchmarks, emphasizes skill development, and fosters motivation among students. The study underscores the importance of structured and goal-oriented learning frameworks in ensuring that students achieve mastery in their respective fields.

**Table 3.5 – Extent of Students' Skill Acquisition in terms of Retention and Transferability**

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. Skills acquired during training are retained over time.	0.50	3.51
2. Students can transfer learned skills to different job roles or industries.	0.50	3.48
3. Training prepares students to adapt skills to new technologies and environments.	0.49	3.45
4. Alumni report applying their skills in various professional contexts.	0.49	3.40
5. Retention of knowledge is supported by continuous practice and review.	0.50	3.50
<b>Average Mean</b>	<b>3.47 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.5 presents the extent of students' skill acquisition in terms of retention and transferability, with an overall mean of 3.47, classified as very high. This indicates that the instructional methods effectively enable students to retain their acquired skills and apply them across various professional contexts.

The highest-rated indicator, "Skills acquired during training are retained over time," received a mean score of 3.51, highlighting the strong impact of the program in reinforcing long-term knowledge retention.

The lowest-rated, though still very high, item was "Alumni report applying their skills in various professional contexts," with a mean of 3.40. This reflects that students successfully carry over their acquired competencies into their professional careers, demonstrating the program's effectiveness in equipping them with relevant and adaptable skills.

These findings align with Thorndike's Theory of Transfer of Learning, which emphasizes that skills learned in one context can be effectively applied in different situations when reinforced through practice and relevant experiences. The results affirm that structured instructional strategies, continuous reinforcement, and exposure to diverse scenarios enhance skill retention and transferability, ensuring students are well-prepared for dynamic professional environments.

**Table 3.6** – Extent of Students’ Skill Acquisition in terms of Self-Efficacy

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. Training instills confidence in students’ ability to succeed in their field.	0.49	3.54
2. Students feel capable of handling professional challenges.	0.50	3.49
3. Success in training boosts students’ motivation and self-belief.	0.50	3.58
4. Instructors provide support that reinforces students' self-efficacy.	0.50	3.53
5. Students express a strong sense of preparedness for their careers.	0.49	3.41
<b>Average Mean</b>	<b>3.51</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.6 presents the extent of students’ skill acquisition in terms of self-efficacy, with an overall mean of 3.51, classified as very high. This indicates that the instructional methods successfully build students' confidence, ensuring they feel capable of handling professional challenges and excelling in their chosen careers.

The highest-rated indicator, "Success in training boosts students' motivation and self-belief," received a mean score of 3.58, highlighting the strong impact of training in fostering students' confidence and drive for achievement. The lowest-rated, though still very high, item was "Students express a strong sense of preparedness for their careers," with a mean of 3.41. This underscores that students recognize their readiness for professional responsibilities, demonstrating the effectiveness of the training program in equipping them with essential skills for career success.

These findings align with Lyons and Bandura’s study, which underscores the critical role of self-efficacy in career success. Their research emphasizes that students with strong self-belief are more resilient, persist in overcoming challenges, and adapt effectively to evolving professional demands. The results affirm that an encouraging learning environment, continuous reinforcement, and real-world applications significantly enhance students' self-efficacy, ensuring they are well-equipped for long-term professional success.

**Table 3.7** – Extent of Students’ Skill Acquisition in terms of Feedback and Reflection

<b>Instructional Methods</b>	<b>Sd</b>	<b>Mean</b>
1. Students receive constructive feedback to improve their skills.	0.49	3.45
2. Reflection activities encourage students to evaluate their progress.	0.48	3.36
3. Peer and instructor feedback support continuous improvement.	0.50	3.43
4. Students use feedback to set personal and professional goals.	0.50	3.43
5. Regular reflection helps students identify strengths and areas for growth.	0.50	3.44
<b>Average Mean</b>	<b>3.42</b>	<b>Very High</b>

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.7 presents the extent of students’ skill acquisition in terms of feedback and reflection, with an overall mean of 3.42, classified as very high. This indicates that the instructional methods effectively foster students’ ability to utilize feedback and engage in reflection, enhancing their learning and professional growth.

