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The impact of regulatory gap between PCAR Part 2 Subpart 2.6.2.7 (c) and PCAR Part 3 Subpart 3.4.3 (b) (3) on students graduated in an Approved Training Organization (ATOs)

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Abstract

Completing an approved aircraft maintenance program does not always provide graduates with clear path to licensure. This study examines the reported difficulties in reconciling the 30-month training requirement under Philippine Civil Aviation Regulation (PCAR) Part 2 with the 1,900-hour curriculum requirement under PCAR part 3 for combined Airframe and Powerplant training. A qualitative research design was used to explore the experiences of purposively selected, licensed Aircraft Maintenance Technology graduates working in the aviation industry. Data was gathered through online semi-structured interviews and analyzed through qualitative coding to identify recurring themes. Four themes emerged: financial burdens, curriculum misalignment, overlap between school-based and on-the-job training and regulatory uncertainty affecting licensure preparation. Participants described expenses beyond tuition, differences in access tools and practical instruction, and unclear guidance on training requirements. Their accounts also showed that on-the-job training offered valuable exposure to actual maintenance practices, although some activities repeated skills already covered in school. These findings suggest that difficulties arise not only from the different measures of training duration but also from how requirements are communicated and implemented. The study recommends clearer regulatory guidance, closer coordination between training and maintenance organization, transparent training cost, and standardized competency assessments to support the harmonization of training requirements. These measures could help reduce unnecessary delays and expenses while preserving the competence expected of aircraft maintenance professionals.

Keywords: aircraft maintenance technology, Philippine Civil Aviation Regulations (PCAR), Approved Training Organization (ATO), licensure, competency assessment

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The impact of regulatory gap between PCAR Part 2 Subpart 2.6.2.7 (c) and PCAR Part 3 Subpart 3.4.3 (b) (3) on students graduated in an Approved Training Organization (ATOs)

1. Introduction

There is a high demand of aviation professional across the globe. In the last decades commercial air transport projected a robust growth in air traffic patterns, leading into large amount of aircraft purchases and new players in the industry as an air transport operator. Air traffic delivery plans will match up with the demand of aviation personnel such as pilots, aircraft maintenance professionals and air traffic control personnel in the next twenty years (ICAO, n.d., para. 1). Manpower is a major part of the aviation industry. According to International Civil Aviation Organization (ICAO) estimation, there are 580,926 current maintenance personnel last 2010 and a projected population need of 1,164,969 in 2030 with a training need of 70,331 and a training capacity of 52,260 which leads to a shortage of 18,070, with this annual estimation, ICAO projected a shortage of 360,000 maintenance people. ("ICAO study reveals strong demand for qualified aviation personnel up to 2030," n.d.). Which means that there are not enough training schools and instructors to train all aircraft maintenance personnel that the world needs. If there will be shortages of trained personnel. Airline and airports will not be able to handle more flights and passenger that will hinder the industry from expanding. Worse than just growth, lack of trained staff could lead to unsafe and inefficient air travel operations (ICAO, n.d., para. 2). And in aviation safety is a non-negotiable risk.

Aircraft maintenance in the Philippines is also growing, Dassault Aviation of Kuala Lumpur states that there is an evident demand of aircraft maintenance services in the country because of a strong growth in the jet market industry (Talavera, 2024). In addition, Cebu Pacific a Philippine low-cost airline announces a purchase agreement for up to 152 aircraft order, a landmark agreement between the airline, Airbus and Pratt & Whitney (Cebu Pacific Air, 2024). Both global and local aviation industries have a high and steadily increasing demand for a well-trained maintenance work force. These growing needs underscore the importance of producing competent industry ready professionals who can uphold safety, efficiency and regulatory standards in an ever-evolving aviation landscape.

With the international and local manpower demands in the aviation industry, outlines the educational gap with the required 30 months of educational training in an Approved Training Organization (ATO) for aviation maintenance technician/mechanic applying for an airframe and powerplant rating mechanic license under PCAR Part 2 Subpart 2.6.2.7 (c) (CAAP, 2025a, p. 2.6-3) and the required hours of training which is 1900 hours for both airframe and powerplant subjects that needs to be covered in order to be qualified for a diploma certificate which a prior requirement for the said aircraft mechanic license rating specified in PCAR Part 3 Subpart 4.4.2 (b) (3) (CAAP, 2025b, p. 3.4-1). This paper will address the said regulatory gap and examine how it impacts both the ATOs in aligning their programs with the licensing requirements and the students in meeting their eligibility for rating. It will also explore the operational, academic and regulatory implication of this gap, including potential delays in licensure, inconsistencies in training delivery and challenges in ensuring compliance without compromising educational quality or the readiness of graduates to enter the aviation maintenance work force.

