

MEMBER-INTERNATIONAL CIVIL AVIATION ORGANIZATION TRAINING PACKAGES DEVELOPMENT: POPULATION ANALYSIS

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Abstract: This study was conducted to analysis information about the prospective training participants' current competencies, social and linguistic environments, and preferred learning styles, as part of a population analysis for the development of the Member-International Civil Aviation Organization Training Packages (M-ITP). A descriptive research method was employed, with data collected through a questionnaire distributed via Google Forms. A total of 51 individuals responded to the questionnaire, which was sent to 25 aviation education and training institutions. The findings of this study were as follows: First, prospective training participants were of productive age and possessed an adequate educational background to participate in M-ITP training programs. Second, these participants had not participated in training related to TPM development and faced challenges in finding relevant information on TPM development. Furthermore, the participants expressed interest in attending this training. Third, the ideal timing for post-training evaluation was 3 to 6 months after completion. Fourth, the preferred duration for this M-ITP was between 4 to 5 days. Fifth, while some participants engaged in self-study through technical literature, they encountered significant challenges.

Keywords: population analysis, training need analysis, training packages development

Introduction

Training has been promoted as a crucial mechanism to facilitate continuous improvement (Assen, 2021). Additionally, training is a systematic way to enhance employee performance and provides a link between job requirements and the current job specifications of employees (EL Hajjar & Alkhanaizi, 2018). Training can also assist organizations and employees in achieving various goals, such as improving morale, job security, employee engagement, and the overall competencies needed to perform specific tasks (Joel Rodriguez & Kelley Walters, 2017). Continuous employee training and development are essential if an organization is to thrive in a highly competitive environment (Urbancová et al., 2021). Training strategies in organizations play a crucial role in enhancing productivity, revenue, and profitability (Rathore, 2023).

The rapid advancements in aviation technology are opening new avenues for enhancing training methodologies and optimizing performance outcomes. Innovative approaches to aviation training hold the potential to significantly improve both the quality and effectiveness of instruction, leading to better-prepared professionals, higher safety standards, and greater operational efficiency across the industry (Dinçer, 2023). The effectiveness of training is closely linked to task performance (Carlisle et al., 2019). Five key factors such as training content, environment, facilities and materials, schedule, and delivery style, positively influence training effectiveness. These factors can serve as a solid foundation for training managers when developing their programs (EL Hajjar & Alkhanaizi, 2018).

Standardized training significantly enhances both theoretical knowledge and practical skills, resulting in an ideal training outcome (Cao & Lu, 2022). Furthermore, standardized training can improve learning outcomes by fostering a positive learning environment, enhancing teacher management, establishing efficient training models, and emphasizing humanistic quality education (Yin et al., 2023). Standardized training is crucial, as it has been shown to effectively ensure consistent levels of efficiency, regardless of the trainer (Mbabazi et al., 2021). Learning materials play an indispensable role, acting both as essential resources for learners and as instructional guides (Ritonga et al., 2022). The use of suitable educational media is key to enhancing student learning outcomes (Wulandari et al., 2023). Furthermore, training materials and training methods together positively and significantly impact the effectiveness of training classes (Ambarita et al., 2022).

The International Civil Aviation Organization (ICAO) is a United Nations body that assists 193 countries in collaborating and sharing airspace for mutual benefit. ICAO especially ICAO Global Aviation Training (GAT) also develops training packages using competency-based training methodology, with development guidelines outlined in ICAO Document 9941. The development of these training packages involves three stages: Stage 1: Analysis, Stage 2: Design and Production, and Stage 3: Evaluation. Stage 1 consists of Step 1: Preliminary Study, Step 2: Job Analysis, and Step 3: Population Analysis. Stage 2 includes Step 4: Curriculum Design, Step 5: Module Design, and Step 6: Production and Developmental Testing. Stage 3 involves Step 7: Validation and Revision (ICAO, 2016). ICAO's standardized training packages are equipped with Level 1, 2, and 3 evaluations based on the Kirkpatrick model (Oka et al., 2023).

It is essential to create training programs that focus on developing the necessary competencies. One approach that can be utilized at the beginning of the training process to identify the tasks and competencies needed for a specific job or task is Training Needs Analysis (TNA), which is considered a crucial step in the development of any training program (Merriman et al., 2023). A training needs analysis examines all aspects of an operational domain to accurately identify the existing skills, knowledge, and attitudes of the personnel involved, allowing for the development of targeted and appropriate training programs (Bansal & Prakash Tripathi, 2017). The process of identifying needs assists trainers and training requesters in determining specific training requirements or addressing performance gaps. This identification can be conducted formally, through surveys and interviews, or informally, by posing a few questions to those involved (Darmawan et al., 2021). Furthermore, training design, training needs assessment, training delivery style, and training evaluation all have a significant positive impact on employees' performance (Yimam, 2022).

