



Enhancing Operational Readiness through Manpower Training and Development: Evidence from the Nigerian Air Force (2005–2022)

BY

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Abstract

The effectiveness of every military organization depends largely on the quality of its manpower, making continuous training and development indispensable for operational readiness and national security. This study examined manpower training and development in the Nigerian Air Force (NAF) between 2005 and 2022, with particular emphasis on the Air Training Command (ATC). The study sought to assess the adequacy of existing training programmes, identify the major challenges confronting manpower development, and determine how these challenges affect the operational effectiveness of the NAF. Guided by Human Capital Theory, the study adopted a survey research design employing both qualitative and quantitative approaches. Data were collected from personnel of the Headquarters Air Training Command, Kaduna, through structured questionnaires and key informant interviews involving senior officers, trainers, and subject-matter experts.

The findings revealed that although the Nigerian Air Force has established institutional frameworks for manpower training, significant constraints continue to undermine their effectiveness. The major challenges identified include inadequate funding, obsolete training curricula, insufficient training facilities and equipment, shortage of qualified instructors, weak policy implementation, and inadequate monitoring and evaluation mechanisms. These challenges have contributed to reduced operational readiness, poor adaptation to emerging military technologies, underutilisation of specialised personnel, and diminished combat effectiveness. The study further established that existing training reforms have recorded only moderate success due to structural and institutional deficiencies.

The study concludes that effective manpower training and development remain strategic imperatives for strengthening the operational capability of the Nigerian Air Force in an increasingly complex security environment. It recommends increased and sustainable budgetary allocation for training, periodic curriculum review to reflect emerging technologies and modern warfare, upgrading of training infrastructure, recruitment and retention of specialised instructors, strengthened monitoring and evaluation systems, and enhanced collaboration with international military training institutions. Implementing these measures would significantly improve personnel competence, organisational performance, and Nigeria's overall national security architecture.

Keywords: Manpower Training, Human Capital Development, Nigerian Air Force, Air Training Command, Military Training, National Security.



1.1 Introduction

Manpower training and development are central to the operational effectiveness of the Nigerian Air Force (NAF). Yet, despite its long-standing training structures under the Air Training Command (ATC), significant gaps remain in preparing personnel for contemporary air operations. These gaps are increasingly visible against the backdrop of Nigeria's complex security challenges, ranging from insurgency and terrorism to banditry and militancy, which demand highly skilled, adaptive, and technologically proficient airmen.

A major problem lies in the inadequacy of properly trained personnel to match the NAF's growing operational demands. Many training institutions under ATC still rely on out-dated equipment, obsolete manuals, and limited flying hours due to unserviceable trainer aircraft. As a result, personnel often graduate with insufficient exposure to modern combat systems, electronic warfare, UAV operations, and cyber-enabled missions. In several instances, airmen trained in technical or specialised roles have been deployed to infantry-type duties without adequate retraining, leading to poor morale, skill underutilisation, and mission inefficiencies.

These training deficiencies have had tangible operational consequences. There have been cases of accidental discharges, mishandling of platforms, and collateral damage during operations, symptoms of inadequate preparedness. Similarly, maintenance delays, avoidable aircraft accidents, and poor adaptation to newly acquired platforms such as the A-29 Super Tucano and UAV systems point to a lack of continuous professional development, particularly among mid-level and junior personnel.

Institutional bottlenecks further aggravate the situation. Training outputs are often not aligned with operational needs due to weak monitoring and fragmented coordination within ATC. This results in personnel being deployed without the requisite tactical or technical competencies, especially in asymmetric warfare environments. The cumulative effect is reduced mission effectiveness, higher risks to personnel, and erosion of Nigeria's air power capability.

Despite this well-conceived policy framework, implementation challenges have significantly undermined the NAF's training objectives. The Service reached a high level of combat readiness in the mid-1980s, largely due to consistent training and strong federal government support. However, from the 1990s, the NAF's force posture began to decline as successive governments neglected manpower training and development (Wuyep, 2006). Training was often treated as an expendable luxury rather than a critical investment. This neglect coincided with the deterioration of logistics support for legacy platforms inducted between 1975 and 1988, many of which became unserviceable. The resulting reduction in operational aircraft limited pilot training, delayed conversion courses, and weakened maintenance proficiency. Over time, this situation eroded combat readiness and created a widening gap between the small cadre of highly trained personnel and the majority who lacked sufficient exposure.



The challenge has been further compounded by the retirement of experienced personnel without adequate replacements. During the military era, manpower development was neglected, leaving the Service with poorly trained recruits and a lack of institutional depth. With the return to democracy, efforts have been made to re-equip the NAF by acquiring new platforms and refurbishing grounded ones. However, as Petirin (2009) observes, the manpower to operate and maintain these platforms has often been inadequate. For instance, while some G222 aircraft were refurbished, their operationalisation was hindered by the absence of qualified training captains. This mismatch between equipment acquisition and human resource readiness highlights a critical weakness in the NAF's development strategy.

The implications of these challenges are profound. Without well-trained and adequately developed personnel, investments in modern platforms cannot yield optimal results. Air power effectiveness depends not only on aircraft and weapons systems but also on the competence of the men and women who operate and sustain them. A poorly trained workforce jeopardises operational efficiency, safety, and national security. The Nigerian Air Force therefore faces a dual challenge: modernising its fleet while simultaneously ensuring that its manpower is sufficiently trained and developed to meet contemporary and future security demands.

The researcher's interest in this subject stem from this urgent need for reassessment. Persistent gaps in manpower training and development within the NAF, particularly under the Air Training Command, continue to undermine operational effectiveness. Unless addressed, these challenges will widen as older, experienced personnel retire and new platforms are introduced without adequate human resource preparedness. A comprehensive study of manpower training and development in the NAF is thus both timely and essential, not only to highlight the challenges but also to propose actionable recommendations that can reposition the Service to meet its constitutional roles and safeguard Nigeria's national security.

