

Disparities in Technical and Vocational Education Attrition in the Philippines: From Enrollment to Certification

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Abstract. This study explores national and regional disparities in attrition across the Technical and Vocational Education and Training (TVET) pipeline in the Philippines, focusing on the transition from enrollment to TESDA certification. Despite rising national enrollment and graduation figures, significant leakages persist between critical stages—graduation, assessment, and certification. Using a descriptive-comparative research design and 2024 secondary data from TESDA, this study analyzes performance across all 17 regions, calculating attrition percentages and visualizing disparities through statistical tables and graphs. Findings reveal an overall national attrition rate of 14%, with the most substantial drop (5.93%) occurring between assessment and certification. Some regions, including CARAGA, CAR, and Region IX, exhibit alarmingly high total attrition rates exceeding 50%, underscoring the systemic barriers that hinder learners from completing the certification process. In contrast, regions such as VI and VIII show more favorable outcomes, highlighting the uneven distribution of TVET support and access across the country. Contributing factors to high attrition include limited access to assessment centers, weak industry linkages, and infrastructure deficits, particularly in geographically isolated and disadvantaged areas. The study underscores the need for region-specific, stage-targeted interventions to improve retention and certification outcomes. Strengthening public-private partnerships, enhancing assessment accessibility, and aligning programs with local labor market needs are recommended to bridge the gaps. These findings offer policy-relevant insights for TESDA and stakeholders in designing a more inclusive, responsive, and equitable TVET system that advances national goals in skills development and human capital formation.

Keywords: Attrition; Certification; Regional disparities; TESDA; TVET

1.0 Introduction

Technical and Vocational Education and Training (TVET) is a cornerstone of the Philippine educational system. It plays a vital role in fostering equitable economic growth, reducing poverty, and developing a skilled workforce. This directly contributes to achieving the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth). The Technical Education and Skills

Development Authority (TESDA) administers TVET programs, offering competency-based training designed to equip out-of-school youths, unemployed adults, and underprivileged populations with the skills needed for gainful employment and entrepreneurship. TESDA's crucial role in advancing the nation's socio-economic objectives and addressing challenges like youth unemployment and skills mismatches has been widely recognized (TESDA, 2023; UNESCO-UNEVOC, 2019).

Despite national-level progress in enrollment and certification numbers (TESDA, 2020a; PIDS, 2024), notable regional disparities persist when examining learner development from enrollment through certification. Many students fail to complete competency assessments, drop out before finishing programs, or never reach certification. To critically investigate these transitional phases, this study employs TESDA's 2024 secondary data on enrollment, graduation, assessment, and accreditation to analyze regional and national differences in TVET outputs. These regional differences are particularly evident in attrition points and dropout trends, which are often underreported in TESDA data. Few studies have explored regional variations in completion rates, despite evidence showing the positive impacts of TVET graduates on employability and income (Vandenberg & Laranjo, 2021; Wongmonta, 2023). The Philippine Institute for Development Studies (PIDS, 2022) highlighted persistent gaps between localized TVET quality and regional labor market demands, noting that enterprise-based training and private sector engagement remain limited outside Metro Manila and CALABARZON. These findings underscore the need for detailed, stage-wise information on TVET outcomes that accounts for attrition throughout the pipeline—enrollment, graduation, assessment, and certification.

Moreover, studies such as Choi (2021) reveal that the benefits of vocational education vary significantly between urban and rural populations. Rural students face greater challenges in accessing certification opportunities due to infrastructural, financial, and geographic barriers. Attrition risks are compounded by rural TVET institutions' inconsistent access to qualified instructors, assessment resources, and industry linkages (Asian Development Bank, 2021; TESDA, 2020b). While TESDA's 2019 Study on the Employment of TVET Graduates (SETG) provides valuable insights on post-certification employment trends, it does not investigate the causes of dropout before certification—a critical gap for improving learner retention and institutional effectiveness.

Aligned with the Second Congressional Commission on Education (EDCOM II, 2025), which emphasizes inclusive, equitable, and quality TVET programs to strengthen workforce competitiveness and regional development, it is imperative to evaluate the entire TVET journey across the country. Focusing solely on inputs (enrollment) and outputs (certification) risks obscuring the challenges and leakages occurring at intermediary stages such as graduation and assessment (TESDA, 2022; Orbeta & Paqueo, 2022). Current policy proposals often generalize issues without addressing region-specific causes of non-completion, and there is a notable lack of regional studies on stage-wise attrition (PIDS, 2024). An enhanced understanding of where and why students drop out will enable TESDA and other stakeholders to identify priority areas for targeted intervention. This study aims to fill this gap by utilizing TESDA's 2024 secondary data to (1) examine the number of trainees enrolled, graduated, assessed, and certified nationwide by TESDA; (2) compare TVET performance across various stages—enrollment, graduation, assessment, and certification; and (3) analyze the comparative attrition rate throughout the TVET pipeline.