The highest-rated indicator, "Students receive constructive feedback to improve their skills," received a mean score of 3.45, highlighting the strong impact of structured feedback in refining students' competencies. The lowest-rated, though still very high, item was "Reflection activities encourage students to evaluate their progress," with a mean of 3.36. This underscores that students actively engage in self-assessment, demonstrating the effectiveness of reflection activities in supporting continuous improvement and personal development.

These findings align with Kolb’s Experiential Learning Theory and the study of Wijnen-Meijer et al. (2022), which emphasize that structured feedback and reflective practices significantly enhance skill development and professional preparedness. The results affirm that an encouraging learning environment, continuous

feedback, and opportunities for reflection contribute to students' ability to assess their growth and maximize learning outcomes.

**Table 3.8** – Extent of Students' Skill Acquisition in terms of Collaboration and Teamwork

Instructional Methods	Sd	Mean
1. Training fosters students' ability to work effectively in teams.	0.46	3.28
2. Group activities develop collaboration and interpersonal skills.	0.50	3.48
3. Students demonstrate the ability to lead	0.49	3.39
4. Problem-solving tasks encourage cooperative efforts among students.	0.49	3.40
5. Collaborative skills gained prepare students for team-based work environments.	0.50	3.50
<b>Average Mean</b>	<b>3.41 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.8 presents the extent of students' skill acquisition in terms of collaboration and teamwork, with an overall mean of 3.41, classified as very high. This indicates that the instructional methods effectively equip students with the ability to work collaboratively, preparing them for team-based professional environments.

The highest-rated indicator, "Collaborative skills gained prepare students for team-based work environments", received a mean score of 3.50, highlighting the strong impact of teamwork training in fostering students' adaptability and cooperation. The lowest-rated, though still very high, item was "Training fosters students' ability to work effectively in teams" (M = 3.28, SD = 0.46). This reinforces that students already exhibit strong teamwork capabilities, while also presenting opportunities for further enhancement through structured collaborative experiences.

These findings align with the study of Ahmed et al. (2022), which underscores the role of teamwork-based learning environments in enhancing students' interpersonal skills, problem-solving abilities, and adaptability. The results affirm that exposure to collaborative activities and cooperative problem-solving significantly strengthens students' teamwork skills, ensuring their readiness for professional success.

**Table 3.9** – Summary of the Extent of Students' Skill Acquisition

Components	Mean	Interpretation
Cognitive Skills	3.47	Very High
Technical Skills	3.48	Very High
Practical Application	3.47	Very High
Competency-Based Learning	3.41	Very High
Retention and Transferability	3.47	Very High
Self-Efficacy	3.51	Very High
Feedback and Reflection	3.42	Very High
Collaboration and Teamwork	3.41	Very High
<b>Average Mean</b>	<b>3.452 Very High</b>	

**Scale:** 1.0 – 1.75 “Very Low”, 1.76 – 2.50 “Low”, 2.51 – 3.25 “High”, 3.26 – 4.00 “Very High”

Table 3.9 presents the summary of the extent of students' skill acquisition, with an overall mean of 3.452, classified as very high. This highlights the strong effectiveness of the training programs in fostering essential competencies across multiple skill domains, ensuring that students are well-prepared for professional success.

Among the components, self-efficacy received the highest rating, with a mean of 3.51, demonstrating students' strong confidence in applying their acquired skills and managing professional challenges effectively. Meanwhile, collaboration and teamwork, with a mean of 3.41, also achieved a very high rating, showcasing

students' well-developed ability to work cooperatively with others. This suggests that their teamwork skills are already strong and could be further enriched through additional structured team-based experiences.

These findings align with Oroszi (2020), who emphasized that students trained in competency-based programs exhibit higher self-efficacy, enhanced skill retention, and greater adaptability in professional settings. Their study reinforces the notion that hands-on, industry-relevant training strengthens students' confidence and employability, affirming the effectiveness of the instructional methods used in this study.