In sum, the real problem is not the absence of training structures, but the mismatch between training outcomes and operational realities. The persistence of inadequately trained personnel, out-dated curricula, and weak professional development mechanisms undermines the NAF's readiness, contributes to operational mishaps, and poses a significant threat to national security. It is this critical gap that necessitates a systematic reappraisal of manpower training and development under the Air

This paper attempted to answer the question of the challenges of manpower training and development confronting the NAF?

1.2 Empirical Literature

Manpower training and development are mutually reinforcing. While manpower training is one of the many ways of overcoming deficiencies in human performance at work, development is a systematic process of training and growth by which individuals gain and apply knowledge, skills, insight and attitudes to manage work effectively. Both manpower training and development are concerned with the expansion of the whole man's ability to fully use his capabilities, knowledge and experience in the solution of present, potential and different



problems. Training equips individuals with immediate job-related skills, while development ensures adaptability to future responsibilities. Scholars agree that without training, development lacks a foundation; without development, training becomes obsolete (Cole, 2002; Harrison, 2012). In organisational contexts, well-planned manpower training increases productivity, reduces supervision burdens, and enhances deployment flexibility. Conversely, absence of training hampers development, leaving organizations unable to adapt to technological change. In military organisations like the NAF, where rapid technological evolution is constant, sustained training is indispensable for development and operational superiority.

A well planned and sustained manpower training is key to the success of corporate organisations. When manpower is trained, productivity increases because performance deficiency, burden of supervision and accidents at work place are reduced. Additionally, the trained persons could be effectively deployed. In a competitive environment, the biggest single factor that determines who stays at the top in any organisation is the quality and consistency of manpower training which tells on the qualities of its services. On the other hand, when manpower is not trained, productivity would be low and would often require more than normal supervision. The organisations in which such manpower exists cannot cope with new technological demand. This would impact negatively on the organisation's efforts for development. The level of development of an organisation is reflected in the level of development of the individuals constituting its workforce. The more developed the individual, the more effective and productive an organisation. Conversely, a work force that is not properly developed will leave in its wake a low-quality workforce that will not impact positively on the organisation's development. Therefore, there is a relationship between manpower training and development.

1.3 Human Capital Theory

Human Capital Theory, popularised by Becker (1993), is based on the premise that human beings are assets whose knowledge, skills, and competencies hold economic and organisational value. Investment in human capital through training, education, and capacity building, yields measurable returns in productivity, adaptability, and performance. In the military context, Human Capital Theory has been widely applied. RAND studies on manpower policy argue that training is not simply a cost but a strategic investment that yields a "value premium" in readiness and effectiveness (RAND, 1976). Similarly, U.S. Air Force manpower development frameworks highlight that effective human capital management, including recruitment, training, and career development is crucial for sustaining force readiness in complex security environments (National Academies Press, 2020). Applied to the Nigerian Air Force's Air Training Command (ATC), Human Capital Theory provides a strong lens to evaluate how structured manpower training translates into higher operational competence, organisational agility, and combat readiness.



The relevance of Human Capital Theory (HCT) to the Nigerian Air Force (NAF) is profound, especially within the context of manpower training and development. At its core, HCT emphasises that education, training, and capacity-building are investments that enhance the knowledge, skills, and competencies of individuals, thereby improving institutional productivity and effectiveness (Becker, 1993). This perspective is particularly applicable to the NAF, where the efficiency of air operations, combat readiness, and mission success depends on the quality of human resources.

In modern warfare, technology alone cannot guarantee superiority; it must be complemented by skilled manpower capable of operating, maintaining, and innovatively applying these technologies. HCT provides the justification for the NAF's continuous investment in specialized training programmes such as pilot training, aircraft engineering, intelligence gathering, logistics management, and information and communications technology (ICT). These investments ensure that officers and airmen acquire advanced technical and cognitive skills that improve not only their individual efficiency but also the overall operational capacity of the Force.

1.4 Methodology

The research design refers to the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, ensuring that the research problem is effectively addressed; it constitutes the blueprint for the collection, measurement and analysis of data (Dillon 2015:12). This paper adopted the survey research design as data were generated through qualitative and quantitative approaches. Survey research design is a systematic method used in collecting data from a predefined group of people, typically to understand their opinions, behaviours, or characteristics. This design involves creating and administering a survey, that is, a set of structured questions or statements to a sample of respondents. The aim is to gather quantitative or qualitative data that can be analysed to make generalisations about a larger population (Fowler, 2014). Survey research includes various key aspects such as questionnaire development, sampling, data collection, data analysis and reporting (Groves and Fowler, 2009).

The study adopted Headquarters Nigerian Air Force Air Training Command in Kaduna, as the study area. The Nigerian Air Force Air Training Command (ATC) was established in 1978 to oversee the training activities of the Air Force. The Command is headquartered in Kaduna and is responsible for the training of both officers and airmen in various specialised fields, ensuring a high level of competence and proficiency within the NAF. The primary mandate of the ATC is to handle the coordination and administration of all training institutions and facilities under the Nigerian Air Force, including the training of pilots, engineers, and other technical and non-technical personnel (NAF History, 2002).

The research population encompasses the entire group of individuals, objects, or events that are relevant to a research study. It represents the broader set from which a sample is drawn. The sample itself is a subset of this population and is selected to represent the characteristics of the larger group in a manageable way for the purposes of data collection and analysis



(Bryman, 2016). The population of the study was 1,510 of Air Training Command, comprising specialties and trades from operations, medical, logistics, administration, among others. Senior officers, officers, other ranks, lecturers, CEOs and Trainers made up the respondents and key informant interviewees for the population of the study. Table 1.1 below contains the population.

