The Role of Education and Training Institutions in Preparing Competent Human Resources Development

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Abstract:

The need for human resources in the world of aerospace is still large, while a number of cases show service quality that is not in line with expectations. This study will fill gaps about competent human resource needs. The purpose of this study is to identify and analyze the efforts of educational and training institutions in preparing competent human resources, and examine how educational and training institutions overcome obstacles in preparing human resources in the field of aviation in Indonesia. The research method is descriptive normative with a qualitative approach. The data used are secondary data, which is set forth in the form of a logical and systematic description linking the facts with the applicable regulations. The results of this study indicate that the role of education and training of workers is very important to improve human resources, so that they better understand their job responsibilities. Therefore competent and high performance human resources will make a positive contribution to the organization. Work discipline needs to be done in order to achieve maximum service, so that it has an impact on customer satisfaction.

I. INTRODUCTION

Education and training orientation will increase understanding and knowledge in practical application lessons. The education and training orientation program not only introduces trainees to the actual practice environment, but is also important in enabling students who are trained to be passionate about their future careers (Abdi, Osuga, & Muiruri, 2016). This plays an important role in competency improvement. Competent, productive and committed human resources are the main contributing factors in achieving organizational strategy (Rahimnia & Kargozar, 2016).

In accordance with the theories of Kaplan and Norton (2004) that the perspective of learning and growth is the basis of organizational plans. So it is necessary to create an effective management system and continue to improve it. Study of Wu, Lin, and Chang (2011) in their study mentioned that the focus on employee satisfaction, ability and knowledge has the highest priority in counseling activities. The main cause in achieving education and excellence of high quality human resources is having competent human resources.

According to the International Civil Aviation Organization (ICAO), the human resource

requirements for pilots by 2030 reached 980,799 people, while the need for aircraft technicians was 1,164,969. In Indonesia, the need for new pilots every year reaches 600 people, while the need for aircraft technicians reaches 800 people per year. This condition creates greater opportunities for people who have competence in the field of aerospace. The efforts of educational and training institutions in preparing competent human resources continue to be improved, and how education and training institutions overcome obstacles in preparing human resources in the field of aerospace in Indonesia, this requires a more in-depth study.

Educational and training institutions in the framework of developing human resources in the aerospace field are institutions that stand as elements of carrying out the duties and functions of the air transportation service institution. This institution is under and is responsible to the Minister of Transportation. In carrying out its duties and functions, educational institutions developing human resources in the aerospace field are expected to be able to produce competent human resources in the air transportation sector through education and training. The competent human resources of the air transportation sector is not only on a national scale, but also on an international scale.

According to Mathis and Jackson (2011), human resources that develop well, will create perfect personal qualities. An institution that has quality human resources and has high loyalty, will develop rapidly to perfection. The soul of HR in an institution reflects the soul of the institution to be able to grow well. Someone who has good morals is a person who can distinguish between the good and the bad in daily life in the work environment. When associated with religiosity, such human resources will do more, because there is hope or reward from Allah, and consciously avoid evil actions.

The role of educational institutions and training is very important in relation to efforts to develop human resources in general, and employment development in particular. In the field of national aerospace, educational and training institutions carry out their duties and functions as providers of education, research and community service in the aerospace field that are expected to produce skilled workers and be able to compete on the international scene, which needs support from qualified lecturers, educational facilities keep abreast of technological developments, and adequate sources of funds and management of education with management capable of facing challenges in the future.

The STTKD (College of Aerospace Technology) is one of the institutions of education and training in the field of aerospace that places serious emphasis on managing the education system. Higher education can develop the synergy of the academic community and also the creative thinking ability of educators by providing lecture material. Academic atmosphere without pressure and on their own accord from the students, so that the lecturer puts confidence in learning. In addition, both lecturers and students are easy to interact to express what is thought. With this, students will be confident to be ready to go into the field of aerospace, of course their talents and potential will also be channeled.The purpose of this paper is to fill gaps in the management of human resources in aerospace in Indonesia, by identifying and analyzing the efforts of educational and training institutions in preparing competent human resources, and presenting how educational and training institutions overcome obstacles in preparing competent human resources.

