



Transformation of Indonesian Army Personnel to Produce Experts Soldiers in the Field of Technology

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Abstract

The development of a fast-moving and dynamic strategic environment has an impact on the increasing situation of tension between countries. The visible phenomenon is the atmosphere of increasing the strength of the Armed Forces in regional countries (Arms Race) which then makes the threat dimension increasingly multipolar. On the other hand, the regional security situation, especially in Indonesia, is characterized by an increase in terrorism activities and other dangerous additives (Drugs) into the country, and boundary disputes related to the struggle for the use of increasingly massive natural resources. Flowing from the development of the strategic environment that gave birth to the complexity of threats to the sovereignty and integrity of the Republic of Indonesia. The study objective of this research is to provide advice to the leadership of the TNI AD regarding the transformation of TNI AD personnel development. So that this research uses the method of direct observation of the field. Besides observation, this research also uses the literature study method. Based on research results, obtained research results in the form the Army's personnel development has not been able to answer the dynamics of the strategic environment, the nature of threats, and organizational needs. Thus, it is necessary to make arrangements, especially in the recruitment system, education, and career development.

INTRODUCTION

The development of a fast-moving and dynamic strategic environment has an impact on increasing the situation of tension between countries. The visible

phenomenon observed is the atmosphere of increasing the strength of the Armed Forces in regional countries (Arms Race) which then makes the threat dimension increasingly multipolar. The United States-China power competition is the most closely watched aspect of global defense issues. Although China continues to increase its military strength and the United States reduces the value of its defense budget, the United States is still in control of global defense and the Asia Pacific (Barthos, 2009). The development of the strategic environment in the East and Southeast Asia region is specifically characterized by the dominance of China's economic power with the development of the quantity and capacity of its Armed Forces. Specifically in the Southeast Asian region, there has been an escalation of conflict in the waters of the South China Sea between China and the Philippines, Vietnam, Malaysia, and Brunei. The four conflicted countries feel abandoned by their fellow Association of Southeast Asian Nations (ASEAN) members. The four countries hoped for a firm stance and ASEAN condemnation of China's aggressive attitude in the disputed area. As a result, Malaysia and Singapore as members of the Five Power Defense Arrangement (FPDA) increased regional cooperation with the United Kingdom (the UK) and Australia. They also increased the intensity of military activities in the region and increased the capacity of their armed forces.

On the other hand, the regional security situation, especially in Indonesia, is characterized by an increase in terrorism activities, an increase in the supply of narcotics and other dangerous additives (drugs) into the country, and boundary disputes related to the struggle for the use of increasingly massive natural resources. In short, Indonesia's national security threats have now transformed into multipolar and complex. The scenario of security threats to the integrity and sovereignty of the state is a combination (hybrid) between conventional warfare and irregular warfare (unconventional). Even security war issues such as cyber-attacks as an improvised form of information warfare are increasingly surfacing in social media, as biological and chemical attacks in the form of viruses and vaccines, and even explosives with powerful categories approaching nuclear. Predictions of the direction of threats that have only been predicted from the northern axis countries have also developed from the southern direction which has the potential to come simultaneously to compete for the carrying capacity of food sources in the equatorial region (Indonesia).

Responding to the increasingly massive dynamics of security threats that have the potential to threaten the sovereignty and territorial integrity of the Unitary State of the Republic of Indonesia (NKRI), the Indonesian Army leadership is determined to intensify the increase in strength and defense equipment. The work program of the Indonesian Army Commander is realized, among others, in the form of (1) the development of four outer islands as a strategic integrated Army base, (2) the priority of integrated Army strength to support control of national air and sea territory, (3) development of integrated and modern Army Control Command System (*Sistem Komando Pengendalian* or Siskodal) with increased interoperability of defense equipment and development of Army cyber units, (4) modernization of defense equipment capable of overcoming two trouble spots simultaneously and one Army force as a reserve, (5) increased territorial

activities with Territorial Raids (*Serbuan Teritorial* or *Serter*), and (6) increased professionalism of soldiers.