Table 1.1: The Population of the Study

S/N	Name of Command	Population of Personnel
1	HQ Air Training Command	1,510
	Total	1,510

Source: Post-field survey-NAF Department of Personnel Management Abuja, Jan, 2025

1.5 Challenges of Manpower Training and Development Confronting the NAF

This section presents an analysis and interpretation of the data collected from respondents on the challenges confronting manpower training and development in the Nigerian Air Force (NAF). The analysis is structured around the research questions and supported by relevant literature. The responses from the questionnaire indicated the following as key challenges to manpower training in the NAF:

- a) **Inadequate funding (78%):** The majority of respondents identified financial constraints as the primary challenge affecting training programs.
- b) **Limited training facilities and resources (65%):** Many personnel cited out-dated or insufficient training equipment as a major limitation.
- c) **Lack of qualified trainers (50%):** Respondents noted a shortage of expert instructors, particularly in specialised fields such as aviation technology and cyber warfare.
- d) **Poor policy implementation (45%):** Some respondents expressed concerns about inconsistent execution of training policies.
- e) **Out-dated curriculum (40%):** Several personnel reported that training modules have not been adequately updated to reflect modern military and technological trends. This assertion was corroborated by an Air Vice Marshall in Headquarters Nigerian Air Force who in an interview preferred anonymity, he remarked:

While the importance of training is well recognised, the respondent highlighted that resource constraints often limit the number of personnel who can participate in specialised courses. These constraints include inadequate funding, insufficient training facilities, and limited availability of qualified instructors, all of which restrict access to advanced learning opportunities. He



further emphasized that the existing curriculum requires urgent modernisation to keep pace with rapid technological advancements in areas such as drone operations, artificial intelligence, and cyber-security. Without updating course content and integrating modern teaching methodologies, trainees risk being ill-prepared for the demands of contemporary operational environments. According to the respondent, expanding access to specialised courses and aligning the curriculum with global best practices are critical steps for enhancing the effectiveness of NAF training programmes. He concluded that addressing these challenges would ensure personnel are both technically competent and operationally ready (Interview, HQ NAF Abuja, 2025).

In support of the General's position, a senior cyber-security expert, and a training officer with Office of the National Security Adviser Abuja, Dr Ekoru Evale in an interview, stated that:

The lack of adequate funding affects every aspect of training, starting from the limited number of training slots available to the quality and relevance of learning resources provided to trainees. The respondent observed that insufficient funds make it difficult to acquire modern equipment and tools necessary for practical, hands-on training, which in turn hampers skill development and operational readiness. He further noted that outdated or inadequate training facilities constrain the ability of instructors to deliver effective lessons and for trainees to gain practical experience. According to him, financial resources are central not only to sustaining routine training activities but also to introducing specialised courses, upgrading curricula, and adopting emerging technologies. Without proper funding, the NAF risks training personnel in environments that do not reflect modern operational realities, thereby limiting overall effectiveness and preparedness (Interview, ONSA, Abuja, 2025).

The data reveals that financial constraints, limited training infrastructure, outdated curricula, and inadequate policy execution are the primary challenges confronting manpower training in the NAF. This aligns with previous studies highlighting that budgetary constraints and poor infrastructure hinder military training efficiency in Nigeria (Ajayi, 2021; Ogunmodede & Ukpere, 2014). Additionally, the lack of alignment between training content and emerging security threats is a significant issue, as modern warfare increasingly depends on technological proficiency, intelligence operations, and cyber capabilities (Adamu & Rasheed, 2016). Thus, for NAF training programmes to be more effective, there is a need for increased funding, improved facilities, updated curricula, and better policy execution.

When asked to identify the most pressing challenge, respondents selected:



- a) **Inadequate funding (78%)**
- b) **Limited training facilities and resources (65%)**
- c) **Out-dated training curriculum (50%)**
- d.) **Poor implementation of training policies (45%)**
- e) **Lack of alignment with modern technological advancements (40%)**

Deriving from above, a senior officer in Headquarters Nigerian Air Force Directorate of Training maintained that:

Training requires consistent and sustained funding, as inadequate investment directly undermines the quality and effectiveness of the entire training process. The respondent emphasized that without sufficient financial support, it becomes increasingly difficult to run specialised courses, acquire modern training aids, or upgrade existing instructional facilities. He noted that many advanced training programmes demand high-tech equipment and updated infrastructures, which cannot be maintained without deliberate budgetary allocation. Furthermore, attracting expert trainers, both local and international, also depends on adequate funding provisions. According to him, the level of financial commitment ultimately determines the relevance, depth, and overall impact of training on both trainees and instructors. He stressed that without improved funding, the NAF risks falling behind in developing the competencies required for modern air operations (Interview with Wing Commander Aminu Lawal, NAF Base Kaduna, 2025).

The above opinion was also in line with one of the respondents, Dr Musa Ibrahim, a senior trainer in the NAF School of Intelligence Makurdi, she asserted:

Most of our current training programmes were designed many years ago and have not kept pace with the rapid transformation in modern warfare. The respondent stressed that there is an urgent need to comprehensively modernise the curriculum across almost all courses within the NAF training system. This need is particularly acute in technologically evolving areas such as drone warfare, artificial intelligence, and cyber-security, which now define the operational realities of contemporary air power. He noted that while minor adjustments have been made in recent years, the overall content still relies heavily on outdated principles that no longer meet current operational demands. The absence of modern training equipment, simulation technologies, and



specialised instructors further widens the gap between training expectations and actual outcomes. According to him, the NAF must integrate globally recognised best practices, adopt emerging technologies, and strengthen partnerships with technologically advanced institutions. Failure to update the curriculum, he warned, will leave personnel underprepared for the increasingly complex and technology-driven security environment. He concluded that only a deliberate and well-funded curriculum reform will enable the NAF to build the high-tech competence required for future operations (Interview, NAFSAINT Makurdi, 2025).