2. Literature Review

PCAR Part 2 Subpart 2.6.2.7 (c) and PCAR Part 3 Subpart 3.4.3 (b) (3) - PCAR are standard documents in the aviation industry in the country. As for schools offering aviation courses relatively in aircraft maintenance these documents are the checklist that needed to be complied to become an Approved Training Organization (ATO). PCAR Part 2 Subpart 2.6.2.7 states the experience requirement for an aspiring aviation professional to have a rating. The policy states three main requirements. An applicant seeking an Aircraft Maintenance Technician (AMT)

license and its associated ratings may become eligible either through relevant practical experience or by completing training at an ATO. Applicants for an AMT license and associated ratings who qualify solely through practical experience must submit documentary evidence, deemed acceptable by the Authority, demonstrating hands-on experience in the inspection, servicing, and maintenance of aircraft or their components, with the following minimum durations: 30 months for an Airframe rating, 30 months for a Powerplant rating, and 60 months for combined Airframe and Powerplant ratings. Applicants for an AMT license who qualify through training at an Approved Training Organization (ATO) must present documentary evidence, acceptable to the Authority, confirming completion of the required training durations: 24 months for an Airframe rating, 24 months for a Powerplant rating, and 30 months for combined Airframe and Powerplant ratings.

PCAR Part 3 subpart 3.4.3 outlines the general curriculum requirements for an ATO to offer AMT course. The subpart states, each ATO is required to implement a curriculum approved by the Authority, specifically structured to equip students with the necessary competencies to perform the responsibilities of an Aircraft Maintenance Technician (AMT) for the applicable rating or ratings. The curriculum must include a minimum number of instructional hours, with each instructional unit lasting no less than 50 minutes. The required durations are as follows: 1,150 hours for an Airframe program (400 hours of general subjects and 750 hours of airframe-specific training); 1,150 hours for a Powerplant program (400 hours of general subjects and 750 hours of powerplant-specific training); 1,900 hours for a combined Airframe and Powerplant program (400 hours of general subjects, 750 hours each for airframe and powerplant); and 1,150 hours for an Avionics program (400 hours of general subjects and 750 hours of avionics-specific training).

The curriculum must encompass the subjects, topics, required minimum hours, and teaching levels outlined in IS: 3.4.3, corresponding to the AMT Airframe, Powerplant, and/or Avionics ratings, as presented in table 1. Additionally, the highest required teaching level for each subject is also indicated in the table. Further details for each teaching levels are as follows: : Level 1 focuses on theoretical understanding without hands-on practice, delivered through lectures, demonstrations, and discussions; Level 2 integrates basic practical application and skill development through limited hands-on training alongside traditional instruction; while Level 3 emphasizes advanced practical competence, simulating return-to-service conditions through intensive hands-on application, supported by lectures and demonstrations (CAAP, 2025b, IS-19).

Table 1

AMT Curriculum Requirement (PCAR Part 3, IS 3.4.3)

Section A – General Curriculum Subjects (400 hours total)

Subject	Hours Required (hours)	Highest Teaching Level
Basic Electricity	30	3
Aircraft Drawing	40	3
Weight and Balance	30	3
Fluid Lines and Fittings	15	3
Material and Processes	50	3
Ground Operation and Servicing	30	2
Cleaning and Corrosion Control	30	3
Mathematics	75	3
Maintenance Forms and Records	40	3
Basic Physics	40	2
Maintenance Publications	50	3
Mechanic Privileges and Limitations	20	3

Section B – Airframe Curriculum Subjects (750 hours total)

Airframe Structures

Subject	Hours Required (hours)	Highest Teaching Level
Wood Structure	15	1
Aircraft Covering	15	1
Aircraft Finishes	30	2
Sheet Metal & Nonmetallic Structures	70	2
Assembly and Rigging	50	3
Airframe Inspection	40	3

Airframe System and Components

Subject	Hours Required (hours)	Highest Teaching Level
Aircraft Landing Gear Systems	30	3
Hydraulic & Pneumatic Systems	20	3
Cabin Atmosphere Control Systems	60	2
Aircraft Instrument Systems	20	2
Communication & Navigation Systems	30	2
Aircraft Fuel Systems	70	3
Aircraft Electrical Systems	50	3
Ice and Rain Control Systema	40	2
Fire Protection System	70	3

Section C – Powerplant Curriculum Subjects (750 hours total)

Powerplant Theory and Maintenance

Subject	Hours Required (hours)	Highest Teaching Level
Reciprocating Engines	80	3
Turbine Engines	80	3
Engine Inspection	80	3