The Indonesian Army Commander's policy was then elaborated by the Army Chief of Staff in the form of unit structuring, organizational development, and rematerialization of Army defense equipment, which was accompanied by the preparation of reliable and competent soldiers, both as managers, operators, and technicians. The preparation of Army human resources is one of the personnel functions whose complexity requires a long time and large budget support to become a vital asset, which directly affects the implementation of the main tasks of the Army. Flowing from the development of the strategic environment that gave birth to the complexity of threats to the sovereignty and integrity of the Republic of Indonesia, the increase in the strength of the armed forces in the region must be balanced with the development of unit titles and Army defense equipment and the preparation of soldiers as reliable and competent human resources.

This research will discuss the improvement of the professionalism of Army soldiers and civil servants in the field of personnel, with restrictions on the discussion: recruitment system, education development, career development, and separation and distribution. Some of the problems in the personnel sector that will be discussed regarding the preparation of reliable and competent Army human resources include (1) the recruitment system of Army soldiers and civil servants who have not been touched by the need for the development of strength titles, (2) the Army education program which has not been adjusted to the needs of the organization and the development of science and technology, (3) career development of soldiers and civil servants who have not been adjusted between personnel competencies and their fields of work/positions within the Army, and (4) separation and distribution of reliable and competent Army soldiers and civil servants according to their expertise. The study objective of this research is to provide advice to the leadership of the TNI AD regarding the transformation of TNI AD personnel development.

METHODS

The method used in this research is the observation method. According to Sudjana & Ibrahim (2001), observation is the systematic observation and recording of observed symptoms. Observation techniques systematically observe and record the phenomena being investigated. In a broad sense, actual observation is not limited to observations made either directly or indirectly (Singarimbun & Effendi, 1995). Observation is a data collection method in which researchers or their collaborators record the information they observe during the research (Gulo & Hardiwati, 2002). As understood above, the observation method can mean a way of collecting information through direct observation of situations or events in the field (Fathoni, 2011).

In this research, the observation method is complemented by the literature study method or literature review. A literature review is a comprehensive review of the research conducted on a particular topic, the purpose of which is to show the reader what is known and what is not known about the topic, to seek justification for the

research conducted or ideas for further research (Denney & Tewksbury, 2012). Literature studies can be obtained from various sources such as newspapers, books, documentation, the Internet, and various libraries. The literature study method consists of a series of activities related to collecting library data information, reading and recording, and managing materials for writing. The type of writing used is a literature review that focuses on the results of writing related to the topic or variable of the writing. This literature review determines the writing topic and formulates the problem before going to the field to collect the necessary information (Suhairi, Nasution, Simamora, Hutapea, & Hutasuhut, 2022).

This research will use a qualitative approach with a single case study method to examine the transformation of the Indonesian Army (TNI AD or *Tentara Nasional Indonesia Angkatan Darat*) personnel development to produce soldiers who are experts in the field of technology. Research participants will consist of TNI AD personnel in charge of technology and technology experts. Data collection will be carried out through interviews with research participants and documentation related to the technology-savvy personnel development program. The data collected will be in the form of qualitative data which will be analyzed using content analysis techniques.

The research procedure will include identifying the training program for TNI AD personnel who master technology and the performance of TNI AD personnel in the field of technology, interviews with TNI AD personnel and technology experts to find out their views on the transformation of personnel development that is being carried out and how this transformation can be improved to produce soldiers who are more skilled in the field of technology, analysis of data collected using content analysis techniques, identification of obstacles and challenges that may be faced in achieving the goals of transforming the development of TNI AD personnel, and recommending steps that can be taken by the TNI AD to ensure the success of this transformation. Research validity will be maintained by conducting data triangulation, while research ethics will be maintained by adhering to research ethical principles, including obtaining research participant consent and maintaining the confidentiality of the data obtained.

Transformation

Transformation is a process of gradual change until it reaches the final stage, changes made in response to the influence of external and internal elements that encourage changes from previously known forms through a process of repeated multiplication (Widnyani, Astitiani, & Putri, 2021).

Coaching

Generally, coaching is used to enhance a planned lifestyle. Everyone has certain goals in life and wants to achieve these goals. When the meaning of life is not achieved, people try to reorganize their lives (Haeriah, 2020).

Cyber

Cyberspace is a space where communities connect using networks (e.g. the

internet) to carry out various daily activities (Nugroho, 2020).

Cyber Attacks

Cyber attacks are actions, words, and thoughts made intentionally or unintentionally by any party, with any motive and purpose, anywhere, targeting electronic systems or their contents (information) and devices that are highly dependent on technology and networks on any scale, against essential and non-essential targets in the military and non-military sectors that threaten state sovereignty, territorial integrity, and national security (Permanasari, 2018).