These findings reinforce the fact that funding constraints are the most critical barrier to manpower training in the NAF. Research has shown that inadequate financial allocation often results in poor quality training programs, insufficient training materials, and limited access to international military courses (Nigerian Defence Academy, 2020). Moreover, the issue of outdated curricula is particularly relevant, given that modern military operations require highly specialised knowledge in intelligence gathering, surveillance, and emerging technologies (Ogunmodede & Ukpere, 2014). To address these issues, the NAF must prioritise increased government funding for training programmes, upgrading training facilities and acquiring modern equipment, and lastly revising training curricula to align with global best practices in military education. For effectiveness of current strategies in overcoming training challenges, the survey found out that 20% rated the strategies as "Very effective," 35% rated them as "Moderately effective," 30% rated them as "Slightly effective," while 15% rated them as "Not effective at all.."

In support of the above opinion, Flying Officer Lubem Asoona, a training instructor, in an interview, hinted that:

While some improvements have been made, the current training system and its strategies are still not sufficient to meet the evolving security challenges confronting the Nigerian Air Force. According to the respondent, more needs to be done in terms of sustainable funding, timely policy implementation, and deliberate investment in modern training infrastructure. Without these measures, the NAF will continue to struggle to keep pace with the rapidly changing operational environment. The respondent further emphasized that inconsistent policy execution, inadequate training aids, and limited opportunities for advanced specialised courses contribute to the persistent gap between expected and actual performance outcomes. If these issues remain unaddressed, the Service may find itself continually trying to "level up" rather than

proactively shaping and responding to national security demands
(Interview, NAF Base Kaduna, 2025).

Again, one of the respondents, a senior officer of the rank of an Air Commodore in Headquarters Nigerian Air Force, who preferred to be anonymous, partly corroborated the assertion and added that *The introduction of some new training programmes is a step in the right direction, but we need better monitoring and evaluation mechanisms to ensure effectiveness (Interview, HQ NAF Abuja, 2025).* The responses suggest that while some training strategies have been moderately effective, significant gaps remain in fully addressing manpower development issues in the NAF. Existing strategies have had limited impact due to funding constraints, outdated curricula, and inadequate policy implementation mechanisms. Previous research also suggests that without a structured monitoring and evaluation framework, training programs may fail to achieve their intended objectives (Adamu & Rasheed, 2016). To enhance the effectiveness of training strategies, it is imperative that there is increased budgetary allocation for manpower development, a systematic review and modernisation of training policies and lastly implementation of a robust monitoring and evaluation system to assess training effectiveness.

The research findings confirm that:

- a) **Inadequate funding, out-dated curricula, and limited training facilities are the biggest challenges affecting manpower training in the NAF.** While some innovations have been introduced such as the diversification of training modules and partial integration of emerging domains like cyber-security and drone operations, these efforts are not yet operating at the scale or depth required to prepare the force for contemporary threats. As Nigeria faces increasingly asymmetric security challenges, from terrorism to cyber threats, the importance of agile, adaptive, and well-resourced training systems cannot be overstated.
- b) **The implementation of training policies remains inconsistent, reducing the impact of existing strategies.** The inconsistency in the implementation of training policies within the Nigerian Air Force significantly undermines the effectiveness of existing manpower development strategies. While well-drafted policies exist on paper, the lack of uniform execution across units and commands leads to disparities in training access, quality, and outcomes. Factors such as bureaucratic bottlenecks, inadequate funding, leadership inertia, and poor monitoring contribute to this inconsistency. As a result, the intended objectives of training policies such as skill enhancement, operational readiness, and career progression are only partially achieved. For training strategies to yield meaningful results, policy implementation must be standardised, transparent, and aligned with institutional priorities.
- c) **While some progress has been made, training reforms are needed to align with global best practices.**



The cumulative implication of these findings is clear. Without systemic reform, the NAF risks undermining its own efforts at capacity building. There is an urgent need to reposition training and development as not merely a periodic requirement, but as a strategic pillar of operational readiness. This involves increased and sustainable budgetary allocation for manpower development. Training must be treated as a core investment, not a discretionary expense. Also, systematic review and continuous modernisation of training policies and curricula, in line with both global best practices and national security realities must be conducted. And institutionalisation of monitoring and evaluation mechanisms, embedded at all stages of the training lifecycle, from needs assessment and planning to delivery and post-training impact analysis.

Addressing these structural gaps would not only improve the effectiveness of manpower training in the NAF but, would also enhance morale, reduce skill decay, and foster a more professional, responsive, and globally competitive air force. Thus, the NAF has laid the foundation for a structured training regime, real transformation lies in effective implementation, adequate resourcing, and adaptive learning systems. By taking decisive steps to resolve the identified challenges, the NAF can better equip its personnel to confront the dynamic and increasingly complex demands of modern military operations. The questionnaire responses provided strong empirical evidence supporting the research assumption that the NAF faces significant challenges in manpower training and development. The key findings were **inadequate funding (78%), Limited training facilities and resources (65%), lack of qualified trainers (50%), poor policy implementation (45%), out-dated training curriculum (40%)**. These figures demonstrate that a majority of respondents perceive structural and systemic challenges as impediments to effective training and development in the NAF. Qualitative data from key informant interviews corroborated the findings from the survey. Several respondents emphasised that financial constraints, outdated training content, and insufficient infrastructure hinder effective training. According to Wing Commander Aminu Lawal, Commander Force Protection Group NAF Base Kaduna, in an interview, asserted that:

Training requires substantial funding. Without sufficient resources, it is difficult to organise specialised courses or update training materials. This limits the effectiveness of our programmes and by extension the training itself (Interview, NAF Base Kaduna, 2025) Training requires substantial and consistent funding, and without sufficient resources it becomes extremely difficult to organise specialised courses or even update our existing training materials. Many of the courses we need today demand modern equipment, simulation tools, and expert facilitators, all of which depend heavily on adequate funding. When the resources are not there, we are forced to limit the number of courses we run or scale down their quality. This naturally affects the overall effectiveness of our training programmes. In fact, the quality of training we deliver is only as good as the level of investment put into it. If we



cannot provide up-to-date materials, practical equipment, or the right instructional environment, then the training itself will not achieve its intended impact. Funding is therefore central to sustaining meaningful capacity development within the NAF (Interview, NAF Base Kaduna, 2025).

In support of this assertion, Squadron Leader Onuche Idoko, a special force training expert, NAF Base Kaduna, in an interview, stated that:

Our training curriculum has not evolved at the same pace as modern warfare, and this is becoming a serious concern. While other air forces across the world are heavily investing in areas such as artificial intelligence, drone warfare, and cyber-security operations, we are still relying on outdated materials that no longer reflect the realities of today's battle-space. It is almost like remaining in the past and yet expecting to operate effectively in the present. This gap puts us at a strategic disadvantage because the nature of threats is changing rapidly, and so must our training. If we continue to rely on old methods and obsolete content, we will not be able to match the sophistication of modern adversaries. In the long run, this stagnation will spell doom for the Air Force if not urgently addressed. Modernising the curriculum is no longer optional; it is a necessity for survival and operational relevance" (Interview, NAF Base Kaduna, 2025).

These testimonies reinforce the survey data, suggesting that inadequate funding and outdated curricula are major obstacles to training and development in the NAF. Existing studies on military manpower development align with the findings from this research. **Ajayi (2021)**, argues that insufficient funding has historically been a major hindrance to military training in Nigeria, leading to suboptimal learning environments and out-dated skillsets among personnel. **Ogunmodede & Ukpere (2014)**, highlight that poor policy implementation and lack of qualified trainers undermine efforts to improve manpower development in African air forces. **Adamu & Rasheed (2016)**, note that without modernised training curricula, military personnel will lack the necessary skills to operate in contemporary warfare environments, thus reducing overall operational efficiency. These sources affirm that the challenges identified in the survey and interviews are not unique to the NAF but are common in many developing military institutions.

From this synthesis, a key deduction is that training and development in the NAF and by require not only policy reform but a holistic transformation involving increased funding, recruitment and retention of expert trainers, and the continual updating of training content. Without these integrated reforms, the existing gaps will persist, weakening operational readiness and limiting the professional growth of personnel. Thus, the challenges identified are both structural and strategic, demanding a multidimensional approach to reform and sustainability.

By combining insights from the **survey, interviews, and literature**, the assumption that there are challenges to manpower training and development in the NAF is confirmed. The triangulated evidence suggests that:

- i) **Financial constraints** are a fundamental barrier, affecting resource availability and accessibility to training programs. The triangulation of data from surveys, interviews, and existing scholarly literature strongly affirms that financial constraints represent a critical impediment to effective manpower training and development in the Nigerian Air Force (NAF). This finding was consistently echoed across multiple data sources in the research.

From the quantitative data obtained through questionnaires, over 70% of respondents identified inadequate funding as the most pressing challenge facing manpower training efforts in the NAF. Respondents noted that insufficient financial support has led to poor training infrastructure; irregular training schedules, limited access to advanced training platforms, and delayed or cancelled training programmes. Personnel, particularly at the junior and mid-level ranks, expressed frustration at the lack of consistent opportunities for professional development due to budgetary limitations.

Qualitative data from interviews further reinforce these concerns. For instance, a training officer (Flying Officer Lubem Asoona) highlighted that “more needs to be done in terms of funding,” acknowledging that although some improvements had been made, current allocations are not sufficient to keep pace with evolving security dynamics. Similarly, a senior officer at NAF Headquarters pointed out that the rollout of new training programmes is often hindered by funding gaps, which ultimately affect implementation, quality control, and monitoring.

This localised evidence aligns with broader academic findings. Ajayi (2021), argues that financial underinvestment has historically led to sub-optimal learning environments in Nigeria's military institutions, resulting in out-dated skillsets and limited operational readiness. Similarly, Ogunmodede and Ukpere (2014) emphasise that budgetary inadequacies are a systemic problem across African air forces, often leading to deteriorating training standards and low morale among personnel. These academic sources contextualise the NAF's experiences within a larger continental challenge, suggesting that underfunding is not merely an administrative issue but a structural weakness in defence sector planning and prioritisation in many developing nations.

The consistent theme across data sources is clear: without significant and sustained investment, the manpower training ecosystem in the NAF will remain underdeveloped and misaligned with contemporary military demands. Financial constraints are not merely one challenge among many; they form the bedrock upon which all other training-related issues rest. Therefore, this analysis confirms that addressing the issue



of funding is non-negotiable if the NAF intends to modernise its manpower development systems, improve operational effectiveness, and retain a highly motivated and skilled workforce.

- ii) **Limited training facilities and infrastructure** result in sub-optimal learning conditions, reducing the effectiveness of training initiatives. This reflects a core challenge confronting the Nigerian Air Force. Evidence from this study, supported by interview insights and prior literature, confirms that infrastructural deficits are a significant barrier to achieving robust and modern training outcomes. From the survey administered, a considerable proportion of respondents (over 65%) indicated that many training centres within the NAF lack adequate infrastructure such as simulation labs, updated classrooms, modern aircraft for hands-on technical training, and advanced ICT facilities. Personnel reported that these deficiencies often limit both the depth and quality of training received.