2.0 Methodology

2.1 Research Design

This study employed a descriptive-comparative research design utilizing secondary data sourced from TESDA's 2024 regional records and used to compare the TVET enrollees, graduates, assessed and certified individuals, and the attrition rate by examining these groups as they naturally occur without manipulating any variables (Ishtiaq, 2019). The design facilitated a systematic analysis of quantitative data on trainee enrollment, graduation, assessment, and certification across different regions of the Philippines. By analyzing existing official data, the study aimed to compare regional performance at various stages of the TVET pipeline, identify systemic leakages, and examine disparities.

2.2 Research Participants

The population for this study comprised all trainees registered in TESDA's official records for the year 2024. This includes individuals who enrolled in TVET programs nationwide, regardless of age, gender, socio-economic

status, or geographic location. Only trainees from 2024 who enrolled in recognized TESDA TVET programs and have complete records for enrollment, assessment, and certification are included. This excludes trainees with incomplete or missing data in TESDA's 2024 database, those enrolled in non-registered or unofficial programs outside TESDA accreditation, and those who withdrew or transferred before completing any stage of the pipeline if such data were not recorded reliably.

2.3 Research Instruments

Since the study relied solely on secondary data, no primary research instruments, such as surveys or tests, were used. The data were obtained from TESDA's official reports and databases for 2024, including TESDA's Annual TVET Statistics (TESDA, 2024) and TESDA's Regional Performance Reports (TESDA, 2024). These sources provided comprehensive and reliable information to support the research findings. Validity and Reliability of Data Sources: TESDA's data collection system is standardized, systematically maintained, and undergoes periodic validation and audits for accuracy, ensuring data validity. As government-administered, official records, these data are reliable for research purposes, reflecting the actual figures of enrollment, assessments, and certifications across regions.

2.4 Data Gathering Procedure

Data collection involved obtaining official TESDA reports and datasets for the year 2024 from TESDA's website and internal records. This process included accessing TESDA's publicly available data repositories and official reports, extracting relevant figures on trainee enrollment, graduation, assessment, and certification disaggregated by region and quarter, and organizing the data into structured formats such as spreadsheets to facilitate analysis. To ensure accuracy, the extracted data were cross-verified with official TESDA publications. Since secondary data were used, there was no direct interaction with participants, and consent was inherently secured through the official reporting framework.

2.5 Data Analysis Procedure

Data analysis involved several key steps. First, descriptive statistics were computed to summarize fundamental frequencies and totals for enrollment, graduation, assessment, and certification from quarters one to four across different regions. This step provided an overview of what had occurred by aggregating and visualizing the data to identify patterns and trends. Next, attrition rate calculations were performed by determining the dropout rates at each stage of the pipeline; this was done by dividing the number of trainees lost at each transition (e.g., enrollment to graduation) by the initial number at the previous stage, thus quantifying stage-to-stage losses. Finally, a comparative analysis was conducted using visual tools such as tables and graphs to compare regional performance at each stage of the pipeline, facilitating the identification of differences and insights across regions. This approach combined statistical summaries, rate calculations, and visual comparisons to provide a comprehensive understanding of the data.

2.6 Ethical Considerations

Given that the study solely relied on secondary publicly available data, ethical concerns related to participant privacy and consent were minimal. Nonetheless, several ethical practices were carefully observed throughout the research. The study utilized official and publicly accessible TESDA data, ensuring data integrity and authenticity. Proper citation and acknowledgment of TESDA's sources were consistently maintained. To protect confidentiality, data were reported without identifying individual trainees. Transparency was upheld by clearly stating data sources and methodologies. Additionally, the research adhered to established guidelines on responsible research conduct and data management to prevent any misrepresentation or misuse of information.

3.0 Results and Discussion

3.1 TVET Enrollment by Region

Depicted in Table 1 is the TVET (Technical and Vocational Education and Training) enrollment by region in the Philippines for the year 2024, broken down by quarter and showing total output for each region. The National Capital Region (NCR) recorded the highest enrollment with a total of 411,902, followed by Region III with 357,043 and Region IV-A with 247,664. BARMM had the lowest enrollment at 62,088. Enrollment figures increased each quarter across most regions, starting from 247,010 in the first quarter and rising steadily to 1,357,627 in the fourth quarter. The overall total enrollment for all regions combined in 2024 reached 3,344,063, highlighting the scale and

reach of TVET programs nationwide.

NCR (National Capital Region) has the highest number of TVET enrollees in 2024, mainly because it is the country's economic and urban center, attracting a large population and offering more educational and employment opportunities. The region also has a higher concentration of TVET providers, with private providers accounting for about 57% of total enrollment nationally, reflecting greater access to training programs in NCR (TESDA, 2024; TESDA, 2024). Additionally, NCR's population generally has a higher literacy rate and better socioeconomic conditions, which encourage participation in TVET programs (TESDA, 2024). In contrast, BARMM (Bangsamoro Autonomous Region in Muslim Mindanao) has the lowest enrollment due to limited access to education and TVET infrastructure, lower literacy rates, and ongoing socioeconomic challenges such as poverty and conflict that restrict skills training participation (TESDA, 2024; PNA, 2024).