One aspect of training needs analysis is identifying the specific types of training that prospective participants require. By ICAO, this analysis is called population analysis. The purpose of population analysis is to gather information about the target population of prospective trainees. Course developers aim to determine the level of knowledge and skills that future trainees already possess, along with their educational backgrounds, preferred learning styles, and social and linguistic environments. These factors are essential to consider, as they can significantly influence the design of modules within the standardized training package (ICAO, 2016). This aligns with previous research, which indicates that an ideal teacher training program should be tailored to the needs of the participants. For effective training methods, most participants prefer the discussion method combined with sharing sessions (Tapilouw et al., 2017). Hence, this study focuses on population analysis to analysis information about the prospective training participants' current competencies, social and linguistic environments, and preferred learning styles. These factors are crucial in shaping the design of the training package modules.

Method

This study uses a descriptive research method, focusing more on exploring what is occurring rather than delving into how or why it happens (Sugiyono, 2021). This study utilized a data collection technique involving a questionnaire distributed via Google Forms to 25 aviation education and training institutions across Indonesia. The questionnaire divided into five main areas such as personal data, recent training, attitudes toward training, self-study attitudes, and preferred learning styles of prospective trainees, specifically training managers in aviation education and training institutions. In this descriptive study, questionnaire data are first gathered as qualitative information and then transformed into quantitative percentages. These percentages are later analyzed to support decision-making.

Discussion

The Center for Human Resource Development on Civil Aviation (CHRDCA), a unit under the Indonesia Ministry of Transportation, is responsible for various tasks, including the standardization of training programs. In line with this responsibility, the CHRDCA has developed five Standardized Training Packages (STP) that have gained recognition from the ICAO and have even been used by other countries. These training packages consist of: 1) Ramp Safety Awareness, 2) Aviation Fire Fighting Foam Evaluation, 3) Foam Tender Operation and Defense Driving, 4) Area Control Surveillance Refresher Course, and 5) Aerodrome Control Refresher. Currently, the CHRDCA is working on a new Member-ICAO Training Package (M-ITP) titled "Development of Training and Procedure Manual (TPM) for Approved Training Organization (ATO)."

M-ITP is a competency-based training course developed by a Trainair Plus (TPP) Member focusing on the implementation of ICAO SARPs and related guidance materials. These M-ITPs are designed by the Course Development Unit (CDU) of a TPP Member, with oversight from an ICAO-approved Instructional System Design (ISD) validator and ICAO-approved Subject Matter Experts (SMEs). M-ITPs can be delivered through the network of TPP Members (ICAO, 2022). This M-ITP is titled "Development of Training and Procedure Manual (TPM) for Approved Training Organization (ATO)." TPM is a document that provides detailed information about the training programs offered and outlines how the training organization conducts its activities. It is an essential document for the training organization because it provides the management and line personnel with clear guidance on the policy of the training organization as well as the procedures and processes which are used to provide training (ICAO, 2018).

From the questionnaire distributed via Google Forms to 25 aviation education and training institutions in Indonesia, 51 respondents completed the form. The questionnaire results for the first main area on personal data are shown in Figure 1. Among the respondents, 49% are aged between 25 and 36 years, 41.25% are between 36 and 55 years, and the remainder are either below 25 years or above 55 years. This indicates that the majority of respondents are within the productive age range. Furthermore, in terms of educational background, 82.4% of respondents have completed higher education at the diploma, bachelor's, or master's level.

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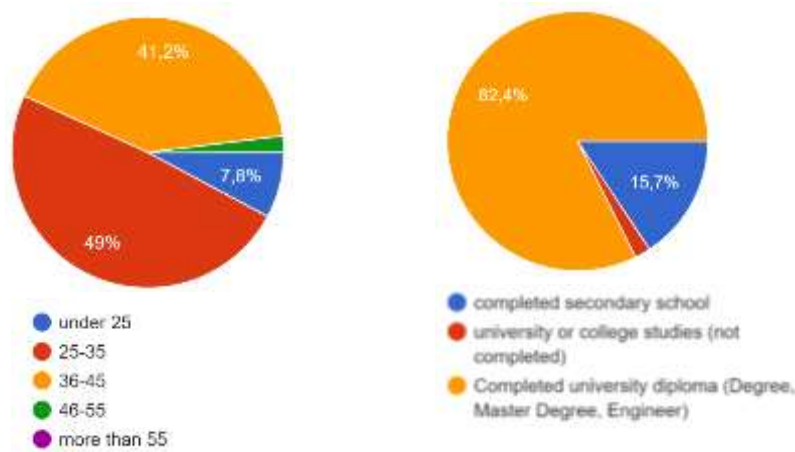