Powerplant Systems and Components

Subject	Hours Required (hours)	Highest Teaching Level
Engine Instrument System	50	3
Engine Fire Protection Systems	40	3
Engine Electrical Systems	30	3
Lubrication System	30	3
Ignition & Starting Systems	50	3
Fuel Metering Systems	60	3
Engine Fuel Systems	30	3
Induction & Airflow Systems	40	3
Engine Cooling Systems	30	3
Engine Exhaust & Reverser	40	3
Propellers	60	3
Unducted Fans	40	1
Auxiliary Power Units (APUs)	40	1

Financial Impact - The paper focuses on three key areas affected by the regulatory gap analysis: the financial impact on students, curriculum design, and the practical experience of students. AMT course demands high technical skills, socio-economic factors affect student's educational experience. Financial support has an impact to student's competencies development (Ramoso & Ortega-Dela Cruz, 2025). The average annual tuition fee of a bachelor's degree in AMT ranges from 70,000 to 120,000 PHP at public universities and private institution can charge higher fees that could exceeds to 150,000 PHP annually (Laminar Aviation PH, 2023). Additionally, Orient Aviation addresses a frequently asked question on its website regarding the typical cost of studying Aircraft Maintenance Technology in the Philippines. According to the institution, the cost ranges from PHP 100,000 to 300,000 per year for a diploma or certificate program, which is a two-year degree course (Orient Aviation Corporation, 2025).

On-the-job training enhances students' experience by immersing them in the aviation industry. The Aviation Maintenance Internship Program (AMIP) between AAG Philippines and PhilSCA highlights a school-industry partnership that serves as a structured training opportunity rather than a revenue-generating initiative, with no explicit internship fees mentioned and potential costs likely integrated into the institution's tuition or covered by students' living expenses (AAG Philippines, 2024). Job and internship postings from platforms such as JobStreet and Prosple Philippines consistently highlight that aircraft maintenance on-the-job training (OJT) and entry-level opportunities often require no prior experience and instead offer benefits such as free meals, shuttle services, insurance, and training, reflecting an industry standard where companies invest in developing their trainees rather than charging them (JobStreet, n.d.; Prosple Philippines, n.d.). For example, Cebu Pacific Air's listings for positions like Aircraft Maintenance Planner and Maintenance Technical Engineer even indicate salary ranges for fresh graduates, reinforcing the norm that entry into the aviation maintenance workforce is typically compensated rather than fee-based. In contrary, Anecdotal evidence from online student communities such as Reddit (e.g., r/AviationPH, r/Philippines, r/studentsph) suggests that while direct fees for on-the-job training (OJT) in Aircraft Maintenance Technology are generally minimal or nonexistent, students may still incur indirect costs such as

expenses for materials, transportation, and personal needs during the internship period.

Discussions in threads like *"How much OJT sa PHILSCA?"* (May 2025) and *"Students of r/ph, how high do OJT fees go?"* consistently note that high OJT fees are unlikely, with some companies even offering allowances, thereby framing most OJT-related costs as logistical rather than institutional (Reddit, 2025). Furthermore, recent cost-of-living data from Pacific Prime (2025) provides a quantitative basis for understanding the indirect financial burden of on-the-job training (OJT) for Aircraft Maintenance Technology students. The report indicates that students living independently during OJT may face monthly expenses including rent (PHP 5,000–10,000 for shared accommodations), groceries (PHP 8,000–12,000), and transportation (PHP 500–1,500). When no company-provided allowance is available, these become the de facto cost of OJT, particularly if the internship spans several months. If OJT durations are extended due to regulatory or logistical challenges, the financial strain on students increases accordingly (Pacific Prime, 2025).

Curriculum Design Challenges - PCAR is the core training and licensing standard in the country's aviation sector and such requirements stipulated under PCAR Part 2, Subpart 2.6.2.7 (c) which mandates "at least 30 months of educational training in an ATO" for airframe and powerplant rating and PCAR Part 3, Subpart 3.4.3 (a) and (b), which specifies 1,900 instructional hours divided into general (400 hours), airframe (750 hours), and powerplant (750 hours) lies a key challenge for ATO in reconciling the two provisions. This dual requirement creates contradiction to the ATO's academic practice and curriculum. ATOs are expected to complete a fixed number of hours for all general, airframe and powerplant subjects that can be completed in a span of 20 months and exceeds the minimum hour requirement for each course while adhering to a calendar-bound period requirement of 30 months. Designing a curriculum that meets both requirements is difficult in balancing theoretical and hands-on components. This dilemma underscores a deeper issue within the regulatory environment whether policy is structures around seat time (months) or competency-based outcomes (hours).

