

THE EFFORTS TO IMPROVE THE QUALITY OF EDUCATORS IN NAVAL TECHNOLOGY COLLEGE (STTAL) ENVIRONMENT TO EARN EXCELLENT SOLDIER TECHNOCRATS

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ABSTRACT

Naval Technology College (STTAL) is an element of implementing and fostering a central implementing agency which is located directly under the STTAL Commander. STTAL has the main task of assisting Chief of Naval Staff in carrying out the required education for marine science and technology high schools and fostering all levels of its strength including its organic supporting facilities and infrastructure to support the main tasks of the Navy. For improving STTAL's world-class reputation, a development concept is needed. The development concept includes education, research, community service, human resources, infrastructure and facilities as well as institutional capacity. However, Human Resources (HR) plays a key role in a university, namely lecturers or educators and students. Lecturers or educators play a role in human resource development. Several efforts can be made to improve human resources, namely by increasing the qualifications of lecturers and improving the academic or research abilities of lecturers with the concept of training or mentoring, including incentives or grants. Efforts to improve the quality of educators and education personnel cannot be separated from the following important aspects, namely salaries and welfare standards that are adequate for their lives, qualification standards,

Keywords: Human Resource, Naval Education, and Naval Technology College (STTAL).

1. INTRODUCTION

1.1 Background

Based on the functions and objectives of national education as stated in Law No. 20 of 2003 (Sisdiknas, article 3). National education functions to develop capabilities and shape the character and civilization of a dignified nation in order to educate the nation's life and develop the potential of students to become human beings who believe and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent and become democratic and responsible citizens. Of course, this must be accompanied by improving the quality of educators in terms of recruitment, competence and management of human resource development.

Indeed, the most important thing in this case is the factor of educators, because no matter how sophisticated a curriculum and no matter how great the education system is without good quality educators, all of that will not produce maximum results. Educators must be able to measure the competencies that have been achieved by students from each learning process or after several units of study, so that

educators can determine decisions or treatment of these students. Is it necessary to make improvements or reinforcements, and determine the next lesson plan both in terms of material and strategic plans.

Therefore, educators are at least able to arrange test and non-test instruments. The abilities that must be possessed by educators which then become routine activities are making tests, measuring and evaluating the competencies of their students so that they are able to determine further learning policies.

Moreover, currently the biggest vision of STTAL is to be able to become one of the world-class research colleges, especially for TNI personnel, including the Navy, Air Force, Army and Police, who will benefit directly from academics and graduates. Since STTAL has become a Central Implementing Agency separate from Kodiklatal in implementing education, improving the quality of education has become a mandatory thing that must always be implemented and evaluated. This can generally be seen from the implementation of the 10 components of the Navy's education consisting of curriculum, instruction packages,

educators, education staff, students, alins/along ins, teaching methods, evaluations, educational facilities and budgets.

As a higher education official within the Indonesian Navy, STTAL has a unique, superior and strategic future prospect. STTAL has been recognized and accredited by the Ministry of Education and Culture. This shows that the existence of STTAL has been recognized as an important asset of the Navy, TNI and even the Indonesian nation.

By understanding the various opportunities and challenges ahead faced by the Indonesian nation in general and the Navy in particular, STTAL is still needed to carry out the realization of the acceleration of the transfer of technology in the field of maritime defence technology. STTAL has great potential and can be favoured to be empowered together with other components of the nation in participating in determining/influencing the direction and achievement of future national development. In order to realize STTAL as a research university, strategic steps in developing maritime defence technology need to be realized immediately.

2. LITERATURE REVIEW

2.1 Basic Concepts of Human Resource Planning

Human Resource management develops and works through a human resource management system that is integrated with other parts of a management. There are generally five functional areas in effective human resource management: staffing, HR development, compensation, safety and health, and staff relations. Planning in these five areas is absolutely necessary so that in staff provision and development, compensation systems, safety and health systems and staff relations well prepared and directed in line with organizational goals.

Human Resource Planning is a process that involves a series of activities such as forecasting or estimating, efforts to meet the organization's workforce needs in a certain period of time in the future which includes efforts to match internal and external HR with job vacancies that are expected to be needed. HR flow management and efficient use of available resources effectively. The HR flow arrangement is intended to determine certain requirements for new HR that will replace outgoing HR with resources that work effectively and efficiently.