Figure 1. Respondent's personal data

The questionnaire for the second main area on recent training, consist of four questions, with the results shown in Figure 1. The first question, concerning job experience, showed that 43.1% of respondents had 6 to 10 years of work experience, 37.3% had 0 to 5 years, and the rest had 11 to 15 years or more than 15 years of experience. The second question, about training attended over the past three years, showed that 51% of respondents had participated in 3 to 4 training sessions, 27.5% had attended 1 to 2 sessions, none had never attended training, and the rest had participated in more than 5 or 10 sessions. The third question, concerning participation in training related to development of TPM, indicated that 78.4% of respondents had never participated in similar training, while only 21.6% had participated in similar training. The fourth question, regarding difficulties in finding information about TPM, showed that 45.1% of respondents very often faced challenges, and 31.4% often faced challenges.

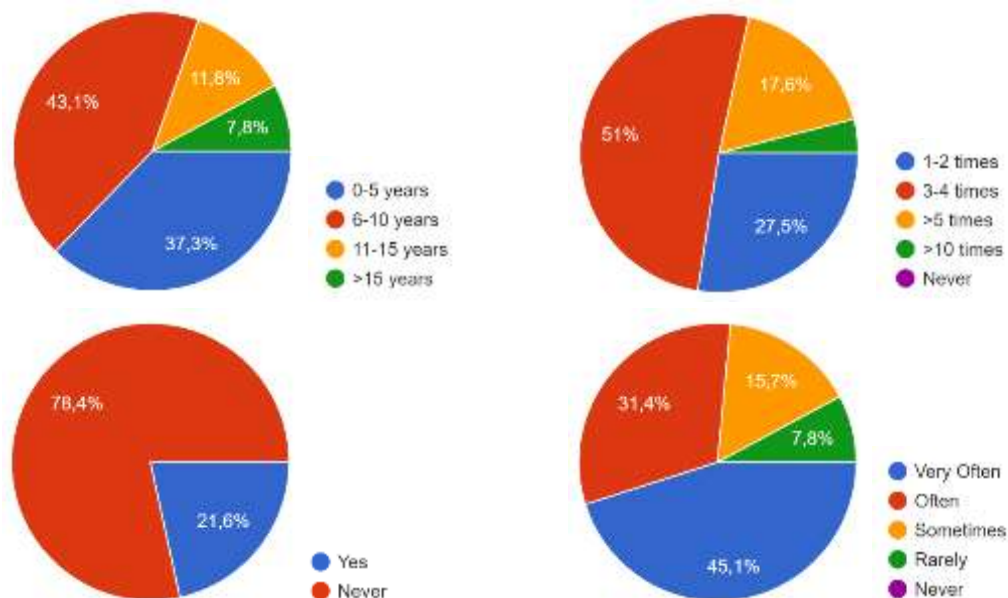


Figure 2. Respondent's recent training

The questionnaire for the third main area on attitudes toward training, consist of six questions, with the results illustrated in Figure 3. The first question response, 68.6% of

respondents chose that training is essential for performing their job, while 31.4% chose although some of the training they attended was not directly related to their role, it was still useful. The second question response, 62.7% of respondents chose understanding what their job entails and how to perform it after completing the training, while 37.3% chose some of their ability to perform job was gained after the training. For the third question, 39.2% of respondents needed 3 to 6 months post-training to fully grasp their job responsibilities, 27.5% needed more than 6 months, and 21.5% needed between 1 week and 1 month. The fourth question revealed that 70.6% of respondents believed the ideal duration for TPM development training is 4-5 days, while 19.6% preferred a longer period of 6-10 days. In the fifth question, 94.1% expressed interest in attending TPM development training. In the sixth question, 96.1% expressed interest in attending TPM development training.