II. LITERATURE REVIEW

1.1 Human Resources

Dessler and Varrkey (2005) state that human resources are 'power' that comes from humans. That

power can also be called energy. Power, ability or strength is also found in other natural elements such as water power, steam power, wind power, solar energy. When applied to animals such as horses, it can be a measuring device of strength or force such as haulage, or thrust, commonly called a horsepower. So that when used on humans is often referred to as labor, not manpower. In Indonesia the department that deals with this matter is referred to as the Department of Labor not the Department of Manpower.

According to Mathis and Jackson (2011), human resources are referred to as human power (energy and power). Resources are sources of energy, abilities, strengths, expertise possessed by humans, also possessed by other organisms, for example: in animals, plants. Humans as planners, who organize, direct, and control a development in a company or organization. Therefore, humans also enjoy the results of the evaluation, which greatly influences the success of development, because humans have a very decisive role (Qamari, Dewayani, & Ferdinand, 2019).

Pynes (2008) explains the notion of human resources can be divided into two, namely human resources at a macro and micro level. The definition of macro human resources is the number of people of productive age in a country, while the understanding of micro human resources is more conical in individuals working in an institution. Human resources are employees who are ready, willing, and able to contribute to the achievement of organizational or company goals.

1.2 Human Resource Development

The organization will always develop and change according to technological advancements, market demands, and the existence of globalization. The study of organizational development and change has always been an interesting topic, therefore organizations need to prepare their human resources

so that they can easily adapt quickly to changes in the environment, in order to survive (Rafferty, Jimmieson, & Armenakis, 2013; Udin, 2020). Hoobler, Lemmon, and Wayne (2014)explained that organizational development is the experience, skills, or education gained by individuals, which is then used when doing work and considered for future career opportunities. Those who have the opportunity to learn new skills and get sponsors from strong people will receive investment rewards, both for the organization and for themselves.

Development according to Werner (2014) is a process of emphasizing improving the ability to carry out new tasks in the future. Noe, Hollenbeck, Gerhart, and Wright (2007) defines development as a process of how management gains experience, expertise, and attitudes to be or achieve success as leaders in the organization. Human resource development is a process in order to prepare human resources to quickly adapt to the environment, where management must prepare with education and training to become competent human resources.

1.3 Competent Human Resource

Competent human resources are the goal of educational institutions and are the most important part in capacity building. One form of development of educational competence in Indonesia is to improve the competence of human resources with several competency characteristics that are oriented to the aspects of entrepreneurship, sensitivity and responsiveness, having insight into knowledge, skills, and attitudes that are relevant to vision, mission and organizational work culture (Bhattacharya, Gibson, & Doty, 2005). These competency characteristics are very important in determining organizational success. In addition it will achieve its mission by paying attention to the linkages in terms of selection, succession planning in various fields, one of which is in the aerospace field.

To obtain competent resources a training and development program is needed, of course it must be clearly known what it wants to achieve. One of the goals to be achieved is how to teach certain skills, both soft skills and hard skills. It should also be noted that in organizing training and development two interests can be achieved simultaneously. The first is the personal interest of the employee, with the results of the education and training he attends, simultaneously the quality of skills improves better. The second, of course, is of interest to the institution, that by organizing training and developing human resources will increase the expected productivity.According to Suparni (2018), the management of human resources through educational and training institutions is very important to improve the quality of human resources themselves and better understand their job responsibilities, so that qualified human resources will make a positive contribution to the company. Education and training can improve employee knowledge, abilities, skills and work attitudes so that they can play a role in development, including improving the quality of programming development, increasing the effectiveness of programs, increasing facilitation and improving products.

Effective human resource management requires large amounts of information about people and their knowledge needed at all levels of work. In this perspective, a key transformation in the field of human resource management consists of redefining key job concepts into a set of individual and organizational unit competencies into a core competency architecture (Corallo, Lazoi, Margherita, & Scalvenzi, 2010).

1.4 Competence in Educational and Training Institutions in the Aerospace Field

Human life in the 21st century is directed towards the creation of a civil society that is a society that recognizes the rights and obligations of each member and is jointly responsible for humanity. Humanity builds a civil society where peace and justice become the highest values, so as to achieve excellence.