This regulatory contradiction directly affects curriculum design in such a way the ATO's are adding extra 1,200 hours which is translated as additional 6 months to complete the 30 months requirements as students OJT hours. Ramoso and Ortega-Dela Cruz (2025), in a study on Aircraft Maintenance Technology (AMT) student in the Philippine, identified curriculum structure and design as significant contributors to students' readiness. The regulatory constrains impacted the ability of institutions to meet manpower industry demand. The structural contradiction within PCARs may compel ATOs to prioritize regulatory "checklists" over authentic, outcome-based education. A case study by LMS Portals (2025), although focused on eLearning, presents a relevant concept: the emergence of "two parallel systems"—one designed to promote effective learning, and another to meet rigid compliance metrics. This observation parallels the struggle of Philippine ATOs that may be forced to maintain a facade of compliance at the expense of optimizing the learning process.

International standards offer contrasting approaches. A guided curriculum content that suggested training hours, implicitly an hour based-focus is provided by ICAO Doc 7192, Part D-1 (International Civil Aviation Organization, 2003). EASA Part-66 (European Union Aviation Safety Agency, n.d.), in turn, is highly perspective with detailed "basic knowledge" modules and practical experience hours, which differentiates basic training from specialized OJT for type ratings. Furthermore, the primary focus of FAA's Part 147 is on minimum hour requirement for its AMT schools (typically around 1,900 hours for Airframe and Powerplant) (Federal Aviation Administration, 2015, p. 7). These international guidelines, while not identical, generally emphasize hour-based or competency-based metrics that an ATO can follow, that potentially offers a clear pathway for curriculum design than the dual PCAR Part 2 and Part 3 requirement.

Practical Training Experience - Aviation maintenance is a profession that requires highly skilled personnel. As announced by Cebu Pacific a purchase of 152 wide body aircraft indicates a significant increase in wide-body fleet in the country, leading to a high demand for skilled personnel in maintain these aircraft. The aviation maintenance education in the country faces challenges in aligning regulatory requirements and educational practices with industry needs, leading to potential unproductive overlap between hands-on activities between the

ATO and the OJT provided by AMO. PCAR Part 3 outlines the curriculum requirement with the required teaching level as basis for practical experience training for ATOs, while PCAR Part 2 reiterate "practical experience" for licensing, often fulfilled through OJT. This creates a potential scenario where foundational practical skills taught in ATO laboratory might replicate task later performed during OJT, leading to an unnecessary extension of the educational track.

Studies on student readiness in the Philippines, such as Ramoso and Ortega-Dela Cruz (2025), emphasize the critical role of "integrating hands-on experience with academic programs" to ensure comprehensive skill development. However, their findings also point to a 'gap between the skills acquired by students and the expectations of the aviation industry," suggesting that current practical training might not be optimally aligned. An evaluation of OJT practices reinforces the potential overlap, identifying issues like insufficiency on specialized training and inconsistencies in enforcing safety standards (Toring et al., 2025). While not explicitly detailing overlap, these findings imply a lack of value-adding experience during OJT beyond what might be provided in an ATO. Bridging classroom knowledge with the industry relevant skills through personalize training strategies by creating real-world application, rather than mere repetition of basic practicals is recommended in the study conducted at Indian Aerospace University (Toring et al., 2025).

Although these studies provide useful context, the literature reviewed for this manuscript offers limited graduate-focused evidence about how licensed AMT graduates interpret and experience the interaction between the PCAR training-duration requirement and the ATO curriculum-hour requirement. This study addresses that focused gap by examining graduates' accounts of financial costs, curriculum delivery, OJT experiences, and regulatory communication.

Objectives - To address the regulatory gap by exploring its impact on three main areas.

- The financial impact it imposes to students, who may be required to spend additional time and resources to comply with both time or months-based and hour-based requirements.
- The curriculum design challenges for ATOs, which must align the contradiction between a duration base model of 30 months and an hour-based model of 1,900 hours to produce courses that are both regulatory compliance and educationally sound.
- The practical training experience of students which may have practical hands-on overlap in the ATO to the on-the-job training offered by an Approved Maintenance Organization (AMO) that leads to unnecessary extension of educational track, affecting not only the quality of practical learning but also student's timeline toward certification.

Significance of the study - The findings of this study are significant to aviation education and training stakeholders as they provide practical insights into strengthening the alignment between academic instruction, competency-based training, on-the-job training (OJT), and regulatory requirements for aircraft maintenance personnel. The study highlights the importance of translating regulatory standards into meaningful educational practices that promote progressive skills development, transparent training pathways, and effective preparation for professional licensing.