Technology

The concept of technology is the application of scientific knowledge for practical purposes in human life or in the modification and manipulation of the human environment. Many people today are very dependent on technology, and even technology can be a basic need for everyone. The existence of technology can facilitate humans in carrying out various activities to be more efficient (Rahadian, 2017).

Recruitment

Recruitment is the process of finding and selecting prospective employees for a particular position or position. The key to creating professional human resource management is the recruitment, selection, training, and development of potential employees. It is not easy to find qualified employees. This recruitment process is important in determining whether a candidate can occupy a position in the company or not (Hartoko, 2016).

Soldiers

Soldiers are Indonesian citizens who meet the requirements stipulated in laws and regulations and are appointed for military service by authorized officials, namely in Article 21 of Law of the Republic of Indonesia Number 34 of 2004 concerning the Indonesian National Army. Army soldiers consist of soldiers of the Indonesian National Army Army, soldiers of the Indonesian National Army Navy, and soldiers of the Indonesian National Army Air Force who carry out their duties in each force or combined under the leadership of the Commander (Octavianus, 2018).

RESULTS AND DISCUSSION

Generalist and Specialist Recruitment Systems

Humans are objects of development that cannot be replaced by other means, even though tools with sophisticated technology have been found that can replace humans in work, they are only a way to increase efficiency and effectiveness. Therefore, the position of humans remains in their original position as subjects who are responsible for planning, implementing, and assessing their actions (Tunggal, 1993). The current recruitment system for Army soldiers and civil servants is still passive, meaning that young people as citizens must come to register as prospective soldiers and civil

servants. This system can only select from prospective soldiers and civil servants who register, meaning that it only applies to those who are aware of the announcement of the recruitment of Army soldiers and civil servants. Especially for the recruitment of Army soldiers. Currently, the socialization has been assisted by Territorial Command Unit, but this system is still not optimal.

In the future, an active selection breakthrough is needed to directly come to schools and regions to remote areas, so that the potential of the nation's best sons and daughters, from urban areas to remote areas, can be recruited properly. Meanwhile, specifically for the recruitment of Army civil servants, because do not carry it out directly, but it is centralized in the Ministry of Defense and Ministry of Administrative Reform and Bureaucratic Reform of the Republic of Indonesia, we need to develop specific criteria and abilities for civil servant candidates needed by the Army. This must continue to be closely coordinated so that there is no accumulation of Army civil servants who are not capable.

Generalist and specialist officers are complementary elements in the development of soldier resources. Generalist ability is the ability to master general knowledge directed at mastering modern science and technology which is the basis for carrying modern defense equipment and developing operations against modern warfare. The provision of soldiers with generalist and specialist abilities must be carried out in stages and levels by the Army soldier development cycle, namely provision, education, use, maintenance, and separation. The provision of generalist Army officers has been carried out through education at the Military Academy to form future Army leaders. The focus of education at the Military Academy is centered on the development of general military knowledge, character building, and leadership that is instilled gradually, acts, and continues so that in the future the alumni of the Military Academy can sit in command and staff positions. Meanwhile, the provision of specialist officers aims to fulfill vacant fields that are not obtained from direct Military Academy input such as legal experts, technology experts, computer or Information Technology, and medical experts, as well as in other fields that currently and in the future have urgency to deal with.

The development of generalist abilities is provided through formal education channels within the Army and universities at home or abroad. Meanwhile, specialist abilities are the ability to master special and in-depth disciplines of science and technology, such as IT soldiers with levels ranging from operators, and analysts to computer programmers to face modern wars that require special abilities. Specialist education can be provided through education inside and outside the Army organization. The acquisition of specialist officers can be developed not only through the Career Soldier Officer route but also by selectively recruiting young people who are still actively studying, according to the needs of the Army organization, to college. Those who are willing and selected through selection are then given scholarships to complete their education. Recruitment of specialist officers can even be carried out by competent specialized agencies such as in the fields of nuclear, biological, and chemical experts (NBC), information technology and cyber security experts, and other fields needed by the Army. Especially for specialist officers, more flexible rules are needed to

accommodate certain communities that are needed, of course, with special compensation benefits as well. Information security experts, for example, can be given different work compensation allowances according to their level of expertise, as measured by their level of education and length of service.