Table 1. TVET Enrolment by Region (CY 2024)

Region	Q1	Q2	Q3	Q4	Total Output
NCR	34,744	80,858	129,026	165,276	411,902
CAR	11,753	35,690	55,622	66,611	169,666
I	13,629	40,416	66,434	82,949	203,428
II	16,848	39,348	55,501	63,061	174,758
III	22,921	61,230	118,332	155,560	357,043
IV-A	18,017	44,300	75,589	109,758	247,664
IV-B	11,328	31,066	50,054	63,044	156,492
V	9,738	26,924	51,169	64,277	152,108
VI	7,706	21,778	36,540	44,814	126,848
VII	16,643	43,063	72,030	94,874	226,530
VIII	13,798	25,154	40,966	61,778	141,692
IX	13,752	35,084	53,642	71,688	174,166
X	14,271	40,355	67,611	71,597	193,778
XI	16,831	40,458	57,150	90,692	204,431
XII	15,067	42,970	63,040	97,007	219,084
CARAGA	8,550	21,175	35,841	44,819	122,385
BARMM	1,414	11,877	20,375	27,822	62,088
Overall Total	247,010	641,746	1,048,922	1,357,627	3,344,063

Note: Data Retrieved from 2024 TVET Statistics.

Quarter 4 consistently shows the highest number of enrollees because TVET enrollment is cumulative throughout the year, with many programs designed to peak or conclude in the last quarter. Private TVET providers, which contribute the majority of enrollments, also intensify recruitment and increase program offerings toward the end of the year, resulting in a surge in Q4 enrollment numbers (TESDA, 2024). For example, in Q4 2024, total enrollment reached 1,375,627 students, a significant increase compared to earlier quarters (TESDA, 2024; TESDA News, 2024). This seasonal pattern reflects both program scheduling and heightened demand for skills training at year-end.

3.2 TVET Graduation by Region

Table 2 presents the number of TVET (Technical and Vocational Education and Training) graduates by region in the Philippines for the calendar year 2024, broken down by quarter. The data shows that the National Capital Region (NCR) had the highest number of graduates with a total output of 401,617, followed by Region III with 344,849, and Region IV-A with 211,009. In contrast, BARMM recorded the lowest total with 53,911 graduates. Graduation numbers generally increased each quarter across most regions, with the national totals rising from 228,551 in the first quarter to 1,255,674 in the fourth quarter. The overall total number of TVET graduates nationwide for 2024 reached 3,096,438, reflecting a significant output from the technical and vocational education sector.

One key reason for NCR's high number of graduates is its status as the economic and urban center of the Philippines, which attracts a large population and offers more educational and employment opportunities, resulting in higher enrollment and graduation rates (TESDA, 2024). NCR also has a greater concentration of TVET institutions and training centers, making it easier for students to access and complete technical and vocational programs (TESDA, 2024). In contrast, BARMM's low graduation numbers can be attributed to limited access to educational facilities, lower literacy rates, and ongoing socioeconomic challenges such as poverty and conflict,

which hinder participation and completion in TVET programs (TESDA, 2024).

Graduation numbers are highest in quarter 4 across all regions, with a national total of 1,255,674 graduates, compared to just 228,551 in quarter 1. This trend occurs because TVET graduation is cumulative throughout the year, with many programs structured to conclude in the last quarter, and students who enrolled in earlier quarters typically finish their courses by year-end (TESDA, 2024). Additionally, training centers and institutions often schedule graduations and certifications towards the end of the year, contributing to the significant spike in quarter 4 graduates (TESDA, 2024).

Table 2. TVET Graduation by Region (CY 2024)

Region	Q1	Q2	Q3	Q4	Total Output
NCR	36,775	82,555	126,820	155,467	401,617
CAR	10,350	34,908	53,699	62,700	161,649
I	13,745	40,967	61,961	75,862	186,315
II	14,052	34,760	51,035	58,178	159,024
III	25,760	65,075	113,692	138,492	344,849
IV-A	14,768	39,682	65,572	90,987	211,009
IV-B	8,530	27,440	46,141	58,199	140,310
V	10,684	27,358	49,928	59,974	147,944
VI	8,347	21,741	35,307	43,350	123,345
VII	15,630	38,909	65,120	86,615	206,274
VIII	12,172	27,989	40,994	57,706	138,861
IX	10,195	32,899	48,805	65,285	157,684
X	12,245	40,900	59,393	72,953	184,793
XI	12,359	33,791	57,171	80,774	185,119
XII	12,838	38,194	57,171	83,261	191,464
CARAGA	8,044	19,540	33,492	41,194	102,270
BARMM	2,057	8,880	18,297	24,677	53,911
Overall Total	228,551	615,588	984,598	1,255,674	3,096,438

Note: Data Retrieved from 2024 TVET Statistics.