For practitioners and instructors, the findings emphasize the importance of competency maps, task cards, structured feedback, and documented progression from foundational to more complex maintenance activities. These tools can guide instructors in ensuring that practical activities contribute to measurable learning outcomes and that repeated tasks reinforce proficiency rather than merely duplicate previous experiences. Collaboration between Approved Training Organizations (ATOs) and Approved Maintenance Organizations (AMOs) can further strengthen the relevance of OJT through clearly defined task objectives, supervision levels, and assessment evidence.

For students, the study underscores the importance of accessible and transparent training and licensing

pathways. Providing a clear roadmap at the beginning of the program and reinforcing it through academic advising and pre-OJT orientations can help students understand the relationship between instructional hours, required training duration, and licensing qualifications. Maintaining organized records of completed instructional hours, practical projects, OJT activities, and competency assessments can also prepare students for regulatory compliance while enabling them to make informed academic and financial decisions.

For educational institutions and ATO administrators, the findings highlight the need for continuous curriculum evaluation, adequate instructional resources, qualified instructors, transparent training costs, and institutional partnerships with AMOs. These considerations are essential in ensuring that school-based practical instruction and industry-based training complement one another and contribute to progressive competency development. Such implications are consistent with education research emphasizing curriculum alignment, resource availability, teacher preparation, and appropriate facilities as essential conditions for effective skills-based learning (Manlangit, 2025; Ramos, 2025).

For regulators and policy implementers, the study provides insights into the importance of clarifying the implementation of training-duration and instructional-hour requirements. Student-oriented regulatory guidelines may help explain how these provisions operate together, the documentary evidence required from applicants, and the appropriate procedures for monitoring and recording training progress. However, the study does not propose that the 1,900-hour instructional requirement automatically substitutes for the 30-month training duration. Any recognition of equivalency or modification of existing regulatory provisions must remain subject to formal evaluation and approval by the competent regulatory authority.

Ultimately, the study advances the practical educational implication that aviation maintenance education must move beyond compliance with prescribed training hours toward an integrated, competency-driven learning system. By aligning curriculum delivery, practical instruction, industry-based experience, student guidance, and regulatory expectations, educational institutions and training organizations can provide more purposeful, progressive, and industry-relevant learning experiences that prepare future aircraft maintenance professionals for both licensure and the actual demands of aviation practice.

Scope and Delimitation of the Study - This study focuses on examining the regulatory gap between PCAR Part 2, Subpart 2.6.2.7 (c), which prescribes a minimum of 30 months of educational training for applicants seeking combined Airframe and Powerplant ratings, and PCAR Part 3, Subpart 3.4.3, which requires 1,900 instructional hours for the completion of an Approved Training Organization (ATO) program. Specifically, it explores the implications of these requirements on four areas: students' financial burden, curriculum design and delivery among ATOs, practical training experiences, particularly the potential overlap between school-based instruction and on-the-job training (OJT), and graduates' understanding of regulatory and licensing requirements.

This study employs a qualitative research design using semi-structured interviews with purposively selected licensed Aircraft Maintenance Technology (AMT) graduates currently employed in the aviation industry. It focuses on their experiences regarding training costs, curriculum implementation, practical training, and licensing processes in relation to PCAR Part 2 and Part 3. The study is limited to participants' self-reported experiences. It excludes interviews with CAAP regulators and institutional personnel, independent audits of training records and curricula, and direct assessments of technical competencies. Financial accounts will be illustrative rather than statistically generalizable, while international standards serve only as supporting references. The regulatory analysis is confined to the January 2026 edition of PCAR Part 2 and July 2025 edition of PCAR Part 3

What distinguishes this study is its graduate-centered examination of the relationship between the two regulatory requirements, moving beyond the interpretation of regulatory provisions to investigate how their implementation affects actual training experiences and progression toward professional licensing. While previous discussions emphasize curriculum compliance and practical training, this study provides qualitative insights into the interconnected financial, academic, and practical consequences experienced by licensed AMT graduates. In doing so, it contributes a practical educational perspective on the need to align instructional hours, training duration,

and competency development, providing a basis for improving coordination between ATOs and AMOs and informing future regulatory clarification.

3. Methods

Research Design - This study examines the regulatory misalignment between the 30-month educational training requirement under PCAR Part 2 Subpart 2.6.2.7 (c) and the 1,900-hour training requirement for diploma qualification under PCAR Part 3 Subpart 4.4.2 (b)(3) through qualitative research design. This study employs data collection via structured interviews with Aircraft Maintenance Technology (AMT) graduates, key insights were extracted, coded, and categorized to identify emerging themes regarding training experiences, financial burdens, and licensing preparation. The analysis highlights how these overlapping requirements both time-based (30 months) and hour-based (1,900 hours) result in structural inefficiencies that impact students, training institutions, and licensing outcomes.