2.2 Human Resource Planning Process

As a process, human resource planning involves a series of activities. Sedamayanti⁸ describes these four activities: the current supply of human resources, estimates of supply and demand for human resources, procurement of quality human resources, monitoring and evaluation systems as feedback to the system. Forecasting activities are carried out by comparing needs or demands and availability.

Short-term forecasting techniques include budget analysis and workload analysis. Forecasting HR needs can also be achieved through the budgeting process. The number, qualifications, and quality of employees or human resources required are also determined by the amount of the budget. Workload analysis determines the workload of a worker, and this has been determined in the form of organizational work standards according to the type of work.

2.3 Educational Institutions Human Resource Planning

It has been stated in the previous section regarding planning as part of a vital management function. Good planning, including HR planning, will be the key to the success of achieving the goals and objectives of educational institutions as an organization. The benefit of planning is that it can reduce and anticipate obstacles that may arise in the future.

2.4 The Concept of Planning for Educators and Educational Personnel

Even though an educational institution is not a business organization (non-profit institution), it does not mean that the role of human resource management, especially the planning process, cannot be taken seriously. HR planning in educational institutions is often aligned with human resource development plans. Human resources in the educational environment are divided into educative staff or educators and administrative staff or education personnel, so that the planning carried out also includes the planning of educators and education personnel.

Educational staff are members of the community who devote themselves and are appointed to support the implementation of education. In essence, the fulfilment of human resource needs in the educational environment proactively so that they can support the organization in achieving its goals. Management of educators and education leads to efforts to

build quality education, to form human resources that are not only productive and creative but also reliable and accomplished.

3. RESULTS AND DISCUSSION

3.1 Conditioni Currently

Since the inauguration of STTAL as the Central Implementing Body of the Indonesian Navy, which is directly under the guidance of Disdik, this institution has taken on a new task, namely as a Higher Education Personnel for the World Research Service. The word "world" is not affixed without meaning and purpose. With the establishment of these new goals, the burden of responsibility for the institution and its personnel is certainly getting heavier and more challenging.

Various aspects of the implementation of the educational process must adapt to the new vision. Starting from educators, education staff, curriculum, infrastructure, instruction packages and others that are included in the 10 Educational Components of the Indonesian Navy. This paper will focus on improving the quality of educators at STTAL from various angles such as welfare, ability, administrative legality and career development.

It is not an open secret that currently in all educational institutions owned by the Navy, the teaching profession (Gadik)/lecturer is not a priority position that is the target of Indonesian Navy personnel in developing their careers. This directly or indirectly has an impact on the effectiveness of learning activities in the Indonesian Navy's educational institutions, especially STTAL.

By listening renewal of the vision mentioned earlier, STTAL still has to prove and fulfil its responsibilities to the National Accreditation Board for Higher Education Personnel (BAN-PT) as official higher education personnel in accordance with the accreditation certificate that has been issued. Currently, with the establishment of Postgraduate Education in the Operations Research Strategy Analysis Department at STTAL, the need for educators/lecturers with a doctoral degree is increasing. Several solutions have been taken by the institution, including lecturing STTAL structural officers to pursue Doctoral education in several fields of science in order to meet the quota limit for educators/S3/Doctoral lecturers from BAN-PT.

In addition, the condition that still exists today is the position of lecturers/girls who are

personnel who carry out the duties and responsibilities in the STTAL organization structurally. This causes the personnel concerned to have more obligations and responsibilities in addition to their position in the organizational structure but also their functional position as lecturers/girls. This also shows us that the teaching profession at STTAL is still only a functional position. Many things are caused by this condition, including the factor of the welfare of the girl/lecturer which is getting less attention. As a lecturer/girl who is a functional position they only get compensation, namely teaching honorarium. No other benefits or welfare,

In the development of STTAL in the field of education, of course, TNI AL personnel are also required who are competent in a certain field and have a linear certificate in that field. This can help STTAL in maintaining the accreditation of the institution in the future. Currently STTAL has 4 Engineering majors in the undergraduate education strata for its student officers but only 1 strata 2 or postgraduate major is owned. The shortage of competent educators is one of the main obstacles to making it happen.