3.3 TVET Assessment by Region

Table 3 presents the TVET (Technical and Vocational Education and Training) assessment output by region in the Philippines for the year 2024, with data organized by quarter and total output. The National Capital Region (NCR) achieved the highest assessment output, totaling 678,543, followed by Region IV-A with 332,282 and Region III with 319,323. In contrast, BARMM (Bangsamoro Autonomous Region in Muslim Mindanao) had the lowest output at 48,803, while CARAGA also reported a relatively low total of 52,102. The data reveals a consistent increase in assessment numbers each quarter, beginning with 248,808 in the first quarter and rising to 1,152,431 in the fourth quarter. This upward trend suggests a growing participation and completion of TVET assessments as the year progressed. Overall, the total number of TVET assessments conducted nationwide in 2024 reached 3,057,387, highlighting the significant scale of technical and vocational skills evaluation across the country.

Table 3. TVET Assessment by Region (CY 2024)

Region	Q1	Q2	Q3	Q4	Total Output
NCR	62,225	148,872	211,291	256,159	678,543
CAR	7,111	20,148	29,112	32,307	89,679
I	13,291	39,662	55,954	66,355	174,303
II	8,234	26,312	36,525	40,417	111,488
III	29,036	68,970	99,578	120,539	319,323
IV-A	27,204	70,785	106,548	127,741	332,282
IV-B	5,940	17,752	27,414	33,754	84,860
V	11,064	32,508	45,787	52,779	136,158
VI	10,551	27,068	40,191	47,792	125,843
VII	17,960	45,011	70,563	83,037	215,657
VIII	11,205	37,036	49,443	56,436	154,120
IX	4,925	17,175	25,690	31,128	78,493
X	10,186	28,702	39,867	46,958	154,494
XI	12,533	37,879	50,364	60,182	160,938
XII	9,450	35,589	45,633	54,629	140,301
CARAGA	4,312	11,207	16,415	20,170	52,102
BARMM	3,581	9,031	16,362	22,048	48,803
Overall Total	248,808	673,707	966,737	1,152,431	3,057,387

Note: Data Retrieved from 2024 TVET Statistics.

NCR (National Capital Region) has the highest number of TVET assessed individuals in 2024, totaling 678,543, primarily because it is the country's economic and urban hub, attracting a large population and offering more opportunities for technical and vocational education and training (TVET) assessments. The region benefits from a dense concentration of TVET institutions and providers, which increases accessibility and participation in assessment programs (TESDA, 2024). Additionally, NCR's higher literacy rate and better socioeconomic conditions contribute to higher completion and assessment rates compared to other regions (TESDA, 2024). In contrast, BARMM (Bangsamoro Autonomous Region in Muslim Mindanao) recorded the lowest number of assessed individuals, with only 40,301 in 2024. This is mainly due to limited access to educational facilities, fewer TVET institutions, and ongoing socioeconomic challenges such as poverty and conflict, which hinder participation in and completion of technical and vocational training (ILO, 2024). BARMM's TVET sector also faces gaps in program availability and alignment with local employment opportunities, further restricting assessment numbers (ILO, 2024).

Quarter 4 shows the highest number of assessed individuals across all regions, with 1,152,431 assessments completed, compared to lower numbers in previous quarters. This trend is due to the cumulative nature of TVET participation throughout the year, with many programs and assessments scheduled to conclude in the last quarter. TVET providers, especially private institutions, also intensify recruitment and assessment activities toward the end of the year, resulting in a significant increase in Q4 figures (TESDA, 2024). The 4th quarter typically reflects a 20% increase in assessment output compared to the previous quarter, as programs are designed to culminate at year-end and institutions maximize their annual targets (TESDA, 2024).

3.4 TVET Certification by Region

Table 4 presents the TVET (Technical and Vocational Education and Training) certification output by region in the Philippines for the year 2024, with data organized by quarter and total output. The data shows a consistent increase in certifications throughout the year, with Q4 generally having the highest output across most regions, contributing to the "TOTAL OUTPUT." The National Capital Region (NCR) consistently leads in certification numbers, accumulating a total output of 663,614, significantly higher than other regions. Regions IV-A (CALABARZON) and Region VII (Central Visayas) also show substantial total outputs of 315,425 and 204,428, respectively, indicating vigorous TVET activity in these areas. Conversely, CARAGA and BARMM consistently record the lowest numbers of certifications, with total outputs of 46,335 and 46,530, respectively. The overall total certifications for 2024 reached 2,876,124, reflecting a robust and growing TVET sector in the country.