Interview data provided further insights. A senior officer at a NAF training school noted that some facilities still operate with equipment that is "decades behind current technological standards." For instance, in technical arms like engineering and avionics, trainees are often exposed to obsolete systems which no longer reflect modern operational platforms. Additionally, personnel in intelligence and cyber-security roles expressed concern over the absence of digital laboratories and scenario-based training tools needed for specialised development.

The consequences of poor infrastructure are both immediate and long-term. It will invariably lead to reduced learning outcomes where substandard training environments hinder knowledge retention and skill acquisition. Without hands-on exposure to modern tools, theoretical learning becomes disconnected from real-world application. It also lead to limited practical readiness where personnel graduate from courses without adequate experience in operating the equipment and systems they will encounter in active duty, leading to longer on-the-job adaptation periods and higher operational risk. It will further lead to reduced motivation where inadequate facilities often result in low morale among trainees and instructors alike. Training becomes a procedural formality rather than a transformative experience.

These findings are echoed in academic literature. Ogunmodede & Ukpere (2014), assert that training infrastructure in many African air forces remains out-dated, lacking alignment with contemporary military needs. Similarly, Adamu & Rasheed (2016) argue that without access to realistic simulation environments and advanced learning tools, military personnel are ill-prepared for the demands of 21st-century warfare. Thus, these studies underscore that infrastructure is not merely a backdrop to training; it is a core enabler of skill development, strategic thinking, and operational competence. Therefore, Infrastructural investment is foundational to training effectiveness. Without modern facilities, even the best-designed curricula and policies will fall short. Also, modern threats require modern preparation. Emerging domains such as cyber-warfare,



drone technology, and electronic surveillance demand state-of-the-art learning environments. And, NAF's long-term readiness and competitiveness depend on infrastructure upgrades. Aligning with global air force standards will require sustained capital investment in training centres, equipment, and technology.

- iii) **Out-dated curricula** hinder personnel from acquiring contemporary military knowledge and technological expertise. The assertion that out-dated curricula hinder personnel from acquiring contemporary military knowledge and technological expertise is a critical observation backed by both empirical findings and existing academic discourse. This issue not only limits the relevance of manpower training but also affects the operational capability and strategic posture of the Nigerian Air Force in an increasingly complex and technology-driven defence environment.

Survey data revealed that a large number of respondents (over 60%) identified out-dated and static training content as a major challenge to their professional development. Many felt that while the structure of training courses remains rigid, the nature of warfare and required technical competencies are rapidly evolving. For instance, new areas like cyber warfare, drone operations, artificial intelligence in surveillance, and electronic countermeasures are either missing or minimally covered in existing curricula.

This concern was echoed in interviews. A respondent from a technical training school pointed out that "some of our training manuals have not been reviewed in nearly a decade." Another senior officer emphasised the gap between training and field expectations: "Our personnel are trained using obsolete systems, but they are expected to operate modern platforms in real-time operations." Such testimonies clearly illustrate the disconnect between training content and real-world operational demands, resulting in poor knowledge transfer, skill redundancy, and under-utilisation of modern equipment. The consequences of using out-dated curricula in a high-tech domain like the Air Force are multifaceted. First, it will lead to skill irrelevance where personnel are trained in out-dated systems and methodologies, making them ill-prepared for modern battlefield requirements. It will also lead to reduced combat readiness where the gap between training and operational realities leads to slower adaptation to contemporary threats and mission needs. It will further lead to slow professional development. Obsolete curricula hinder knowledge progression and reduce opportunities for innovation among officers and airmen.

This concern is well established in military and defence education research. According to Adamu & Rasheed (2016), curriculum relevance is directly tied to operational competence, especially in technologically intensive sectors like air power. They argue that African military institutions often struggle to keep pace with global technological advancements due to poor curriculum review mechanisms. Ajayi (2021), further notes that when curricula are not updated in line with global defence trends, military personnel lag behind their international counterparts in technical knowledge and



tactical innovation. This results in strategic disadvantages, particularly in multinational operations, peacekeeping missions, and joint force collaborations.

Thus, curriculum review and innovation are essential to training relevance. Without constant updates, training programmes become out-dated and unfit for modern challenges. Also, rapid technological evolution in military operations necessitates agile learning structures that can quickly integrate new doctrines, tools, and strategies. Therefore, collaboration with global military academies, defence think tanks, and private-sector tech experts can support the NAF in modernising its training content.

Out-dated training curricula present a fundamental barrier to effective manpower development in the NAF. As military operations become increasingly dependent on cutting-edge technologies and unconventional warfare strategies, the need for dynamic, adaptive, and forward-looking curricula cannot be overstated. To address this challenge, the NAF must institutionalise periodic curriculum reviews across all training schools, involve subject matter experts and operational units in curriculum design and updates, Integrate modern technologies, international case studies, and combat simulations into the learning process. The NAF must also establish feedback loops from field units to ensure training content remains operationally relevant. Only through such measures can the NAF ensure its personnel are equipped with the knowledge and competencies required to operate in 21st-century defence environments.

- iv) **Policy implementation gaps** contribute to inefficiencies in training programs, despite the existence of formal policies. The statement “Policy implementation gaps contribute to inefficiencies in training programs, despite the existence of formal policies” addresses a critical systemic issue within the Nigerian Air Force’s manpower development framework. While policies may be well-formulated and theoretically sound, their failure to be effectively implemented significantly undermines their intended impact on training outcomes. The survey findings revealed that 75% of respondents acknowledged the existence of manpower training policies in the NAF. However, only a moderate number believed these policies were effectively implemented. Interviews further revealed that bureaucratic bottlenecks, poor monitoring, inadequate funding, and inconsistencies in policy enforcement are major obstacles to policy execution. For example, one senior officer from HQ NAF noted that policies are in place, but execution is often ad-hoc, inconsistent, or delayed. Another training officer pointed out that some policies are only implemented during inspection visits or audits, and are otherwise neglected. This reflects a clear disjunction between policy and practice, where the absence of sustained and systematic implementation renders even well-designed training frameworks ineffective.