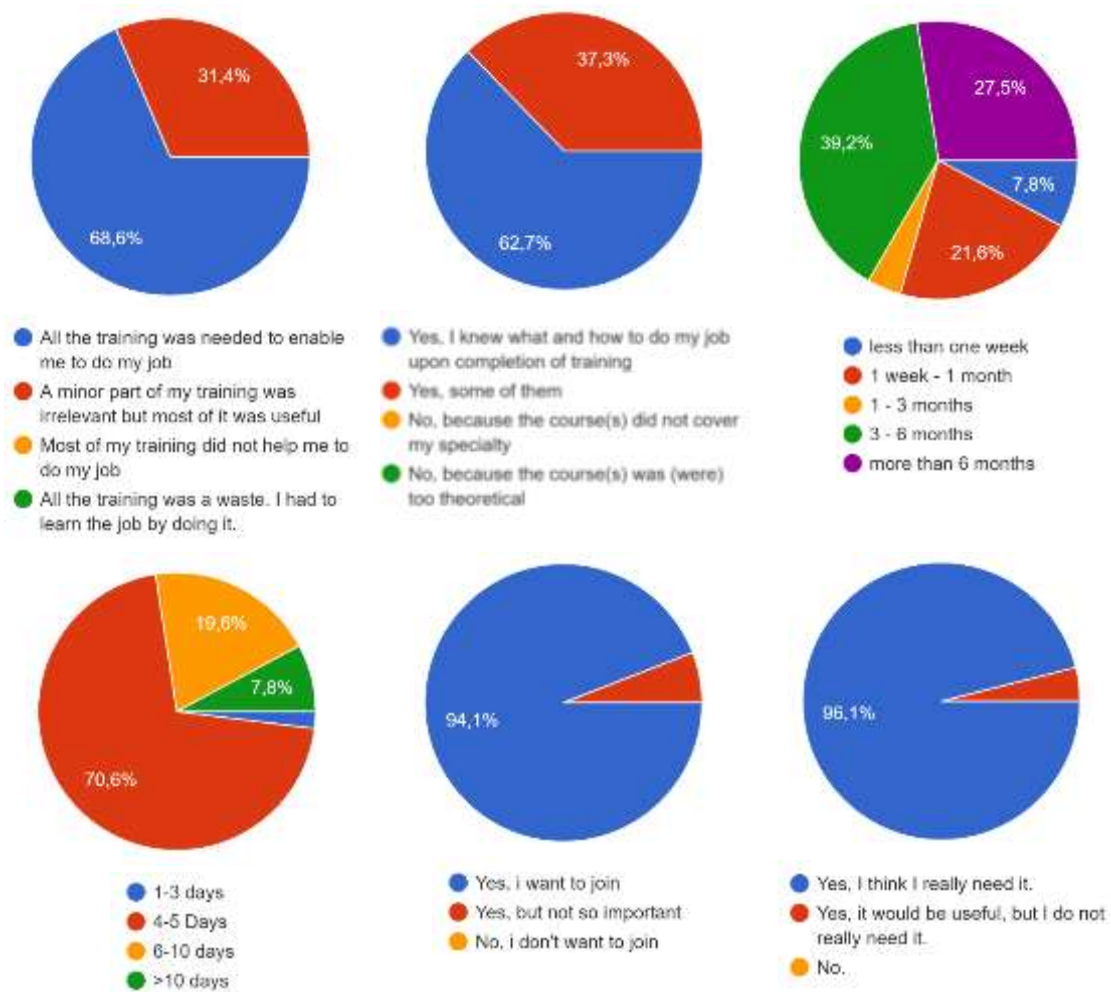


Figure 3. Respondent's attitude towards training

The questionnaire for the fourth main area on self-study attitudes, comprising three questions, with the results shown in Figure 4. For the first question, only 25.5% of respondents regularly read technical literature on their own outside of training, 64.7% occasionally did so, and 9.8% rarely engaged in self-study. For the second question, just 13.7% of respondents experienced minimal difficulty in learning by reading handouts independently, while the rest faced significant challenges, often requiring someone else to explain the material to them. In response to the third

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question, 39.2% of respondents made notes and wrote down key points from the books they studied, 15.7% underlined important sections, and 43.1% did both.