Participants - This study employed purposive sampling to identify participants who could provide meaningful insights based on their knowledge, professional experience, and relevance to the research objectives. The participants were selected from a pool of Aircraft Maintenance Technology (AMT) graduates who hold licenses and are currently participating as aviation professionals in the field. Specific criteria were established and summarize in Table 2 to ensure the relevance of participants and the credibility of the data collected.

Table 2
Specific Criteria for Interview Participants

Category	Inclusion	Exclusion
Educational Background	Graduate of Aircraft Maintenance Technology (AMT) program	Aviation professionals without AMT educational background
Professional Qualification	Holder of a valid AMT License (e.g., CAAP, EASA, FAA or equivalent)	Individual without a valid AMT license or other aviation related licenses (e.g., Aeronautical Engineers, Avionics)
Professional Practice	Currently employed and participating as an aviation professional.	Licensed individual not actively engaged in aviation practice
Work Experience	Minimum of 1-year professional experience in the aviation industry	Less than 6-months of professional experience in the aviation industry

Research Instruments - The research employed a semi-structured interview guide developed to gather the perspective of the participants. The guide consisted of open-ended question designed to capture their experiences and professional insights, particularly in relation to the research objectives. This format allowed for in-depth discussion while providing flexibility to explore emerging themes during the interviews. The instrument was reviewed for content validity by research experts and instructors from an approved training organization (ATO) specializing in aircraft maintenance technology course.

Data Collection - Data collection was conducted through individual semi-structured interviews using an online meeting platform. Before the start of each interview, informed consent was secured from the participants, who were also assured of their privacy and the protection of their personal information. Each session ran for at least 30 minutes and, with the participants' permission, was recorded through the platform. The interviews focused on drawing out insights directly connected to the research objectives. These were carried out in both Filipino and English, with responses later translated into English for analysis. To ensure accuracy, the translations were reviewed by bilingual speakers familiar with aviation terminologies. All interviews were transcribed verbatim and carefully checked for correctness. The collected data were then stored securely and later examined through qualitative coding to identify key patterns and themes.

Data Analysis - The data gathered from the interviews were analyzed using qualitative coding approach. After the transcript were carefully reviewed for accuracy, the responses were read multiple times to gain familiarity with the content. Significant statements and recurring ideas were highlighted and grouped into categories to identify patterns and emerging themes relevant to the research objectives. This process allows the researcher to organize the participants' insight in a systematic manner, ensuring that the findings accurately reflected their professional

experiences and perspectives as licensed AMT graduates.

Ethical Consideration - Ethical considerations were carefully observed throughout the research process to ensure the protection and welfare of all participants. Prior to the conduct of the semi-structured interviews, participants were provided with a Research Information Sheet explaining the objectives and purpose of the study, the nature of their participation, and how the information they shared would be handled. Their participation was voluntary, and written informed consent was obtained before proceeding with the interviews. They were also assured that their identities and personal information would remain confidential and that they could discontinue their participation at any point without facing any adverse consequences. To further protect their identities, pseudonyms were assigned during the presentation of the research findings, and any information that could reveal their identities was excluded from the final report. The interview transcripts and Zoom recordings were kept in a private cloud storage facility with restricted access to safeguard the confidentiality and security of the collected data. These materials were intended solely for academic and research purposes. Before each interview, participants were given sufficient time to ask questions and clarify any concerns regarding their involvement in the study. Throughout the data collection process, the researcher ensured that all participants were treated fairly and respectfully. Overall, these ethical procedures were implemented to maintain the credibility and integrity of the study while ensuring that the rights, privacy, and voluntary participation of everyone involved were consistently respected

4. Results

4.1 Theme 1: Financial Impact of Dual Requirements on Students

One of the most prominent effects of the policy gap is its financial burden on students. Participants described the high cost of completing both the ATO-based program and the required OJT, with fees ranging from ₱25,000 to ₱35,000 for placements in aviation companies. In addition, there were hidden costs in training materials, workshop consumables, and living expenses that were not fully disclosed during enrollment.