In the fulfillment of executive level personnel (operators), namely the level of non-commissioned officer, *Tamtama*, and civil servants of Group II, it is hoped that they will no longer have general abilities, but will have special and reliable abilities in their respective fields, at least at the basic level and capacity building can be carried out gradually after becoming organic. Currently, many non-commissioned officers, enlisted officers and civil servants of the Indonesian Army Group II are still generalists, even though the position in this position requires more special or specialized abilities in the field of work they do. The recruitment of non-commissioned officers and *Tamtama* specialists needs to make a breakthrough to establish cooperation with superior vocational high schools, both public and private. Non-commissioned officers and superior enlisted personnel with this special ability are trained to become skilled and reliable personnel, to be placed in vital objects of units that require mastery of high technology. Recruitment activities are carried out starting from career development promotions, benefits or welfare, and separation or channeling that provide a good future picture. This recruitment is also not only in big cities but continues to remote areas, outer islands, and borders. This recruitment is specifically for non-commissioned officers and enlisted men who grew up in rural areas, borders, and outer islands to find soldiers with natural field capabilities for specific tasks. The special abilities of this non-commissioned officer and enlisted men are sharpened by their first assignments in the best combat units. Once they have gained sufficient experience, they are returned to their respective regions to become excellent noncommissioned officer village supervisors (*Babinsa* or *Bintara Pembina Desa*) with good territorial intelligence and combat experience.

The involvement of the Territorial Command Unit is needed especially in remote areas, borders, and outer islands. The noncommissioned officer village supervisor or *Babinsa* is given the responsibility to observe the potential young generation. They are then nurtured and given knowledge so that they are interested and willing to become Army soldiers. Capable and good-looking noncommissioned officer village supervisor will also be a special attraction for these prospective soldiers.

Technology-based Education Program

The current Army education program is still guided by the old curriculum. General development education (*Pendidikan Pengembangan Umum* or *Dikbangum*) and specialization (*Pendidikan Pengembangan Spesialisasi* or *Dikbangspes*) need structuring and revision. Revisions are focused on the development of threat estimates, the development of the current Army defense equipment, and the development of existing science and technology. Facing the 21st century, UNESCO through "The International Commission on Education for the Twenty-First Century" recommends sustainable education (lifelong) which is implemented based on four pillars of the learning process,

namely: learning to know (learning to master knowledge), learning to do (learning to know skills), learning to be (learning to develop oneself), and learning to live together (learning to live in society) (Marwansyah, 2014). To be able to realize the four pillars of education in the current era of information globalization, educational programs are directed toward the mastery and application of Information and Communication Technology. The application of technology such as computer skills is a fundamental demand today. Almost all defense equipment technology, navy staff, command schools, and information systems use computers as the main controller. Current Education must be directed to accommodate the needs of the Army organization.

Technology-based education and according to organizational needs must be pioneered by the Army, considering that currently the fulfillment of defense equipment is technology-based with precision firing, precision mobility, and precision information. The technological precision base has now become the standard for infantry light weapons, field artillery (Armed or *Artileri Medan*) rockets, and air defense artillery (Arhanud or *Artileri Pertahanan Udara*) missiles, tank mobility with BMS (Battle Management System), Aircraft and their navigation and weapon systems as well as information systems and integrated operations command and control center (Puskodalops or *Pusat Komando Pengendalian dan Operasional*). All of these pieces of equipment require proficient and professional crews. So, the education system for officers, non-commissioned officers, and enlisted men as well as civil servants of the Army must be directed towards the applicative abilities, and skills needed in the field by the role of weapons and their respective branches.

The Army needs to develop cooperation with relevant ministries and agencies, especially in terms of developing future technological capabilities such as information technology and cyber. Although organizationally, the new cyber unit is accommodated at the Army Headquarters level, the cyber threat is real and an ad-hoc team must be formed to implement its countermeasures. Soldiers with basic computer skills can be trained and educated in collaboration with the Ministry of Communication and Information, especially the Indonesia Security Incident Response Team on Internet Infrastructure/Coordination Center (Id-Sirti), a college that handles it, and community organizations such as FTII (Federation of Indonesian Information Technology). There needs to be a breakthrough in cooperation with ministries, institutions, and related agencies, especially formal education in the context of developing the knowledge of Army personnel. Cooperation in terms of formal education is very influential in developing personnel not only the target of knowledge and skills is increasing, but legally pocketing certification from authorities such as colleges or related institutions. This will be a provision after duty for these personnel.