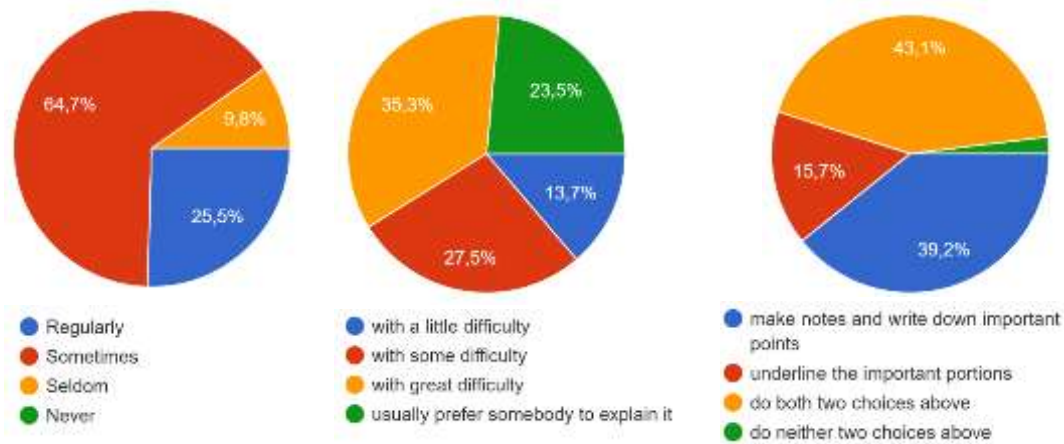


Figure 4. Respondent's self-study attitudes

The questionnaire for the fifth main area regarding preferred learning styles consist of two questions. The first question, participants were asked to rank four learning methods based on their effectiveness: lecture, educational film, e-training (computer-based), and demonstration and practical exercises, with the results shown in Figure 5. Among the respondents, 82% of respondents ranked the lecture method as the most effective, while 67% chose demonstration and practical exercises as the second most effective method. Computer-based e-training was ranked third by 57% of respondents, and 59% rated educational films as the least effective method. Based on the survey results, the lecture method is deemed the most effective learning approach for the respondents. The survey results for the second question can be seen in Figure 6, where 66.7% selected instructor-led competency-based training with scenarios as the preferred learning method for TPM development training. A total of 31.4% chose demonstration and practical exercises, while the rest chose for e-learning.

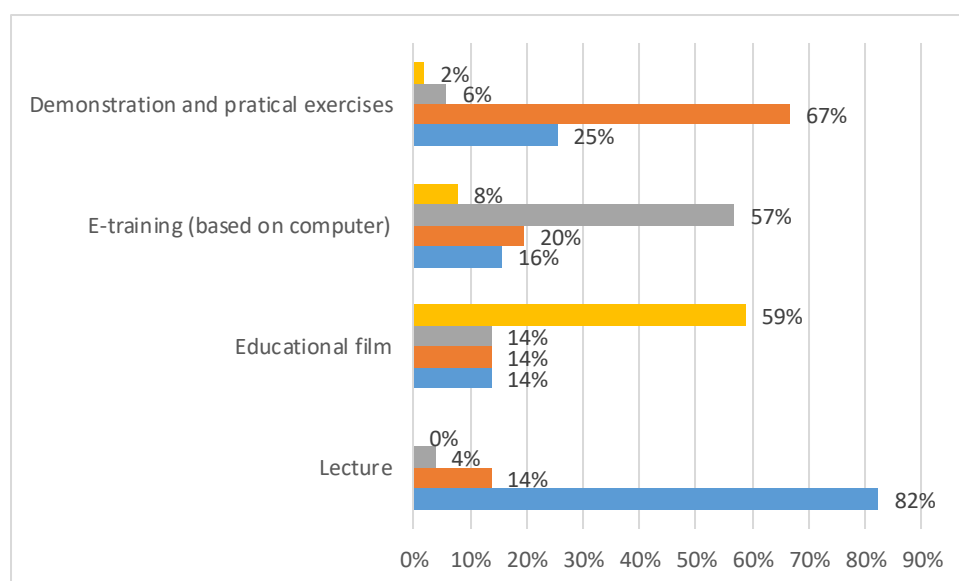


Figure 5. Rank of learning method effectiveness

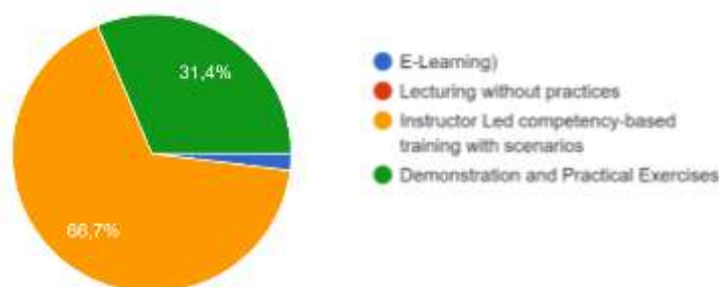


Figure 6. Learning styles

The results of the first main area of the questionnaire in Figure 1, which focused on personal data, can be summarized in Table 1. These findings indicate that the prospective training participants are of productive age and have an adequate educational background to participate in M-ITP training programs. Understanding the age and educational background of prospective participants is crucial for designing effective training materials to achieve optimal outcomes. This aligns with findings from previous research, which suggest that both age and education level have a positive and significant impact on performance (Widakdo et al., 2021).

Table 1. Summary of personal data

Main Area	Result	Summary
Personal data	1. Age between 25 and 36 years (49%), between 36 and 55 years (41.25%).	Prospective training participants are of productive age and have a sufficient educational background
	2. Completed higher education at the diploma, bachelor's, or master's level (82.4%).	

The results of the second main area of the questionnaire in Figure 2, which focused on recent training, can be summarized in Table 2. These findings indicate that prospective training participants have adequate work experience and regularly attend training sessions in past three years. However, they have not participated in training related to the development of TPM, and face challenges in finding information on TPM development. This highlights a significant opportunity to develop M-ITP in TPM development training. This aligns with previous research, which suggests that training is deemed successful when it effectively addresses the needs or specific challenges of an organization (Hartoyo & Efendy, 2017).