3.2 Finfluencing factors

There are many things that affect the current condition of STTAL which have important constraints related to human resources, namely lecturers/girls. The minimum number of lecturers/girls in the field, the lack of linearity in the field of education that is the expertise of lecturers/girls.

First, the lack of interest in becoming an Educator is partly due to personnel welfare factors. Not only is it not noticed, being an Educator actually makes the number of allowances (in this case Performance Allowances) smaller than the number of allowances in the same rank if you have other, more strategic positions. The reason that is often expressed is that being an Educator is not a Structural Position but only a Functional Position. This is not the main reason for making finance the goal of devoting oneself as an Educator. However, as a person who needs the necessities of life, of course he will choose a more qualified career path without reducing the number of allowances.

The second is the recruitment of professional educators who do not yet have a clear system. There are many educators who actually do not have adequate competence, but for some reason they are maintained

and/or remain as educators, so that the learning activities carried out are not optimal.

The third is the absence of educator certification within the Navy organization. It's not really that difficult if Navy educators get certification like outside lecturers

3.3 The expected conditions

By improving the quality of education is influenced by multiple factors. One factor influences the other factors. However, the most important factor is the teaching staff, because the black and white process of teaching and learning in the classroom is largely influenced by the quality of the teaching staff.

In the era of information technology as it is today, educators no longer act as the only source of information and knowledge. However, educators remain as the main element who can guide and assist students in this case STTAL student officers to gain knowledge according to their respective fields.

The big question that this paper will try to answer is about what scenarios should be followed to improve the quality of educators. The whole scenario will include several questions. First, what preliminary steps are considered very important as a starting point for carrying out the next steps. This first step is also considered to be a breaker from a series of problems that are often seen as a vicious circle with no known origin or end. Second, what significant steps should be taken in the overall scenario. Third, what is the correlation between one step and another, and what are the prerequisites that must be met in order to achieve the predetermined step. For more details the author describes as follows:

a. Increase in Salaries and Welfare of Educators

Mohammad Surya (General Chairperson of PGRI's Great Educators), stated firmly that "all the success of the education reform agenda is ultimately determined by the elements at the forefront, namely educators. The rights of educators as individuals, stakeholders of the education workforce, members people and citizens who have been neglected, need to be prioritized in reform". The main right of educators that must receive attention in government policies is the right to earn income and welfare with a decent standard of wages, not a 'minimum wage'. The "minimum wage" policy may have caused employees to have a coolie mentality, not employees who pursue achievements. That is why,

The first step is considered very vital and strategic to improve the quality of educators and education personnel. Why? There are at least two reasons. First, of the five requirements for a job to be called a profession, the ones that are still not fully fulfilled are the salary and compensation for carrying out the role as a profession. The five job requirements as a professional educator in the Naval Organization are:

- 1) That the work has a function and significance for the State at large, the TNI more specifically and the Navy in depth
- 2) That the job requires certain areas of expertise and knowledge
- 3) This area of expertise can be achieved through certain branches of education (body of knowledge).
- 4) That the job requires a professional organization and a certain code of ethics.
- 5) That the work requires adequate salary or compensation so that the work can be carried out in a professional manner

From these five conditions, which is still not fully fulfilled is the fifth requirement, namely adequate salary and compensation. The second reason, because the increase in salary and welfare is a step that has the most influential impact (multiplier effects) on other measures. If necessary, so that the first step does not envy other jobs, salary increases can be carried out thoroughly and gradually.

What are the prerequisites that must be met to be able to carry out this first step well? If the salary standard to be raised is high enough, then the salary increase can be carried out with a high standard of competence as well. Those who will be given a salary increase are educators who have reached the competency standards that have been set. Today we know what is called remuneration or performance allowances that adjust the rank and class of employees, so salary increases are also aligned with the rank and class of the educators. Thus, the competency test must first be conducted honestly and transparently. For this reason, the competency test instrument must be prepared carefully. There should be no cheating in this competency test process. If there is fraud in the implementation of the competency test, it will automatically damage all components in this system. This first step will run more smoothly if the salary payment system has been implemented through a bank as has been running in the Navy.

b. Transfer of Professional Duties and Recruitment to Replace Educators Who are Transferred to Other Professions.