Table 4. TVET Certification by Region (CY 2024)

Region	Q1	Q2	Q3	Q4	Total Output
NCR	61,005	145,439	206,525	250,645	663,614
CAR	6,599	18,686	26,756	29,704	81,645
I	12,213	36,986	52,576	62,562	163,337
II	7,830	24,206	33,804	37,414	103,254
III	27,425	64,481	92,373	111,812	296,131
IV-A	26,034	66,773	100,785	120,843	315,425
IV-B	5,578	16,723	25,918	31,933	80,155
V	9,427	27,143	38,464	44,509	119,543
VI	9,480	24,578	36,578	43,341	114,976
VII	17,238	42,459	66,596	78,573	204,428
VIII	10,971	35,929	47,784	54,357	148,089
IX	4,503	15,717	23,475	28,475	71,680
X	9,266	26,033	36,441	42,973	141,661
XI	11,425	34,311	45,593	54,438	145,747
XII	8,923	33,734	43,349	51,858	133,574
CARAGA	3,861	9,820	14,529	17,946	46,335
BARMM	3,390	8,611	15,573	20,945	46,530
Overall Total	235,168	631,629	907,119	1,082,328	2,876,124

Note: Data Retrieved from 2024 TVET Statistics.

The National Capital Region (NCR) consistently has the highest number of TVET certifications in 2024, with a total output of 663,614. This is due to several key factors. As the economic and urban hub of the Philippines, NCR attracts a large population and offers more opportunities for technical and vocational education, supported by a

dense concentration of TVET institutions and assessment centers, which makes certification more accessible and convenient for residents (TESDA, 2024). In contrast, the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) has the lowest certification output at 46,530, attributed to limited access to training facilities, fewer registered programs—especially at higher certification levels—and persistent socioeconomic challenges such as poverty, conflict, and a mismatch between available programs and local labor market needs (TESDA, 2024).

Quarter 4 consistently records the highest number of certifications across all regions, with a national output of 1,082,328 certifications. This is because certification is cumulative throughout the year, and many programs are structured to culminate in assessments and certifications toward the end of the year. TVET providers, particularly private institutions, often intensify assessment and certification activities in the last quarter to meet annual targets, leading to a significant spike in numbers; for instance, the 4th quarter typically reflects a 20% increase compared to the previous quarter. This scheduling aligns with institutional reporting cycles and the completion of training batches, making Q4 the peak period for certification output (TESDA, 2024).

Regarding CARAGA and BARMM, both regions have nearly the same number of certified individuals in 2024 (46,335 for CARAGA and 46,530 for BARMM), despite CARAGA having more enrollees. Differences in certification rates and program completion can explain this. CARAGA's certification rate is lower compared to regions with higher outputs, possibly due to geographical challenges, limited assessment centers, or lower completion rates among enrollees (TESDA, 2024; TESDA-Caraga, 2024). In BARMM, although overall enrollment is lower, those who do enroll may be more likely to complete certification, possibly due to targeted programs, scholarship initiatives, or stronger community-based support. Additionally, both regions face unique barriers—CARAGA with its mountainous terrain and scattered population, and BARMM with socioeconomic and infrastructure challenges, which limit the absolute number of certifications despite differences in enrollment (TESDA, 2024d; TESDA-Caraga, 2024).

3.5 Comparative Trends of TVET Enrollees, Graduates, Assessed, and Certified

Depicted in Figure 1 are the TVET students, showing a decrease in transition rates from 3,344,063 enrolled to only 2,876,124 certified. It is this consistency from enrollment to graduation (3,096,438), assessment (3,057,387), and certification that has highlighted the systemic inefficiencies at every stage. The initial decline from enrollment to graduation is probably due to dropouts from the program because of financial inhibitions, personal issues, and even academic difficulties, along with a delay in completing the program. Subsequent drop-off from graduation to assessment indicates that some graduates were not willing to take the test due to cost, a presumed poor return, or difficulty in qualifying, exacerbated by logistical challenges such as access to assessment centers. The gap between assessment and certification points to issues such as unmet competency standards, bureaucratic delays, or incomplete post-assessment steps. Collectively, these trends reveal more profound structural weaknesses, including insufficient student support, misalignment with industry demands, and funding shortfalls. To reverse this downward trajectory, targeted interventions—such as bolstering financial aid, simplifying assessment access, and streamlining certification processes—are critical to improving retention and ensuring more learners successfully navigate the TVET pipeline.