Table 2. Summary of recent training

Main Area	Result	Summary
Recent training	1. Have work experience 6 to 10 years (43.1%) , 0 to 5 years (37.3%).	Prospective training participants have adequate work experience and regularly attend training sessions. However, they have not participated in TPM development training and face challenges in finding resources on TPM development. This indicates a strong need for such training.
	2. Had participated in 3 to 4 training sessions at the last three years (51%), participated in 1 to 2 training sessions (27.5%).	
	3. Had never participated in development of TPM or similar training (78.4%).	
	4. Very often faced challenges in development of TPM (45.1%), often faced challenges (31.4%).	

The results of the third main area of the questionnaire in Figure 3, which focused on attitudes toward training, can be summarized in Table 3. These findings indicate that prospective

training participants believe training is crucial for improving their job performance, with the ideal timing for post-training evaluation being 3 to 6 months after completion. Additionally, the ideal duration for TPM development training is between 4 to 5 days, and nearly all participants expressed interest in attending this training. This suggests a strong demand for developing M-ITP in TPM development training, with an ideal post-training evaluation period of 3 to 6 months. This aligns with previous research, which indicates that trainees experience increased confidence in their performance four months after completing the training (Varvari et al., 2023).

Table 3. Summary of attitudes toward training

Main Area	Result	Summary
Attitudes toward training	<ol style="list-style-type: none"> 1. All the training was needed to enable their job (68.6%), minor part of the training was irrelevant but most it was useful (31.4%). 2. Understanding what and how to do the job after completing the training (62.7%), some of them (37.3%). 3. Need 3 to 6 months post-training to fully grasp their job responsibilities (39.2%), need more than 6 months (27.5%), and need between 1 week and 1 month (21.5%). 4. The ideal duration for TPM development training is 4-5 days (70.6%), preferred a longer period of 6-10 days (19.6%). 5. Interest to attend TPM development training (94.1%). 6. Need development of TPM training (96.1%). 	Prospective training participants believe that training is essential to improve their job performance, with the ideal timing for post-training evaluation being 3 to 6 months after completion. They are interested in and recognize the need for this training, considering an ideal duration to be 4 to 5 days.

The results of the fourth main area of the questionnaire in Figure 4, which focused on self-study attitudes, are summarized in Table 4. These findings suggest that prospective training participants occasionally engage in self-study through technical literature but encounter significant challenges, indicating that self-study may not be ideal for them. This suggests that M-ITP in TPM development training is not suitable for self-study. Providing printed handouts is recommended, as participants appreciate the ability to take notes and highlight key information. This aligns with previous research, which indicates that self-study often involves various limitations and challenges. However, when learners are committed to their tasks, they can address these challenges through self-assessment and cognitive awareness. Therefore, effective self-study requires dedication and metacognitive awareness for consistent and successful development (Salihoglu, 2022).

Table 4. Summary of self-study attitudes

Main Area	Result	Summary
Self-study attitudes	<ol style="list-style-type: none"> 1. Sometimes read technical literature outside of training (64.7%), regular (25.5%). 2. Found a little difficulty in learning by reading handouts independently (13.7%), some difficulty (27.5%), great difficulty (35.3%), usually prefer somebody to explain it (23.5%). 3. Made notes and wrote down key points from the books they studied (39.2%), underlined important sections (15.7%), did both (43.1%). 	Prospective training participants occasionally engage in self-study by reading technical literature but encounter significant challenges, suggesting that self-study may not be well-suited for them. It is recommended to provide printed handouts, as participants appreciate the ability to write notes and highlight key points.

The results of the fourth main area of the questionnaire in Figures 5 and 6, which focused on preferred learning styles, are summarized in Table 5. These findings indicate that the preferred learning methods for M-ITP in TPM development training include instructor-led, competency-based scenario training, lectures or demonstrations, and practical exercises. This aligns with previous research on effective learning methods. First, despite the modern generation's increased reliance on technology, teacher-led sessions remain highly effective. This is due to factors like human interaction, direct guidance, and the opportunities for knowledge sharing they offer (Clement et al., 2021). Second, Instructor-led methods are more effective than self-paced learning. However, self-paced learning also plays a crucial role in education by improving the quality of adult learning (Babu et al., 2022).

Table 5. Summary of preferred learning styles

Main Area	Result	Summary
Preferred learning styles	1. The lecture method as the most effective: 82%, demonstration and practical exercises as the second effective: 67%, computer-based e-training as the third effective: 57%, educational films as the least effective: 59%.	The preferred learning methods are instructor-led competency-based scenario training, lectures, or demonstrations and practical exercises.
	2. Instructor-led competency-based training with scenarios: 66.7%, demonstration and practical exercises: 31.4%.	