The advantage referred to is participatory excellence, meaning that superior people are people who actively participate in fair competition to look for the best(Udin, Handayani, Yuniawan, & Rahardja, 2019; Yuniawan, Putri, & Udin, 2017). Participatory excellence is directed to explore and develop all individual potential that will be used in a competitive life. Fair competition does not mean killing one's fellow human beings, but rather the advantages possessed and developed by someone, aimed at achieving not only personal profit, but also for the benefit of the organization.

Participatory superior human development is the fostering of cooperation in a more advanced sense helping the weak and so on so that the gifted will develop more highly. While weak human resources can be empowered so that they can participate in a competitive life. Therefore, in aerospace education and training participatory components are needed. Mertins, Ivanova, Natalinova, and Alexandrova (2016) details some of the capabilities and competency content needed by someone to be competent in the aerospace world, as presented in Table 1.

Table-1: Professional Competencies Needed in the Aerospace Field

Abilities (skills) needed	Types of competencies
Cooperation	Confidence, sociability
Corporate spirit	Loyalty, promotion of corporate values, obey the corporate

	standards
Creativity	Ideas generation
Focus on success	Persistence, obedience the quality standards
Independence	Independent opinion, confidence
Leadership skills	Activity, leadership, colleagues respect
Motivation	Positive attitude to work, energy
Oral communication	Oral literate speech, persuasion skills
Perception of innovation	Flexibility, initiative
Planning & organization	Accuracy, punctuality, control, planning
Professional skills	Tutorship, professionalism, self-development
Stress resistance	Attitude towards failures, work under pressure, emotional stability
Teamwork	Ability to cooperate, emotional support
The ability to analytical thinking	Analysis, information search
Writing skills	Informative presentation, literate written speech

Source: Mertins et al. (2016)

III. RESEARCH METHOD

This research method is descriptive normative with a qualitative approach (Sekaran & Bougie, 2016). This method is used to identify and analyze the role of educational and training institutions in the aerospace field by looking at the curriculum of education and training that is implemented, in the framework of preparing competent human resources until 2030.

Furthermore, the informant or subject in this study is the Chairperson of STTKD, a data resource through interviews and observations. In addition, interviews were conducted with lecturers and STTKD employees, to explore information related to the curriculum and facilities and infrastructure to support the education and training process conducted. The data obtained is basically a level of data that is analyzed descriptively qualitatively, that is the data collected is contained in the form of a logical and systematic description that links the facts with the applicable regulations. The analysis will be written in the form of sentences that are dense, concise and clear. Conclusions drawn, carried out by the inductive method, which is a method that deals with the problem examined from the rules or special principles that have been applied.

IV. RESULT AND DISCUSSION

1.5 The efforts of educational and training institutions in preparing competent human resources in the field of aerospace in Indonesia

Revitalizing the role of HR in organizational activities has caused a shift in the view of HR that human beings are no longer considered as costs, but are considered as assets (capital). Employees are not only focused on competent, but rather are encouraged to work together for the common good. This is a consequence of the management paradigm shift as Alfin Tofler said in entering the third wave. Increasing the role of education is emphasized in the

efforts of: 1) the expansion and equity of education, 2) the quality and relevance of education, 3) governance and accountability. The three programs are efforts to develop education equally for the entire territory of Indonesia, so that lagging in the field of improving the quality of human resources can be improved so that it can balance progress in the Asia Pacific countries. Until now, the three programs are still considered not optimal. With the increase in the education budget, it is hoped that these three programs can be realized in a fast timeframe. Only, the obstacles in its implementation related to bureaucratic rules that have not yet been reformed. Decision making mechanisms, fund launch mechanisms and financial accountability are often administrative obstacles, which can obstruct education reform in Indonesia.