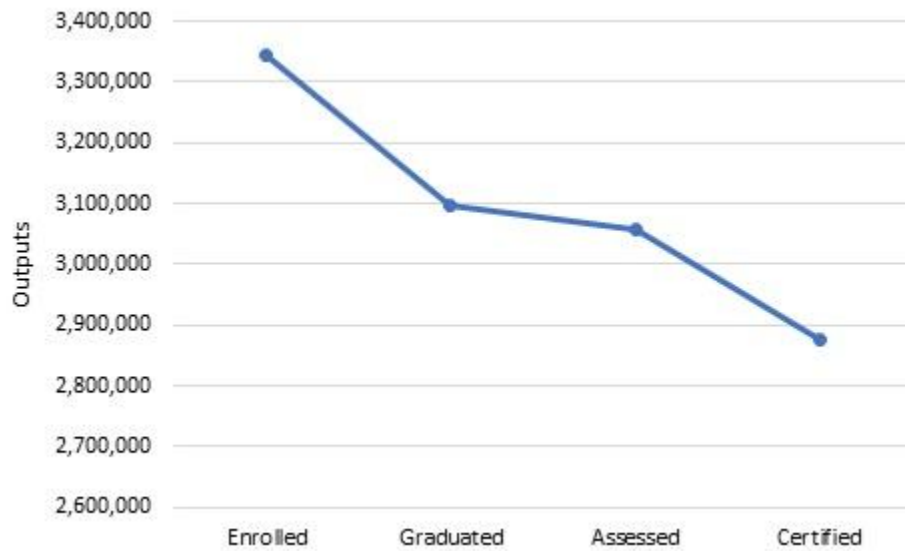


Figure 1. *Comparative Trends of TVET Enrollees, Graduates, Assessed, and Certified*

Similar trends have been observed in related studies, such as Baral's (2024) examination of declining enrollment and retention in long-term engineering programs, which highlights stakeholder concerns over program accessibility and completion barriers. Likewise, Bongani (2023) analyzed access and success rates in South African TVET colleges, noting that while enrollment numbers may be high, institutional and structural challenges often prevent students from progressing to certification.

Further insights come from Issa and Raphael (2025), who studied enrollment patterns in East African TVET systems and found that mismatches between program offerings and labor market demands contribute to lower completion rates. In the Philippine context, Orbeta (2021) and Edralin and Pastrana (2023) identified gaps in curriculum relevance, assessment accessibility, and certification requirements as key factors affecting TVET efficiency. These studies collectively suggest that while enrollment numbers may appear strong, systemic issues – such as rigid certification standards, inadequate support systems, or misaligned training programs – can lead to significant attrition before completion. Addressing these challenges requires targeted interventions, such as curriculum reforms, enhanced student support, and streamlined assessment processes, to ensure that more enrolled learners achieve certification and enter the workforce with recognized qualifications.

3.6 Comparative Attrition Rates Across the TVET Pipeline

Figure 2 presents the comparative attrition rates across the Technical and Vocational Education and Training (TVET) pipeline, highlighting four key transition points: from enrollment to graduation (0.74%), graduation to assessment (1.26%), assessment to certification (5.93%), and the overall attrition rate of 14%. The trend shows a gradual increase in attrition as learners move along the pipeline, with the sharpest drop-off observed at the final certification stage. The low attrition rate of 0.74% between enrollment and graduation suggests that most students complete their coursework, though challenges remain. According to Edralin and Pastrana (2023), early dropout is often linked to financial difficulties, inadequate academic preparation, and the absence of student support services in Philippine TVET institutions. This is echoed in a Malaysian study by Mazlan et al. (2017), which found that personal hardships, lack of institutional guidance, and mismatched student expectations often drive attrition in technical colleges.

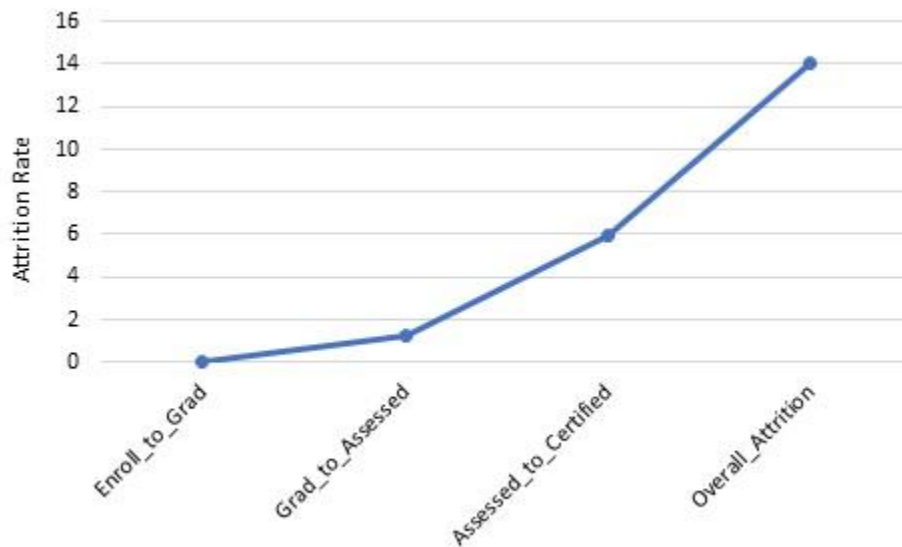


Figure 2. Comparative Attrition Rates Across the TVET Pipeline

The slight increase to 1.26% from graduation to assessment reflects barriers such as a lack of access to testing centers, high assessment fees, or logistical delays. Relajo-Howell (2024) notes that these challenges are particularly prominent in rural areas, where limited infrastructure hinders the transition from school to national competency assessment. The most significant attrition (5.93%) occurs between assessment and certification, indicating that many learners are unable to complete certification despite undergoing evaluation. This stage may reflect strict assessment standards, delays in result processing, or difficulties meeting competency criteria. UNESCO (2023) suggests that rigid national standards and procedural bottlenecks often demotivate students from pursuing certification.