Based on the research findings from the five main areas of the questionnaire, the summary can be made. Prospective training participants are of productive age and possess an adequate educational background to participate in M-ITP training programs. These participants have sufficient work experience and regularly attend training sessions, but they have not participated in training related to TPM development. They also face difficulties in finding relevant information about TPM development. Participants believe that training is essential for improving their job performance, with the ideal timing for post-training evaluation being 3 to 6 months after completion. The preferred duration for TPM development training is between 4 to 5 days, and nearly all participants expressed interest in attending this training. While some participants engage in self-study through technical literature, they encounter significant challenges. It is recommended to provide printed handouts, as participants value the opportunity to take notes and highlight key information. Finally, the preferred learning methods for M-ITP in TPM development training include instructor-led, competency-based scenario training, lectures or demonstrations, and practical exercises.

Conclusion

Population analysis is one stage in the development of the Member-International Civil Aviation Organization Training Packages (M-ITP). In this analysis, five main areas were explored through questionnaires: personal data, recent training experiences, attitudes toward training, self-study attitudes, and preferred learning styles of prospective training participants. The findings of this study are as follows: First, prospective training participants are of productive age and possess an adequate educational background to participate in M-ITP training programs. Second, these participants have not participated in training related to TPM development and face challenges in finding relevant information on TPM development. Furthermore, the participants expressed interest in attending this training. Third, the ideal timing for post-training evaluation being 3 to 6 months after completion. Fourth, the preferred duration for TPM development training is between 4 to 5 days. Fifth, while some participants engage in self-study through technical literature, they encounter significant challenges.

Based on the study findings, several recommendations are made: First, the development of M-ITP should continue, as it is highly needed and in demand. Second, the training duration for M-ITP should be set to 4 to 5 days. Third, post-training evaluation for M-ITP should be conducted 3 to 6 months after participants complete the training. Fourth, training materials should be provided in printed handouts. Fifth, the training method should be designed around instructor-led, competency-based scenario training, along with lectures, demonstrations, and practical exercises.

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Bibliography

- Ambarita, F. A., Maas, L. T., & Sadalia, I. (2022). Analysis of the Influence of Training Materials and Methods on the Effectiveness of Training. *International Journal of Research and Review*, 9(8), 793–809. <https://doi.org/10.52403/ijrr.20220867>
- Assen, M. F. van. (2021). Training, employee involvement and continuous improvement—the moderating effect of a common improvement method. *Production Planning and Control*, 32(2), 132–144. <https://doi.org/10.1080/09537287.2020.1716405>
- Babu, R., Bahuleyan, B., Panchu, P., Shilpa, A., Sreeja, C., & Manjuran, D. J. (2022). Effectiveness of Self-paced and Instructor-led Online Learning: A Study among Phase I Medical Students. *Journal of Clinical and Diagnostic Research*, 16(1), 1–4. <https://doi.org/10.7860/jcdr/2022/51778.15837>
- Bansal, A., & Prakash Tripathi, J. (2017). “A Literature Review on Training Need Analysis.” *IOSR Journal of Business and Management*, 19(10), 50–56. <https://doi.org/10.9790/487X-1910065056>
- Cao, X., & Lu, T. (2022). Effectiveness of Standardized Training for Anesthesiology Residents. *International Journal of Clinical and Experimental Medicine Research*, 6(4), 384–387. <https://doi.org/10.26855/ijcemr.2022.10.010>
- Carlisle, J., Bhanugopan, R., & D’Netto, B. (2019). Enhancing task performance through effective training: The mediating role of work environment and moderating effect of non-mandatory training. *Journal of Business Research*, 104(June 2018), 340–349. <https://doi.org/10.1016/j.jbusres.2019.07.033>
- Clement, A., Roland Rencewigg, P., & Murugavel, T. (2021). Instructor-led teaching versus e-learning: Challenges and opportunities. *IUP Journal of English Studies*, 16(1), 69–81. https://www.researchgate.net/publication/353183764_Instructor-Led_Teaching_Versus_E-Learning_Challenges_and_Opportunities
- Darmawan, D., Sudrajat, I., Kahfi, M., Maulana, Z., Febriyanto, B., Pendidikan, J., Sekolah, L., Pendidikan, K., Sultan, U., & Tirtayasa, A. (2021). Perencanaan Pengumpulan Data sebagai Identifikasi Kebutuhan Pelatihan Lembaga Pelatihan. *Journal of Nonformal Education and Community Empowerment*, 5(1), 71–88. <https://doi.org/10.15294/pls.v5i1.30883>
- Dinçer, N. (2023). Elevating Aviation Education: A Comprehensive Examination of Technology’s Role in Modern Flight Training. *Journal of Aviation*, 7(2), 317–323. <https://doi.org/10.30518/jav.1279718>
- EL Hajjar, S. T., & Alkhanaizi, M. S. (2018). Exploring the Factors That Affect Employee Training Effectiveness: A Case Study in Bahrain. *SAGE Open*, 8(2). <https://doi.org/10.1177/2158244018783033>
- Hartoyo, R., & Efendy, H. (2017). Development of Training Needs Analysis in Organization. *Journal of Management Research*, 9(4), 140. <https://doi.org/10.5296/jmr.v9i4.11866>
- ICAO. (2016). *Doc 9941 TRAINAIR PLUS Training Development Guide, Competency-based Training Methodology*. International Civil Aviation Organization. https://www.icao.int/publications/catalogue/cat_2024_en.pdf