This second effort is a consequence and continuation of the first step. Educators who do not meet competency standards must be transferred to other professions. The assignment is carried out under the following conditions:

- 1) They have been given the opportunity to take part in intensive training and coaching, but does not show any significant improvement,
- 2) The teaching staff did not show any change in competence and there was also no positive indication to improve their competence.

If these conditions have been fulfilled, then they must be willing and appropriate to be transferred from the teaching profession to other appropriate personnel, such as administrative staff, or if necessary retired.

For replacing educators who have been transferred to other professions, it is necessary to conduct an honest and transparent selection (recruitment) according to the qualification standards that have been set. This honest and transparent recruitment of educators has been carried out by Paulo Freire in the context of education reform in Brazil. Crass programs such as auxiliary educators should not be carried out in the future, because such programs are tantamount to setting a dangerous time bomb, especially if you do not manage this program properly. The auxiliary teaching staff program can be incorporated into a single system in the recruitment of educators. That is, the process of recruiting educators is carried out with a mechanism through auxiliary educators. So, to participate in the recruitment of educators, one must go through auxiliary educators.

Such reasons are due to the creation of new jobs and activities, where schools have new program designs and required educators who are assigned to the program so that they need new prospective educators, and also because of the existence of educators in schools who quite due to retirement or who have resigned. are elderly, it is impossible to continue teaching and learning activities at school.

In addition, it is necessary to examine the various common obstacles that exist in the implementation of recruitment because to find out the obstacles to employee withdrawals that occur, such as promotion policies and

compensation policies and so on, schools must be able to overcome these obstacles. In addition, one of them is by making program design plans that are in accordance with procedures that have been established and run well by educational institutions.

So that STTAL and Disdikal can find out the existing obstacles and can overcome them properly. Thus, theoretically the recruitment of educators is very important, of course, the recruitment carried out must be in accordance with the needs and requirements determined by the Navy in order to obtain qualified and professional human resources (HR) in their fields at STTAL. On the other hand, if the recruitment process is not selective, it will result in mediocre human resources (HR).

c. Rebuild an Educator Certification System and Education Quality Assurance System.

As mandated in PP No. 19 of 2005 concerning National Education Standards, the development of a certification system and education quality assurance system is a very big step, which will provide support for the implementation of the first step, which is also very difficult, because it is associated with a very large state budget. The arrangement of the educator certification system must not be done, it must be done to ensure the fulfilment of various national education standards that have been set.

The prerequisites that must be met are as follows; For educators to be appointed, minimum standards of educational qualifications must be applied. Meanwhile, educators who already have experience do not need to be required to meet the standard of the diploma, because it will only lead to what is called the 'sales and purchases of diplomas' which are also known as 'STIA' or 'Schools without Diplomas Existing'. What is needed for them is professional education and a tiered education and training system that must be valued on a par with certain educational qualifications. If this certification system has started to work, it is time to adjust the promotion and career system for educators. The promotion of educators and not merely as a mere administrative process,

d. Develop One Standard of Career Development (Career Development Path)

Along with the implementation of the certification, a separate standard of career development for educators within the Navy organization was drawn up. The system must be in the form of a document ratified in the form

of a Chief of Naval Staff Regulation. For example, to become an instructor, or become a school commander, or staff of an educational institution, an educator must have the required competency standards, and must go through a standardized achievement process. This career development standard will be carried out steadily if it meets the prerequisites, among others, if the certification system for educators and education personnel has been running smoothly. In addition, this third step will run smoothly if the system for promotion of personnel based on certification is already in place. If this career development works,

e. Continuous Competency Improvement

As explained in the previous step, the process of recruiting new educators must be carried out honestly and transparently, and by using the qualification standards that have been set. These qualification standards are non-negotiable. Meanwhile, experienced educators need to be given the opportunity to take part in upgrading carried out by accredited Inservice training institutions. In addition, they are also required to take professional education that can be carried out by an educational staff institution (LPTK) which must also be accredited that has collaborated with the Navy.

The improvement of competence for educators must be carried out in a planned and programmed manner with a clear system. The large number of educators in this country requires synergistic handling by all agencies related to preservice education, Inservice training, and on the job training. Synergistic activities to improve the quality of educators and education staff must involve professional coaching organizations for educators, such as the Teaching Staff Working Group (KKG), Subject Educator Meetings (MGMP), which can be carried out together with outside lecturers such as ITS, ITB and Unair lecturers who have cooperated.