The cumulative 14% attrition across the pipeline highlights systemic inefficiencies. A UNDP 2024 report emphasized that factors such as poor work-based learning opportunities, weak industry engagement, and misaligned curricula contribute to high dropout rates in TVET systems globally. Similarly, Bijl & Lawrence (2018) observed that when learners perceive limited career pathways or a lack of relevance in their training, they are more likely to leave before achieving certification. These findings imply that multi-level reforms are needed, ranging from increasing regional access to assessment centers, improving student support systems, offering financial subsidies, and building stronger industry-academic partnerships. Addressing these issues will help increase certification rates and enhance the overall effectiveness of the TVET system in preparing a job-ready workforce.

4.0 Conclusion

The Philippine TVET pipeline faces notable challenges with learner retention, particularly in the transition from training to certification. The most significant losses occur during the final stages, pointing to underlying issues within the certification and assessment processes, as well as gaps in learner support systems. These challenges are especially pronounced in certain regions, where inadequate infrastructure, limited access to assessment centers, and various logistical and financial barriers contribute to much higher attrition. Such regional disparities reveal that the effectiveness of the TVET system is uneven across the country, and national averages may mask the true extent of the problem in the most affected areas.

The study offers a better understanding of the areas where students are most at risk of dropping out by examining performance step by step. The necessity for TESDA and other stakeholders to put localized, data-driven strategies into action is supported by this detailed knowledge. This ought to include strengthening public-private collaborations, developing rural evaluation and certification facilities, increasing student support services, and tailoring programs to the local job market's needs. Ultimately, success cannot be determined solely by high enrollment. Learners must advance through the whole training pipeline, culminating in certification and

employability, in order for a TVET system to be responsive and equitable. In order to fulfill TVET's role in poverty reduction and national development through meaningful employment participation, these gaps must be closed. The results provide a starting point for changes aimed at improving human capital outcomes and lowering attrition.

5.0 Contributions of Authors

Author 1: conceptualization, proposal writing, data gathering, data analysis, discussion

Author 2: conceptualization, proposal writing, data gathering, data analysis, discussion

Author 3: conceptualization, proposal writing, data gathering, data analysis, discussion

Author 4: conceptualization, proposal writing, data gathering, data analysis, discussion

Author 5: conceptualization, proposal writing, data gathering, data analysis, discussion

6.0 Funding

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7.0 Conflict of Interests

No conflict of interest.