Furthermore STTKD efforts as educational and training institutions in the aerospace field, develop themselves by providing Aerospace Management Study Programs. Aerospace Management has a duty to regulate and plan aerospace companies, regulate air transportation systems in accordance with the development of aerospace technology. The Air Transportation Management Study Program at STTKD aims to form mid-level skilled workers who will work in aviation service companies including Airport Management Companies, Aviation Companies, Ground Handling Service Companies, Travel Service Agencies, Air Cargo Service Companies and have the opportunity to work in government.

The curriculum is structured based on tasks in the Aviation Company and Airport Management units with national and international standards. The Air Transportation Management Study Program provides cadets with knowledge about Aviation Companies, Airport Management Companies, Ground Handling Management both in the ramp area and aircraft handling, procedures for handling passengers and goods transported by aircraft, planning and marketing of airline products, handling air cargo. In addition, there are also a number of courses on Security and Safety at Airport, Immigration, Customs, Quarantine, plus basic sciences that support work such as English, Computer Accounting, Statistics, and Economics.

Implementation of the Job Training is carried out at the end of the STTKD study period, in collaboration with the Airport Manager. Aviation Company, Ground Handling Service Company where the cadets can practice in reality what has been given on campus to the place of practice and can later be accounted for by making reports and can also be used as material for writing the Final Project at the end of the study at STTKD.

The results of interviews with the Chairperson of the STTKD and also the lecturers who gave a statement that the STTKD campus has another excellent study program namely Transportation Management. The management of the airline company has the duty to regulate and plan the airline company, regulating the Air Transportation System in accordance with the development of aerospace technology. The Transportation Management Study Program aims to establish mid-level skilled workers who will work in aviation service companies including Airport Management Companies, Aviation Companies, Ground Handling Service Companies, Travel Service Agencies, Air Cargo Service Companies and opportunities to work in government.

The curriculum is structured based on tasks in the Aviation Company and Airport Management units with national and international standards. In the Transportation Management Study Program the cadets are equipped with knowledge about Aviation Companies, Airport Management Companies, Ground Handling Management both in Pasasi and in Ramp Areas and Aircraft Handling, ways of Handling

Passengers and Goods transported by airplane, Planning and Aviation Product Marketing, Air Cargo Handling. Security and Safety at airports, Immigration, Customs, Quarantine, plus basic knowledge that supports work such as English, Computer Accounting, Statistics and Economics.

Implementation of the Job Training at the end of the STTKD study period in collaboration with the Airport Manager. Aviation Company, Ground Handling Service Company where the cadets students can actually practice what has been given on campus to the place of practice and can later be accounted for by making reports and can also be used as material for the Final Project at the end of study at STTKD. Furthermore, there is also the Aeronautics Study Program. The practical facilities owned by the Aernautika Study Program (Diploma 3) are quite adequate. The practicum facilities include: Production Workshop, Technical Drawing Laboratory, Engine Shop, Piston Engine and Jet Engine, and Computer Laboratory.

The Aeronautics Study Program aims to produce and create intermediate graduates in Aviation Engineering, especially aircraft engineering and maintenance technicians. In addition, graduates from this study program can also have integrity of personality, leadership spirits, and professional ethics and be able to compete in the world of work, both now and in the future. The graduates of the STTKD Aeronautics Study Program have spread and worked in several commercial airlines, such as the Garuda Maintenance Facility (GMF), Sriwijaya Air, Air Asia, and several airlines that serve charters, such as White Sky.

1.6 Efforts to overcome obstacles in preparing human resources in the field of aerospace in Indonesia

The results of interviews with the Chairperson of STTKD explained that HR has a very strategic position in the organization, meaning that humans play an important role in carrying out activities to achieve better goals and conditions. Therefore it is necessary to have adequate human resource management, so as to create competent, loyal and outstanding human resources. HRM is an effort to mobilize and manage human resources in the organization to be able to think and act as desired by the organization (Sun, Wang, & Min, 2020).

From the various fields of work that are carried out by the government apparatus, it is clear that the problem is concerning the professionalism of employees in carrying out important tasks entrusted. Each individual has different skills, the skills that exist in a person must be explored. Skills in a person can help them to improve their competence. STTKD employees and all academics starting from institution managers, lecturers, educational staff up to students, not all can have the expected skills, so that the development of human resources through educational and training institutions is expected to be able to help employees and all academics can improve their skills in working world.