Competency-based Career Development.

From the explanation of the recruitment system above, education and training, to the career development of Army soldiers and civil servants, must be an interrelated and uninterrupted cycle. The Army Personnel Staff must have data on individuals, especially officers and civil servants of Group III since they were first recruited and educated with

all the data on their strengths and weaknesses. The data is used as the basis for developing the career of these personnel. So the development of his career is storied, gradual, and continuous by his linear competence (Simamora, 2004). The career development of Army personnel is often cross-specialized, this can provide valuable experience, but on the other hand, it can affect the lack of focus and depth of expertise of these personnel, especially if there are several cross-specializations they have. So, the career of soldiers, especially officers, should be pursued as much as possible linearly, and if cross-specialization is a maximum of 2 specializations, for specialist officers it is better to focus on one in-depth field.

The career development of Army personnel in the future must be based on competence. This means that every soldier and civil servant of the Indonesian Army must develop their careers according to their abilities, talents, and competencies. This is developed from the beginning of recruitment to the development of knowledge and skills. Generalist soldiers will be developed dynamically and move around to enrich their experience and build their abilities and leadership (Hikam, 2014), but the principle of linear specialization competence is still considered. But for specialist soldiers, career development tends to be static and linear, so it is necessary to arrange a position space that can be used to advance in rank a maximum of two times, and a welfare approach (rank, position, allowances, and other compensation) for the special abilities (specialization) they carry.

Segregation and Channeling According to Competency

Currently, many soldiers and civil servants of the Indonesian Army who have special abilities but have entered retirement cannot be channeled properly, so their abilities cannot be developed optimally after retirement. Even many who are still active want to switch status or change professions are still hampered by regulations that do not support them. The limitations of this personnel are faced with requirements regarding formal education that must be possessed for distribution to other ministries or institutions. This is a factor inhibiting the distribution of Army personnel to other ministries or institutions. However, the above problems become another story since the initial recruitment of the soldiers and civil servants of the Army have basic competencies in their fields. Then at the time of development and use through career stages and formal education both within the Army or outside such as the Ministry of Defense and college which are stratified and continue according to their linear competence. So as long as the personnel is on duty, they are not only used but also formally fostered and developed according to their competence, which will then be ready to be distributed to ministries, institutions, or other agencies.

Likewise, ministries, institutions, and other related Agencies that have carried out cooperation with the Army, both in the development of knowledge (education) and other tasks, will more easily accommodate soldiers and civil servants of the Army by their competencies and duties faced with organizational needs in the ministry, institution, or agency.

CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS

From this study, and based on the results of the Indonesian Army/TNI AD personnel meeting, it can be concluded that the Army's personnel development has not been able to respond to the dynamics of the strategic environment, the nature of threats, and organizational needs. Thus, there is a need for structuring, especially in the recruitment, education, and career development systems. Several recommendations need to be developed, among others (1) the recruitment system needs a breakthrough for generalist and specialist personnel, (2) the education program needs to be developed and revised to be more technology-based and to the needs of the Indonesian Army organization, (3) the career development system must be revised and developed by the competencies of soldiers and civil servants of the Army, (4) there needs to be a breakthrough in cooperation with ministries, institutions, and related agencies, especially the distribution of Indonesian Army personnel.

The Indonesian Army must be able to prepare itself against growing global cyber threats by developing its personnel. Several recommendations can be made, including improving the quality of education and training of personnel in the field of technology and cyber security. The Indonesian Army can also increase collaboration with related institutions, such as educational institutions and technology companies, to acquire new resources and knowledge in the field. In addition, the Indonesian Army could establish a special recruiting program to attract candidates with backgrounds and skills in technology and cybersecurity. To increase the motivation of personnel in developing their skills, the Indonesian Army can create a system of rewards and incentives for personnel who have superior technology and cybersecurity skills. Finally, the Indonesian Army could set up a dedicated training center focused on developing technology and cybersecurity skills to provide regular training and develop the skills of personnel in the field. By implementing these recommendations, the Indonesian Army can produce soldiers who are skilled in technology and able to deal with growing global cyber threats. This research is limited to TNI AD personnel only

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