**Table 4 – Test of Significant Relationship Between TVET-trained Instructors and Students’ Skills Acquisition**

Test Variables	Correlation Coefficient	P value	Decision
TVET-trained Instructors and Students’ Skills Acquisition	0.031	0.906	retain the H <sub>o</sub>

**Note:** If  $p \leq 0.05$ , with a significant relationship

Table 4 presents the results of the test of significant relationship between TVET-trained instructors and students' skills acquisition. The correlation coefficient of 0.031 indicates a very weak positive relationship between the two variables. Moreover, the p-value of 0.906 exceeds the significance threshold of  $p \leq 0.05$ , leading to the retention of the null hypothesis (H<sub>o</sub>). This suggests that the effectiveness of TVET-trained instructors does not have a statistically significant relationship with students' skill acquisition.

However, these findings suggest that while instructors play a crucial role in skill development, other external factors such as student motivation, institutional resources, industry partnerships, and curriculum structure may contribute significantly to students’ skill acquisition. This highlights the importance of a holistic learning environment that integrates multiple elements beyond instructor effectiveness to maximize student outcomes.

These results reinforce the idea that broader systemic and experiential learning components play a vital role in shaping students' competencies. While TVET-trained instructors contribute meaningfully to students' development, enhancing other key educational factors may further strengthen skill acquisition and professional preparedness.

**Table 5 – Test of Significant Difference in the Effectiveness of TVET-trained Instructors According to their Demographic Profile**

Kruskal Wallis Test	df	P value	Decision
Effectiveness of TVET-trained Instructors Vs Age	2	0.821	retain the H <sub>o</sub>
Effectiveness of TVET-trained Instructors Vs Gender	2	0.336	retain the H <sub>o</sub>
Effectiveness of TVET-trained Instructors Vs Educational Attainment	2	0.588	retain the H <sub>o</sub>
Effectiveness of TVET-trained Instructors Vs Length of Service	3	0.465	retain the H <sub>o</sub>
Effectiveness of TVET-trained Instructors Vs Number of Trainings Attended	3	0.188	retain the H <sub>o</sub>

**Note:** If  $p \leq 0.05$ , with a significant difference

Table 5 presents the results of the Kruskal-Wallis test examining whether significant differences exist in the effectiveness of TVET-trained instructors based on their demographic profile. The findings reveal that none of the demographic factors—including age, gender, educational attainment, length of service, and number of trainings attended—showed a statistically significant difference in instructor effectiveness. This is indicated

by the p-values, all of which are greater than 0.05, leading to the retention of the null hypothesis (Ho) for all variables.

These results suggest that instructor effectiveness remains consistent across different demographic backgrounds, emphasizing that professional competencies and instructional practices play a more crucial role than individual characteristics in determining effectiveness. This implies that regardless of age, gender, experience, or education level, TVET-trained instructors demonstrate comparable effectiveness in delivering quality instruction.

These findings align with Darling-Hammond (2017), who asserts that continuous professional development, pedagogical expertise, and instructional strategies are the primary drivers of teacher effectiveness, rather than demographic characteristics. This reinforces the value of structured training programs and professional growth opportunities in ensuring high-quality instruction across diverse instructor profiles.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusion

The TVET-trained instructors at Oroquieta Agro-Industrial School (OAIS) are highly effective across all areas assessed, including pedagogical skills, technical expertise, instructional methods, assessment and feedback, industry relevance, student engagement, and professional development. This effectiveness positively impacts students' cognitive, technical, and practical skill acquisition, preparing them for real-world challenges in the workplace.

### Recommendation

To enhance the effectiveness of TVET programs, instructors should engage in continuous professional development and integrate modern teaching technologies. Students are encouraged to actively participate in hands-on training and internships to strengthen their practical skills. TVET institutions must regularly update curricula to align with industry needs, while employers should collaborate with these institutions by offering internships and providing feedback on skill gaps. Policy makers should allocate resources to improve teacher training, curriculum development, and infrastructure. Local communities can promote TVET programs to boost enrollment and economic growth. Lastly, accrediting bodies and education planners must establish and enforce updated standards to maintain quality and industry relevance in vocational education.

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