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9.0 References

- Asian Development Bank. (2021). Technical and vocational education and training in the Philippines in the age of Industry 4.0. In www.adb.org (No. 978-92-9262-575-7). <https://doi.org/10.22617/tcs210084>
- Baral, D. P. (2024). Declining enrollment in long-term engineering programs: Stakeholders' perspectives. *Journal of Technical and Vocational Education and Training*, 18(1), 20–37. <https://doi.org/10.3126/tvet.v18i1.62740>
- Van Der Bijl, A., & Lawrence, M. (2018). Retention and attrition among national certificate (vocational) civil and construction students in South African TVET. *Industry and Higher Education*, 33(2), 127–134. <https://doi.org/10.1177/0950422218800649>
- Bongani, J. (2023). Trends in access and success at Gert Sibande technical and vocational education and training (TVET) college. *Journal of Education and Practice*, 14(9), 34–52. <https://doi.org/10.7176/jep/14-19-05>
- Choi, S. (2021). Urban/rural disparities in the wage effect of additional vocational education after formal education: The case of the Philippines. *International Journal of Training Research*, 19(3), 229–241. <https://doi.org/10.1080/14480220.2021.1935296>
- Edralin, D., & Pastrana, R. (2023). Technical and vocational education and training in the Philippines: In retrospect and its future directions. *Bedan Research Journal*, 8(1), 138–172. <https://doi.org/10.58870/berj.v8i1.50>
- Relajo-Howell, D. (2024). Challenges and opportunities in implementing k-12 technical vocational tracks: A comprehensive review. *Universal Library of Innovative Research and Studies*, 01(01), 01–08. <https://doi.org/10.70315/uloap.ulirs.2024.0101001>
- International Labour Organization (ILO). (2024). Skills for prosperity programme in the Philippines. Retrieved from <https://tinyurl.com/y6dh8fn4>
- Ishtiaq, M. (2019). Research design: Qualitative, quantitative and mixed methods approaches (4th ed.). Thousand Oaks, CA: Sage. *English Language Teaching*, 12(5), 40. <https://doi.org/10.5539/elt.v12n5p40>
- Issa, R. R., & Raphael, C. (2025). Trends in programmes and enrolment patterns in technical and vocational education and training in East Africa. *MUST Journal of Research and Development*, 6(2), 1–9. <https://doi.org/10.62277/mjrd2025v6i20001>
- Vandenberg, P., & Laranjo, J. (2021). Vocational training and labor market outcomes in the Philippines. *International Journal of Educational Development*, 87, 102501. <https://doi.org/10.1016/j.ijedudev.2021.102501>
- Mazlan, A., Manaf, Z., Talib, Z., & Bakar, A. R. (2017). Technical vocational education & training (TVET) in Malaysia: Selected works. Ministry of Higher Education. <https://tinyurl.com/3nnrav95>
- Orbata, A. C. (2022). Vocational education and training in the Philippines. In: Symaco, L.P., Hayden, M. (eds) *International Handbook on Education in South East Asia*. Springer International Handbooks of Education. Springer, Singapore. 1-30. https://doi.org/10.1007/978-981-16-8136-3_9-1
- Orong, M. Y., Caroro, R. A., Durias, G. D., Cabrera, J. A., Lonzon, H., & Ricalde, G. T. (2020). A predictive analytics approach in determining the predictors of student attrition in the higher education institutions in the Philippines. 3rd International Conference on Software Engineering and Information Management, 222–225. <https://doi.org/10.1145/3378936.3378956>
- Philippine News Agency (PNA). (2024). Gov't allots P15.2-B for TESDA projects in 2024. Retrieved from <https://www.pna.gov.ph/articles/1208346>
- PIDS. (2024). Issues in Philippine TVET: Responsiveness to industry demand and implementation. Philippine Institute for Development Studies. <https://pidswebs.pids.gov.ph/CDN/document/pidsrp2403.pdf?>
- Ramadhani, R. I., & Crn, C. R. (2025). Trends in programmes and enrolment patterns in technical and vocational education and training in East Africa. *MUST Journal of Research and Development (MJRD)*, 6(2), 99–107. <https://doi.org/10.62277/mjrd2025v6i20001>
- Rodzi, R. M., Basri, N. E. A., & Nopiah, Z. M. (2024). The cause of student dropout from TVET at the Malaysia industrial training institute. *International Journal of Academic Research in Business and Social Sciences*, 14(9). <https://doi.org/10.6007/ijarbs.v14-i9/22740>
- Technical Education and Skills Development Authority (TESDA). (2024). TVET graduation by region (CY 2024). Retrieved from <https://tesda.gov.ph/About/TESDA/53>
- TESDA. (2019). Study on the employment of TVET graduates (SETG) [PDF]. Technical Education and Skills Development Authority. <https://tinyurl.com/3phxzwa4>
- TESDA. (2020). Annual TVET statistics 2020 [PDF]. Technical Education and Skills Development Authority. <https://tinyurl.com/ye25a267>
- TESDA. (2020). Annual TVET statistics 2017–2019 [PDF]. Technical Education and Skills Development Authority. <https://tinyurl.com/ye25a267>
- TESDA. (2022). TVET statistics. Retrieved from <https://www.tesda.gov.ph/About/Tesda/53>
- TESDA. (2023). TVET fact sheet 2019–2023 [PDF]. Technical Education and Skills Development Authority. <https://tinyurl.com/5b4vrsuz>
- TESDA. (2024). 1st quarter TVET statistics. Retrieved from <https://encr.pw/IMJHB>
- TESDA. (2024). TESDA TVET statistics and regional reports. Retrieved from <https://www.tesda.gov.ph/About/Tesda/53>
- TESDA-Caraga. (2024). TESDA-Caraga scholars complete TVET training in 2024. Retrieved from <https://www.pna.gov.ph/index.php/articles/1240097>
- TESDA. (2024). 2nd quarter TVET statistics. Retrieved from <https://l1nq.com/xbGEO>
- TESDA. (2024). 4th quarter TVET statistics. Retrieved from <https://encr.pw/z7mpz>
- TESDA. (2024). TVET statistics and provider data. Retrieved from <https://www.tesda.gov.ph/About/Tesda/53>
- TESDA News. (2024). TESDA cites 2024 accomplishments, vows strengthened Ph tech-voc. Retrieved from <https://www.tesda.gov.ph/Media/NewsDetail/20388>
- UNESCO-UNEVOC. (2019). Country profile: Philippines TVET system. UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. https://unevoc.unesco.org/wtdb/worldtvtdatabase_ph_en.pdf?
- UNESCO. (2023). TVET quality assurance: Addressing assessment and certification challenges in the Asia-Pacific. UNESCO. <https://encr.pw/U6Sct>
- United Nations Development Programme. (2024). TVET report: Learner/student attrition and ecosystem challenges in South African TVET colleges. Retrieved from <https://l1nq.com/WZCPs>
- Wongmonta, S. (2023). Revisiting the wage effects of vocational education and training (VET) over the life cycle: The case of Thailand. *International Journal of Educational Development*, 103, 102886. <https://doi.org/10.1016/j.ijedudev.2023.102886>