Interviewee 1 expressed:

> *"Mabigat talaga yung financial kasi mataas yung tuition sa school at hiwalay pa doon yung mga materials na kailangan gamitin during laboratories… may subject kami na wood structures, binabayaran pa namin yung materials… pati welding rods."*

Interviewee 2 added:

> *"Wala pong ganoong explanation sa school naming about sa requirement na 'yon… ang OJT fee ko po around ₱30,000 for 520 hours. Wala pa po 'yung dorm at daily expenses ko."*

Interviewee 3 also shared:

> *"₱35,000 per sem tuition, tapos may bayad pa sa mga exam, at sa materials ng training"*

In some cases, students secured unpaid OJT placements under administrative or scholar-like arrangements. While such arrangements eased financial pressure, they often limited student agency over training content or department assignments. These accounts demonstrate that financial challenges are not isolated to tuition but are compounded by hidden and recurring costs embedded within both school-based training and industry-based OJT. Without financial aid mechanism or standardized OJT fee structures, aspiring AMTs from low-income background are disproportionately disadvantaged, potentially limiting access to the profession.

4.2 Theme 2: Curriculum Design Misalignment in ATOs

The dual-track policy creates major curriculum design challenges for ATOs. On one hand, they are required

to deliver a 1,900-hour program that satisfies diploma issuance for licensure under PCAR Part 3. On the other, they must ensure that the program or OJT accounts for 30 months of practical experience per PCAR Part 2. This has resulted in inconsistent program delivery and unclear pathways for students.

Interviewee 1 reflected:

> *"The ATO curriculum prepared me, but the problem is the delivery of each training… mayroong well-equipped ATO, pero hindi lahat pare-pareho."*

Interviewee 2 stated:

> *"Very limited yung mga gamit at tools na pwede naming gamitin. Iba talaga 'yung by-the-book ng school kaysa sa ginagawa sa MRO."*

Interviewee 3 added:

> *"If I will give a rate of 90 percent, okay naman yung hands-on training sa ATO namin… pero mahal nga lang."*

These responses reveal the structural difficulty ATOs face in meeting dual regulatory expectations: providing a 1,900-hour curriculum while indirectly aligning with the 30 month experience-based route. The result is inconsistent training standards, where the quality of education a student receives largely depends on the ATO's resources and partnerships.

4.3 Theme 3: Overlap and Redundancy in Practical Training

Another key issue is the redundancy between hands-on training at the ATO and the on-the-job training (OJT) provided by the Approved Maintenance Organization (AMO). Students frequently reported that the activities during OJT repeated what was already taught in the ATO—yet were still required to spend months more in the field to fulfill the 30-month requirement.

Interviewee 1 shared:

> *"OJT gave me a deeper experience. Hindi ko masasabi na naulit siya—siguro mas na-broaden lang. Pero if maayos yung ATO training, pwede nang hindi mag-OJT."*

Interviewee 2 explained:

> *"Naulit po ang mga tinuro sa amin sa school sa OJT… pero hindi na po by-the-book—parang ipapakita na nila sa'yo kung paano talaga ginagawa."*

Interviewee 3 noted:

> *"May mga naulit po at bagong learning… pero sana kung sapat ang ATO, hindi na kailangang paulit-ulit."*

The findings emphasize the need to harmonize training content and ensure that OJT experiences are value-added rather than duplicative. The lack of centralized monitoring of student progress and unclear benchmarks for licensure readiness contribute to inefficiencies and confusion among trainees. The lack of integration between ATO and AMO training created inefficiencies in learning trajectory. While OJT remains essential for contextualizing theory and exposing trainees to industry practices, the absence of a centralized monitoring system or competency-based benchmarks means that students often undergo repetitive learning cycles. This extends training duration without proportional improvement in technical competence.

4.4 Theme 4: Regulatory Ambiguity Causes Confusion and Delays

This theme highlights the confusion caused by the dual-track licensing pathways—either through educational attainment via ATOs or through experiential accumulation over 30 months. The ambiguity of which path applies to whom, and the absence of clear guidance from regulatory bodies, resulted in misunderstanding and misinformed decisions during the participants' training journeys.

Interviewee 1 commented:

> *"Yung setup na ganoon masyadong confusing… wala namang clear guidance at the start. Diyan na nag-start yung delays."*

Interviewee 2 added:

> *"Akala ko after makuha ang lisensya ay ready na sa trabaho… pero hindi pala. Parang nasayangan ako sa oras kasi nag-license muna ako bago maghanap ng trabaho."*

Interviewee 3 stressed:

> *"Nag-cause po ng delay sa akin yung 1900 hours. Pwede ka na sanang mag-licensure pero kailangan mo pang mag-stay para kumpletuhin 'yung 30 months."*

The responses suggest that regulatory communication from the Civil Aviation Authority of the Philippines (CAAP) needs to be clearer and more accessible to students. There is a need to streamline licensure pathways and make them understandable even for those without institutional support or prior industry knowledge. The participants support the existence of a regulatory gap that has significant financial, operational, and academic implications. The contradictions between PCAR Part 2 Subpart 2.6.2.7 (c) and PCAR Part 3 Subpart 4.4.2 (b)(3) result in delays in licensure, inconsistent training quality, and unnecessary extensions of the educational track. These findings reinforce the need for a harmonized policy framework that prioritizes both regulatory compliance and the educational welfare of AMT students.