Expertise is one way to support professionalism. Expertise can be obtained by someone through training, with this training makes a person become more in-depth about what is his main task, so as to increase his ability to master the field of work, especially in this field of aerospace.

Knowledge will have an impact on quality standards in a person. Quality standards refer to any quality that is directly or indirectly related to the human resources of the organization. As what has been explained in the previous section that the quality standard lies in the ability of each individual. It is the individual's ability that will influence one's development. One effort to help increase knowledge is by attending education and training programs.

The ability of someone who comes from oneself becomes the initial capital to get a certain place in an organization. For the HR development section, especially the readiness of the academic community in the aerospace field from administration to the technical department, HR is needed that can examine work carefully and thoroughly. Graduates from various STTKD study programs have added value to enter the field. In the process they also receive training that can support their ability to handle the work.

One of the supporting factors of educational and training institutions in the aerospace field is the strong will of the students. As stated by the Chairperson of STTKD through interviews that the will of a person must be well explored, so that the will can provide positive energy so as to help improve one's ability to be better. Willingness is also the basis of a person, if someone has a strong will to change indirectly all the other components follow. Thus this willpower is what drives a person to work professionally.

Discipline is also an important factor. Discipline is a rule that one must obey for self-awareness. Discipline is actually not free from the will, the willingness of a person to obey the rules that exist in the organization. Self-discipline is very big role in achieving organizational goals. This method has been successfully carried out on clients who specifically face challenges in managing human resources. The most important thing is to understand the core problem in order to prepare effective and efficient solutions.

In the field of aerospace, the Chairperson of STTKD explained that there needs to be maintenance and engagement of HR, so that one and the same goal will be achieved. Maintenance and engagement strategies that should be carried out are: First, to develop human resources as preparing individuals to assume different or higher responsibilities within the organization. Employee development is held to enhance or maximize intellectual or emotional abilities to carry out the work well than before. Employee development focuses on the long-term needs of employees in an organization. The purpose of this development is to help employees deal with any changes in the work or work environment, such as technological developments, work designs, new customers or new product markets. While the career management system is a system for maintaining and motivating employees by identifying and meeting their development needs. the importance of career development and planning career planning and development involves two processes: career planning (employee-centered) and career management (organizational-centered).

Second, career development and planning should be seen as a process that unites the interests and skills of employees with organizational needs. Career development and planning plays a major part in ensuring that organizations have a competitive and knowledgeable workforce. Career Management: is the work position of an individual he has practiced for years. Career Management is the process of making it easier for employees to better understand and develop skills and interests in order to obtain truly reliable human resources that can function for the progress of the company and for the employees themselves. The impact of career development programs is that employees will have good expectations for the survival of the company where they work. The concept of education that is not rooted in the beliefs, values, and culture of the local community makes the formation of characters less than the maximum. The concept of morality of the Indonesian people must be understood and applied, of course, based on values and culture that are believed. The values implanted must have originated from the religion that is

believed, and as stated in the state ideology, namely Pancasila. The health of the Indonesian people in the coming centuries depends on how serious the nation is to be committed to this character education. Character forms the destiny of a person and that destiny becomes the destiny of the whole society. From this character of citizens will form the character of the nation, so that the impact on the welfare of the nation.

V. CONCLUSION

The explanation about the efforts of educational and training institutions in preparing competent human resources, and examining how educational and training institutions overcome obstacles in preparing human resources in the field of aviation in Indonesia can be summarized as follows.

1. HR management with education and training programs is very important so that they better understand their work responsibilities. So that will increase competence. HR who have high performance will make a positive contribution to the organization. Work discipline needs to be upheld in order to achieve maximum service satisfaction that will be felt by consumers.

2. A bipartite or tripartite organization can be used as a forum for meetings between employers, workers, and can also involve the government as a mediator between employers and workers, which is guided by labor regulations in force in the local area. Conflict can be easily resolved if each party realizes that each job has signs that must be met by all interested parties. Dissemination of laws and regulations must be given to them so that they know and understand their respective responsibilities, so that the conflicts that occur can be resolved properly.

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