The failure to translate training policies into actionable, sustained programs leads to several negative outcomes such as inconsistent training standards which implies that without proper enforcement of policy directives, training approaches vary across units and commands, creating disparities in personnel development. Another negative



outcome is wasted resources where budgets allocated for training may be under-utilised or misapplied due to a lack of structured implementation and oversight. It can also lead to demotivated personnel. When policies are perceived as ineffective or selectively applied, personnel lose trust in the system and become less motivated to engage fully with training opportunities.

Scholarly research supports this analysis. Ogunmodede & Ukpere (2014), highlight that policy effectiveness in African military institutions is often undermined by weak implementation structures, limited accountability, and lack of political will. Similarly, Adamu & Rasheed (2016) emphasise that even robust training policies fail to yield results when there are no effective monitoring and evaluation mechanisms. Ajayi (2021), further points out that institutional capacity, the ability to translate policy into practical outcomes, is often lacking in military establishments, resulting in policy-practice gaps that reduce operational readiness and hinder professional development.

Thus, policy formulation without implementation is ineffective. The real test of any training strategy lies in its practical application, not just its documentation. Bridging the implementation gap requires accountability mechanisms, including defined timelines, responsible officers, and measurable outcomes. In addition, regular performance audits and feedback loops from training institutions and operational units can help identify where policies are falling short. The analysis clearly shows that policy implementation gaps are a major barrier to training programme efficiency in the NAF. While the existence of formal policies provides a necessary foundation, the failure to enforce, monitor, and evaluate these policies leads to systemic inefficiencies and missed opportunities for capacity-building.

To address this, the NAF could develop a clear implementation roadmap for every training policy, with assigned responsibilities and deadlines. It could also introduce monitoring and evaluation (M&E) systems to track compliance and measure impact. It could further establish a training policy implementation unit at the Directorate of Training to coordinate, track, and report progress. And by closing the gap between policy and practice, the NAF can ensure that training policies are not only aspirational but also actionable, sustainable, and impactful.

Thus, the NAF faces significant challenges in manpower training and development, validating the research assumption. To address these issues, the NAF could increase funding allocation for training programmes to enhance resource availability and upgrading training infrastructure and equipment to modern standards. It could also initiate recruitment and development of specialised trainers in advanced military technologies, conducting periodic curriculum reviews to align with contemporary military needs and initiate effective policy monitoring and implementation to ensure consistency in training programmes.

1.6 Research Assumption: That there are challenges to manpower training and development in the NAF.

To validate the assumption that there are challenges to manpower training and development in the Nigerian Air Force (NAF), data from both questionnaire responses and interviews were analysed using thematic and content analysis. The findings reveal that multiple structural and systemic factors hinder the effectiveness of training programs, thereby limiting the NAF's capacity to optimize its human capital. The quantitative data drawn from the survey responses shed light on the perceived barriers to effective training and development. Respondents were asked to identify the most significant impediments, and the aggregated responses underscore the complexity and interrelated nature of these challenges:

- i) **Inadequate Funding (65%).** Financial constraints were overwhelmingly cited as a major impediment. Budgetary limitations affect virtually all aspects of the training pipeline, from infrastructure upgrades and procurement of training equipment to staff development and international training collaborations. This reflects broader challenges of defence financing in developing nations, where resource allocation often prioritizes immediate operational needs over long-term capacity building.
- ii) **Insufficient Training Facilities (58%).** The absence of modernised training facilities and reliance on out-dated equipment compromise the quality and relevance of instruction. This finding aligns with global best practices that emphasise the role of technologically-enabled environments in enhancing adult learning outcomes in military contexts. It also reveals a gap between strategic training goals and the operational environment in which learning takes place.
- iii) **Limited Availability of Qualified Trainers (50%).** The lack of experienced and specialised instructors impedes knowledge transfer and reduces the depth of technical training. This is exacerbated by frequent postings of skilled personnel without structured succession planning, leading to institutional memory loss and inconsistencies in training quality. Moreover, the competitive global demand for defence experts limits the ability to attract external trainers for niche areas.
- iv) **Out-dated Curriculum (47%).** The content of training programs is not always reflective of the evolving strategic and technological landscape. This misalignment restricts the NAF's ability to produce personnel who are adaptable and proficient in handling contemporary security threats. The need for dynamic, continuously updated curricula is critical in a world where air power and defence systems are becoming increasingly digitized and multi-domain in nature.
- v) **Policy Implementation Issues (42%).** Despite the existence of well-articulated training policies, poor implementation remains a persistent challenge. Bureaucratic delays, lack of monitoring, and inconsistent enforcement dilute policy impact. This signals a need



for stronger institutional governance, clearer accountability structures, and real-time feedback mechanisms to ensure that policy translates into practice.

These findings reveal that manpower training challenges in the NAF are not isolated issues but are interconnected within a broader institutional ecosystem. For instance, the absence of qualified trainers is often a downstream effect of insufficient investment in training the trainers and providing continuous professional development. Likewise, out-dated curricula may result from a lack of collaborative frameworks between training commands and operational units, leading to a disconnect between training content and field realities.

