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Pattern Cooperation of SMK and DUDI in Improving Quality of Implementation in Industrial Work Practices at SMK Namira Tech. Nusantara Medan.

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Abstract: *This research was conducted to describe the cooperation pattern of SMK Namira and DUDI on the aspects of: establishment of school, preparation of joint curriculum, guest teacher program, placement of Industrial Practice (Prakerin), student competency test, and graduate employment recruitment.*
This research uses qualitative descriptive approach method. Methods of data collection through observation methods, interviews and documentation studies. Collected data were analyzed using Miles and Huberman model through three processes, namely (a) Data reduction process; (b) The process of presenting the data; and (c) The process of drawing conclusions. Data validity is done through triangulation. The data sources consist of principals, HRD managers DU / DI SMK partners, Productive subject teachers, prakerin committees, and prakerin students.
The results showed that there is cooperation SMK Namira Tech Nusantara Medan with DUDI, namely PT. Astra Honda Motor and CV. Indako Trading Co. in the form of curriculum development and improvement of students' competence in Motorcycle Engineering. The cooperation is realized in: (1) Preparation and application of joint curriculum, (2) Guest teacher program, (3) Placement of students of Industrial Practice, (4) Student competence test, and (5) Graduate admissions.

Keywords: *Pattern Cooperation, SMK, DUDI, Industrial Work Practice.*

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I. Introduction

Law of the Republic of Indonesia no. 20 of 2003 on the National Education System states that there are two types of education in secondary education, namely general education or better known as Senior High School (SMA) / Madrasah Aliyah (MA), and vocational education or better known as Vocational School (SMK) / Madrasah Aliyah Kejuruan (MAK). Senior High School / MA education is more likely to prepare students to continue their education to higher education level. While the education of SMK / MAK is more likely on the preparation of graduates who have the competence of expertise who are ready to work in a particular field according to his expertise.

Referring to the Government Regulation No.29 of 1990 article 3, paragraph 2, that the purpose of education at the level of SMK is 1) Preparing students to enter the work field and develop a professional attitude, 2) Prepare students to be able to choose a career, able to compete and able develop themselves in accordance with their competence, 3) Prepare middle-level workers to fill the needs of the business world and industry at this time and the future, and 4) Preparing the graduates to be productive citizens, courteous, independent, and creative.

Based on the above explanation it can be understood that vocational education has a very basic purpose, clear and measurable that is to create skilled and trained workers who master a particular field or skill. That will increase the number of people who work professionally while reducing unemployment.

Creating a skilled and trained workforce that can be accepted by the business world and industrial world (Dudi) can not be done by the SMK itself, but there is a role of business world and industry that relevant to the competence of expertise held. Therefore, between SMK with the business world and industry (Dudi) needed a relationship that synergizes mutually beneficial to each other. SMK can not achieve its goals if not able to cooperate with Dudi. Failure in establishing partnerships is what makes possible the cause of vocational education in Indonesia still has not experienced satisfactory success. Based on that, the cooperation relationship between SMK and DU / DI should be a concern by the parties involved in the implementation of vocational education, especially the vocational school.

This cooperation relationship should be viewed by SMK and Dudi as something that is beneficial for both parties. So as to create a match between the existing programs in SMK with what is needed by Dudi or better known as the link and match. In other words SMK graduates as skilled and trained worker candidates can be accepted and absorbed by Dudi.

Cooperation between SMK and DU / DI can be realized in some form of activity / program. Kemendikbud mentions at least there are eight programs that become the liaison of cooperation between SMK with DU / DI, that is, 1) Praktik industri (Prakerin), 2) Industrial class, 3) Training center / In-house training, 4) 5) Research collaboration, 6) Student certification, 7) Recruitment (Special Stock Exchanges), and 8) Production-based education training (PBET) and Teaching Factory[1].

Prakerin as part of the cooperation between SMK and DU / DI is considered the most strategic in order to create skilled graduates in accordance with what is needed by DU / DI. Because the implementation of this Prakerin SMK will be in direct contact with DU / DI. Implementation of Prakerin becomes an opportunity for SMK through its students to practice the skills learned in school in real world of work, as well as will be known how far the match between the competencies possessed by students with that required by the real world work.