- ICAO. (2018). *Doc 9841 Manual on the Approval of Training Organizations* (Third Edit). International Civil Aviation Organization.
- ICAO. (2022). *Trainair Plus Operations Manual (TPOM) - DOC 9941* (Issue January). International Civil Aviation Organization.
- Joel Rodriguez, & Kelley Walters. (2017). The Importance of Training and Development in Employee Performance and Evaluation. *International Journal Peer Reviewed Journal Refereed Journal Indexed Journal UGC Approved Journal Impact Factor*, 3(10), 206–212. <https://www.jmr.com/archive/2017/10/496/the-importance-of-training-and-development-in-employee-performance-and-evaluation>
- Mbabazi, K. E., Ekeocha, Z., Bryn, S., & Clase, K. (2021). Standardisation of Staff Training to Increase Efficiency. *Purdue E-Pubs*. <https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1001&context=birsaficatr>
- Merriman, S. E., Plant, K. L., Revell, K. M. A., & Stanton, N. A. (2023). A new approach for Training Needs Analysis: A case study using an Automated Vehicle. *Applied Ergonomics*, 111(April), 104014. <https://doi.org/10.1016/j.apergo.2023.104014>
- Oka, I. G. A. A. M., Hamzah, S., Winata, H., & Astika, I. M. B. (2023). Evaluasi Pelaksanaan Training Instructor Course (Tic) Di Pusat Pengembangan Sumber Daya Manusia Perhubungan Udara. *Jurnal Ilmiah Aviasi*, 16(02), 64–74. <https://doi.org/https://doi.org/10.54147/langitbiru.v16i01.637>
- Rathore, S. P. S. (2023). Analysing the efficacy of training strategies in enhancing productivity and advancement in profession: theoretical analysis in Indian context. *International Journal for Global Academic & Scientific Research*, 2(2), 56–77. <https://doi.org/10.55938/ijgasr.v2i2.49>
- Ritonga, A. P., Andini, N. P., & Iklimah, L. (2022). Pengembangan Bahan Ajaran Media. *Jurnal Multidisiplin Dehasen (MUDE)*, 1(3), 343–348. <https://doi.org/10.37676/mude.v1i3.2612>
- Salihoglu, S. Y. (2022). The Effectiveness of Self-Studying Strategy in Language Learning. *English Language Teaching and Linguistics Studies*, 4(1), p18. <https://doi.org/10.22158/eltls.v4n1p18>
- Sugiyono. (2021). *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan)* (Ketiga). Penerbit ALFABETA Bandung. <https://opac.perpusnas.go.id/DetailOpac.aspx?id=1220293>
- Tapilouw, M. C., Firman, H., Redjeki, S., & Chandra, D. T. (2017). The importance of training needs' questionnaire to arrange science teacher training program. *Jurnal Pendidikan IPA Indonesia*, 6(1), 110–115. <https://doi.org/10.15294/jpii.v6i1.9599>
- Urbancová, H., Vrabcová, P., Hudáková, M., & Petru, G. J. (2021). Effective training evaluation: The role of factors influencing the evaluation of effectiveness of employee training and development. *Sustainability (Switzerland)*, 13(5), 1–14. <https://doi.org/10.3390/su13052721>
- Varvari, I., Dewhurst, T., Jones, C., & Haslam, R. (2023). Foundation Trainees and Their Perceived Confidence in Practicing Mental Health Competencies Post Their Psychiatry Placements: An Evaluation Study. *BJPsych Open*, 9(S1), S38–S38. <https://doi.org/10.1192/bjo.2023.163>
- Wulandari, A. P., Salsabila, A. A., Cahyani, K., Nurazizah, T. S., & Ulfiah, Z. (2023). Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar. *Journal on Education*, 5(2), 3928–3936. <https://doi.org/10.31004/joe.v5i2.1074>
- Yimam, M. H. (2022). Impact of training on employees performance: A case study of Bahir Dar university, Ethiopia. *Cogent Education*, 9(1). <https://doi.org/10.1080/2331186X.2022.2107301>
- Yin, L., Liu, Y., & Dong, X. (2023). Reflection on Standardized Training for Resident Physicians in Cardiology. *International Journal of Biology and Life Sciences*, 3(2), 39–41. <https://doi.org/10.54097/ijbls.v3i2.10525>