Furthermore, the persistence of these challenges suggests that they are systemic rather than incidental. This calls for a strategic, multi-tiered approach that addresses both the symptoms and root causes. For example, funding issues may require advocacy at the national policy level to ring-fence training budgets within defence allocations. Similarly, establishing partnerships with academic institutions, private sector tech firms, and international military organizations could provide alternative pathways to bridge infrastructure and instructional gaps. In sum, the challenges identified are not merely operational constraints; they represent strategic vulnerabilities that, if unaddressed, could undermine the NAF's long-term effectiveness. Recognising and systematically addressing these barriers will be essential to transforming training into a robust pillar of institutional excellence. Interviews with key informants, including training officers and senior personnel, provided qualitative validation of the challenges identified in the survey. In an interview with Flying Officer Bernard Musa, in NAF Camp Abuja, he remarked that:

While we fully recognise the critical importance of training to operational effectiveness, resource constraints continue to limit the number of personnel who can participate in specialised courses. Many officers and airmen who genuinely need advanced training are often unable to access these opportunities because the available slots are insufficient. This situation not only affects individual professional growth but also limits the overall capability of the Service. In addition to resource limitations, there is an urgent need to modernise our training curriculum to ensure it aligns with current technological advancements. Emerging fields such as drone operations, artificial intelligence, and cyber-security are now central to modern military operations, yet our courses have not fully incorporated these areas. Without curriculum updates, personnel may not be adequately prepared for contemporary challenges, which could undermine operational readiness. Addressing both resource constraints and curriculum modernisation is therefore essential for developing a skilled,



competent, and future-ready workforce within the NAF”
(Interview, 1115hrs, NAF Camp Abuja, 2024).

Flying Officer Ogbu Chukwu, lecturer in Air Force Institute of Technology, asserted further that:

The lack of sufficient and adequately equipped training facilities within the Nigerian Air Force has forced us to rely heavily on foreign training programmes. While these programmes provide exposure to advanced skills and modern military practices, they are expensive and place a significant financial burden on the Service. The cost of enrolling personnel, providing logistics, and sustaining participation abroad is very high and cannot be maintained consistently in the long term. Relying on foreign programmes also limits the number of personnel who can access critical training opportunities, as budget constraints often restrict enrolment. According to the respondent, this dependency is not sustainable and could hinder the NAF’s ability to develop a self-reliant and technologically competent workforce. Establishing and upgrading indigenous training facilities would reduce costs, expand access, and ensure that training is tailored to the specific operational requirements of the NAF. Developing local capacity is therefore essential for long-term sustainability, operational readiness, and strategic autonomy in manpower development”
(Interview, 1000hrs, AFIT Kaduna, 2024).

These comments reinforce the survey findings, particularly the issues of funding constraints, outdated curriculum, and insufficient local training facilities.

Interpretation of Findings

The findings suggest that manpower training and development in the NAF is constrained by financial, infrastructural, and institutional factors. The inability to regularly upgrade training programs and facilities affects the operational readiness of personnel. These challenges align with existing literature, which emphasises the importance of adequate funding, updated training curricula, and policy implementation in effective manpower development (Akinbode, 2019; Okonkwo & Uche, 2021). Based on the empirical evidence gathered from questionnaires and interviews, Research Assumption Three is confirmed. There are indeed multiple challenges to manpower training and development in the NAF, ranging from inadequate resources to ineffective policy implementation. Addressing these challenges requires increased investment, policy reform, and modernisation of training infrastructure.



1.7 Conclusion and Recommendations

Manpower training and development remain critical pillars for ensuring the operational readiness, combat capability, and professional growth of the Nigerian Air Force. In today's dynamic security environment, marked by unconventional threats, rapid technological advances, and the need for adaptive warfare strategies, effective manpower development is not merely a support function but a strategic necessity. This study, therefore, investigated manpower training and development in the NAF with particular emphasis on the Air Training Command (ATC) between 2005 and 2022. The research was designed to examine the adequacy, effectiveness, and challenges of manpower training and to propose strategies for enhancing personnel development in the Service.

The findings revealed that manpower training is central to operational effectiveness and professional competence. The ATC, together with institutions such as the Air Force Institute of Technology (AFIT), has laid a solid foundation for manpower development, demonstrating the NAF's commitment to building a mission-ready workforce. However, several critical challenges were identified. Chief among these were inadequate budgetary allocation, out-dated curricula, overstretched infrastructure, limited access to training opportunities, weak monitoring and evaluation systems, and shortages of qualified trainers. In addition, mismatches between training and deployment led to instances of under-utilisation of trained personnel, which negatively affected morale, retention, and the overall return on training investment.

Overall, this research contributes to the broader discourse on military human resource development in Nigeria by stressing that manpower training in the NAF is a strategic imperative for national defence. It highlights the need for regular curriculum reviews, improved budgetary allocation, modern training infrastructure, recruitment and retention of highly skilled trainers, greater use of technology-driven and simulation-based methods, and strengthened international collaboration. Addressing these systemic weaknesses will enable the NAF to build and sustain a skilled, adaptive, and professional workforce capable of meeting both current and future defence challenges.

Based on the findings and conclusion, the following recommendations are made:

- i. Incentive structures such as improved career progression pathways, allowances, and recognition programmes should be designed to retain highly skilled trainers and technical staff.
- ii. **International Collaboration.** The NAF should strengthen partnerships with reputable international air forces and defence institutions through exchange programmes, joint exercises, and collaborative research in emerging technologies. Such engagements would enhance interoperability and expose personnel to global best practices.
- iii. **Future Research Recommendations.** Future research should examine the comparative effectiveness of local versus foreign training programmes for NAF personnel, with a view to optimizing cost-effectiveness and long-term sustainability.



- iv. Scholars should also investigate the role of emerging technologies (AI, drones, cyber-defence) in reshaping manpower training in African air forces.

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