3.4 Strategy to Improve the Quality of Educators

For improving the quality and quantity of teaching and learning activities carried out by lecturers as educators, the lecturer profession must have and master the planning of teaching and learning activities, carry out planned activities and evaluate the results of the teaching and learning process. The ability of educators in planning and implementing the learning process is a major factor in achieving teaching objectives. The skill of planning and implementing the teaching and learning

process is something that is closely related to the duties and responsibilities of educators as educators who educate.

An educator has a very broad meaning, not limited to providing teaching materials but reaching ethics and aesthetics of behaviour in facing challenges in the service. As teachers, educators should have a fairly mature teaching plan. The teaching planning is closely related to various elements such as teaching objectives, teaching materials, learning activities, teaching methods, and evaluation. These elements are an integral part of the overall responsibilities of educators in the learning process.

In general, there are several strategic steps that can be implemented in the educational environment with the aim that improving the quality of educators and education personnel will succeed through the following strategies:

a. Self-assessment

Self-evaluation is the first step for every school that wants or plans to improve the quality of human resources. This activity began with brainstorming which was attended by school commanders, educators, and all staff and involved educational personnel.

The initiator and chairperson of the meeting is the school commander. This self-evaluation activity aims to find out the current condition of the school in all its aspects (all school components), the progress that has been achieved, as well as the problems faced or weaknesses experienced. This self-evaluation activity is also a self-reflection/introspection, to raise awareness/concern about the importance and need for quality education, so that a joint commitment arises to improve the quality of a sense of quality, as well as to formulate a starting point of departure for schools that want or will develop themselves. especially in terms of quality.

b. Formulation of Vision, Mission, and Goals

The formulation of the vision and mission as well as goals is the first step that must be done which explains where the direction of education that the founders / providers of education want to go. The school commander together with the teaching staff representing the institution as the founder and together with representatives of the local community or student officers must formulate where the school will take in the future, as long as it does not conflict with the goals of national education

as stated in Law Number 23 of 2003 concerning the National Education System.

The conditions that are expected/wanted and dreamed of in the long term, if formulated briefly and thoroughly, are called visions. The desired situation should have something to do with idealism and the quality of education. Idealism here can be related to nationality, humanity, justice, nobility of character, or the quality of education as previously defined.

While the mission, is a description and vision or are the main components that must be realized to achieve the vision that has been set. In other words, the mission is the main tasks that must be done to realize the vision.

The goal is the intermediate stage, or main purpose is important between the point of departure (initial conditions) and the point of arrival of the final destination whose formulation is contained in the form of vision and mission. These intermediate goals as medium term goals when the time comes to an end (determined year) will be followed by the next goal, while the vision and mission (relatively/in general) are still the same. Goals (medium term), are broken down into annual goals which are commonly called targets/targets, in clear formulations both qualitatively and quantitatively. These short-term goals (1 year) are detailed in preparation in the form of planning.

c. Planning

Planning at the school level is an activity aimed at answering what must be done and how to do it to realize the goals (objectives) that have been set/agreed upon at the school concerned, including the budget needed to finance the planned activities.

In other words, planning is the activity of determining in advance what must be done, the procedure and the method of implementation for achieve an organizational goal or organizational unit. Planning by the school is a careful preparation of what will be done and the scenario of carrying it out to achieve the expected goals, in written form. It is said to be thorough because it has to explain what will be done, how large the scope of quantitative and qualitative coverage will be, how, when and how much the estimated cost units are, as well as what results are expected.

d. Implementation

If we start from the management functions which we generally known as

planning, organizing, directing/moving or leading and controlling/supervising and evaluating functions, then the first to third steps can be combined with the planning function which as a whole (for schools) has been discussed. In the implementation, of course, there are still more micro (small) planning activities, both related to part of the time (monthly, semester, even weekly), or closely related to special activities, for example facing competitions in the field of study, or other activities.

The Implementation, in this case basically answers how all management functions as a process to achieve the goals of the institution that have been set through collaboration with other people and with existing resources, can run as they should (effectively and efficiently). Implementation can also be interpreted as a process of realizing what has been planned.