5. Discussion and Conclusion

This study highlights the challenges faced by Aircraft Maintenance Technology (AMT) students in the Philippines under the current dual-track licensure framework. While the system was designed to ensure competence and safety, its fragmented implementation has produced financial burden, curricular misalignment, training redundancies, and regulatory confusion. Tuition fees, OJT payments, and additional laboratory or living expenses placed significant strain on students. In contrast, international model such as FAA Part 147 and EASA Part 66 integrates practical training within accredited institution, minimizing hidden cost and preventing duplication. At the time, curriculum delivery varied widely among Approved Training Organizations (ATOs), with some offering meaningful hands-on training and others relying heavily on book-based approaches due to limited resources. This inconsistency reflects the tension between meeting the 1–900-hour training requirement and loosely aligning with the 30-month experiential pathway, creating uneven preparation across institutions.

Beyond financial and curricular challenges, the study found that redundancy between school-based training and OJT diminished efficiency, as students repeatedly encountered basic task like toll handling and safety wiring before advancing to more complex skills such as refueling and cable tensioning. This extended training duration without proportionate gains in competency, underscoring the need for a competency-based system, as recommended by ICAO, where licensure is tied to demonstrated mastery rather than cumulative hours. Adding to this burden is regulatory ambiguity, as many students expressed confusion over whether the 1,900-hour requirement or the 30-month pathway applied to them, often relying on the informal advice instead of clear CAAP guidelines. Unlike international regulations that provide transparent, student-friendly roadmaps, the PCAR regulatory framework lack of clarity undermines its efficiency, leading to delays and inequities in licensure

attainment.

Conclusion - The study reveals that the current regulatory framework presents significant gaps that hinder the efficient and equitable preparation of aviation maintenance professionals. Through the experiences of AMT graduates, it becomes clear that training quality, financial sustainability, and program alignment are deeply affected by the mismatch between the 1,900-hour and 30-month requirements. Addressing these issues through coordinated educational policy interventions is essential in producing a competent and industry-ready aviation workforce.

Recommendation - To address the regulatory gap between CAAP's 30-month training requirement and the 1,900-hour diploma-based qualification, this study recommends the harmonization of these two tracks. The 1,900-hour pathway may be recognized as equivalent to the 30-month experience requirement, provided that competencies are validated through standardized assessments. National curriculum guidelines should also be developed to align the training programs of ATOs and AMOs, minimizing redundancy between school-based training and on-the-job training. A centralized digital tracking system is likewise essential to monitor student progress, ensure accountability, and streamline the licensure process. Clear and accessible communication from CAAP is needed to help students and institutions understand licensure pathways, requirements, and timelines. Lastly, financial transparency and support mechanisms should be established to regulate OJT fees and reduce the economic burden on students through industry partnerships and possible subsidies. These measures aim to create a more coherent, accessible, and efficient licensure pathway for future aviation maintenance professionals.

In addition, Future researchers may conduct a broader investigation involving a larger and more diverse group of Aircraft Maintenance Technology (AMT) graduates, Approved Training Organization (ATO) administrators, instructors, Approved Maintenance Organization (AMO) representatives, and CAAP regulatory personnel to obtain a more comprehensive understanding of the implications of the existing regulatory requirements. Quantitative or mixed-method research may also be employed to determine the extent of the financial burden, curriculum misalignment, and duplication of practical training associated with the 30-month and 1,900-hour requirements. Further studies may explore the development and validation of a competency-based training framework that integrates ATO instruction and AMO-based on-the-job training (OJT), ensuring that each training activity contributes to measurable skill development rather than repetitive task completion. Additionally, future research may examine the feasibility of a centralized digital training record system and standardized competency assessment tools to monitor student progression and document practical experience. A comparative analysis of international aircraft maintenance training and licensing frameworks, particularly those implemented under FAA Part 147 and EASA Part-66, may also provide insights into alternative approaches to training duration, instructional hours, and competency validation. Ultimately, future investigations should aim to generate evidence-based recommendations that can support CAAP in reviewing and clarifying existing regulatory provisions while ensuring that any proposed changes maintain aviation safety, training quality, and professional competency.

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