It is the role of each that also needs to be highlighted in the implementation of strategies to improve the quality of educators and education personnel. To see the role can be seen as follows:

1) The Role of the School Commander

listen position as manager, school commander is responsible for the implementation of management functions. As a planner, the principal identifies and formulates the work results to be achieved by the school and identifies and formulates ways (methods) to achieve the expected results. Roles in this function include: setting goals and standards, determining work rules and procedures in schools, making plans, and forecasting what will happen in the future.

2) The Role of Lecturers and School Staff

The role of the lecturer (teaching staff) is actually not much different from the role of the principal, only the scope is different. In a smaller (micro) scope, namely managing the learning process according to the study group or field of study he holds, each lecturer understands the school's vision and mission, plans the learning process, (organizes student officer materials, synergizes with appropriate learning methods and resources that he masters), implementing democratic leadership and empowering student officers by making decisions according to the authority they have and establishing good

communication relationships with other lecturers, with student officers, with school principals. He also monitors the progress of student officers, and evaluate the progress of each student as input for continuous improvement of the implementation of the learning process. Lecturers also give awards to student officers who show progress in learning (achievement) and provide encouragement/motivation (motivation) and help student officers whose achievements are less/unsatisfactory.

e. Evaluation

Evaluation as one of the strategic steps in improving the quality of educators and education staff is an important activity to determine the progress or results achieved by schools in carrying out their functions according to plans that have been made by each school. The evaluation at this stage is a comprehensive evaluation, involving the management of all fields within the education unit, namely the educational technical field (implementation of the curriculum/learning process with all its aspects), the manpower sector, the financial sector, the infrastructure and school administration fields. Even so, the educative technical field must be the main focus with a focus on the achievement of results (student officer learning achievements).

As well the implementation of the scenario of improving the quality of educators in Indonesia is closely related to the government system (which has just undergone major changes and its implementation is still developing), the education system, supporting policies, and past experiences that can be used as the best examples in addition to benefiting from experience of other countries, so as not to have to repeat the same mistakes.

The improvement of the quality of educators in Indonesia has received quite a positive response, although here and there are pros and cons, both openly and secretly. Both enthusiastically accept, they want to immediately get certainty, want to get guidelines, instructions and so on, even demand a definite definition/limit of understanding. On the other hand, there are those who are pessimistic and even cynical about efforts to improve the quality of educators and education personnel, especially those that will be implemented to make schools dizzy.

4. CONCLUSIONS AND SUGGESTIONS

4.1 Conclusions

Improving the quality of education cannot be separated from efforts to improve the quality of educators and education staff. Efforts to improve the quality of education will not meet the expected targets without starting with improving the quality of educators and education staff.

- a. Salary and a decent standard of living.
- b. Qualification standard.
- c. Competency standards and efforts to improve them.
- d. Certification system for educators and education personnel and professional transfers that do not meet competency standards.
- e. Honest and transparent selection/recruitment.
- f. Career coaching standards
- g. Preparation of prospective educators and education personnel who are in line with competency standards, and emphasize practice and strong theory.
- h. Training system in Inservice training and professional education institutions in LPTKs.

4.2 Suggestions

The achievement of STTAL's vision and mission towards a world-class research university that is able to support the needs of the TNI in general and the Navy, especially in the fields of science and technology, improving the quality of lecturers/educators is the most appropriate first step. And the way to make it happen is that institutions in this case the Navy can fulfil the rights of appropriate lecturers and have been stated in the Law on the National Education System and several other government regulations that are in line. The Navy in its implementation in the future can invite various components of the nation who are competent and have experience in fostering and building university-level educational institutions that are deemed in accordance with the objectives of STTAL.

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REFERENCES

Hamalik, Oemar, Teacher Education Based on Competency Approach. Jakarta: Earth Literacy, 2006.

Kunandar. Professional Teachers: Implementation of the Education Unit Level Curriculum and Success in Teacher Certification Jakarta: Raja Grafindo persada, 2007

N.K, Roestiyah Teaching Science Problems. Jakarta: Literacy Development. 1989

Ni.am, Asrorun. Building Teacher Professionalism. Jakarta: ELSAS. 2006

sionalitas Guru. Jakarta: ELSAS. 2006