However, it is unfortunate that not all vocational schools can implement Prakerin in accordance with the right, Prakerin implemented only as a condition in completing education in vocational school, consequently many students who implement Prakerin not in place in accordance with the competence of expertise and sometimes also the work undertaken students in place Prakerin considered too light of the work that should be often found even deviated from the work that should be like Prakerin students are only considered as a messenger by Dudi Prakerin execution place.

Based on preliminary data obtained shows that the implementation of Prakerin in SMK Namira Tech. Nusantara Medan as follows:

1. On the competence of Motorcycle Engineering expertise (TSM) students implement Prakerin on Dudi which is considered relevant in the development of student competence that is in the official workshop of Honda. This is because SMK Namira already has MoU CV. Indako as authorized dealer company of Honda.
2. Implementation of Prakerin on the competency of TKJ and RPL skills is considered not in accordance with ideal conditions. This can be seen from:

a. The majority of students carry out Prakerin at government offices and private offices that do not have jobs that match their expertise.

b. Duties and job responsibilities given to Prakerin student participants are still simple, such as typing, inputting, filing and so forth. As a result, students can not develop their competencies and skills optimally because of the limited employment opportunities provided by Dudi where Prakerin is going.

The description of the conditions mentioned above can be understood that the competence of Motorcycle Engineering expertise has a partner industry relevant to the competence of skills taught in the school, while the competence of Computer and Network Engineering (TKJ) and Software Engineering (RPL) relevant partners to impress the SMK program and Dudi program runs in accordance with the will of each.

The research problem is formulated in several research questions: 1) How is the pattern of SMK Namira Tech Nusantara cooperation with DUDI on the aspects of the preparation of the joint curriculum ?, 2) How is the pattern of SMK Namira Tech Nusantara cooperation with DUDI on the aspects of guest teacher program ?, 3) How is the pattern of cooperation SMK Namira Tech Nusantara with DUDI on prakerin placement aspect ?, 4) How is the pattern of SMK Namira Tech Nusantara cooperation with DUDI on student competency test aspect ?, 5) How is the pattern of SMK Namira Tech Nusantara cooperation with DUDI on graduate employment aspect aspects?

In line with that, the purpose of this research is to know the pattern of cooperation of SMK Namira Tech Nusantara and business world and industry world (Dudi) on aspect 1) Preparation of joint curriculum, 2) Program guest teacher, 3) Prakerin placement, 4) Student competence test, and 5) Recruitment of graduates.

II. Research Methods

The research approach used is descriptive qualitative approach. By reason of descriptive research is a research conducted to describe or explain what it is about something variable, symptoms or circumstances that occur today. (Prastowo, 2014: 186) Descriptive research focuses on actual problems as they were at the time of the study.

Descriptive research in accordance with its characteristics have certain steps in its implementation, namely: 1) Formulation of the problem, 2) Determine the type of information required, 3) Determine data collection procedures, 4) Determine data processing procedures, and 5) Draw the conclusions of the study. (Harjono: 2012: 55)

Background research is SMK Namira Tech Nusantara Medan. implemented from April to December 2017. The data source in this study consists of primary sources of school principals, productive subjects teachers, students, committee prakerin, manager / PR industry partner. Secondary sources that support primary data, including: literature or documents relating to the problem under study. To obtain the necessary data in this study, conducted various techniques of data collection between interviews, observation, and documentation study. Collected data were analyzed using Miles and Huberman model through three processes, namely (a) Data

reduction process; (b) The process of presenting the data; and (c) The process of drawing conclusions. Meanwhile, to maintain the validity of the data obtained triangulation test source.

III. Exposure Of Data And Research Results

SMK Namira Tech Nusantara has established cooperation with relevant DUDI with PT. Astra Honda Motor and CV. Indako Trading Co. Cooperation relationship is in the form of curriculum development and improvement of students' competence Motorcycle Engineering. From the cooperation, several cooperation programs have been created:

1. Preparation of a shared curriculum
2. Guest teacher program
3. Prakerin placement
4. Student competency test
5. Recruitment of graduates

For more can be seen from the picture below:

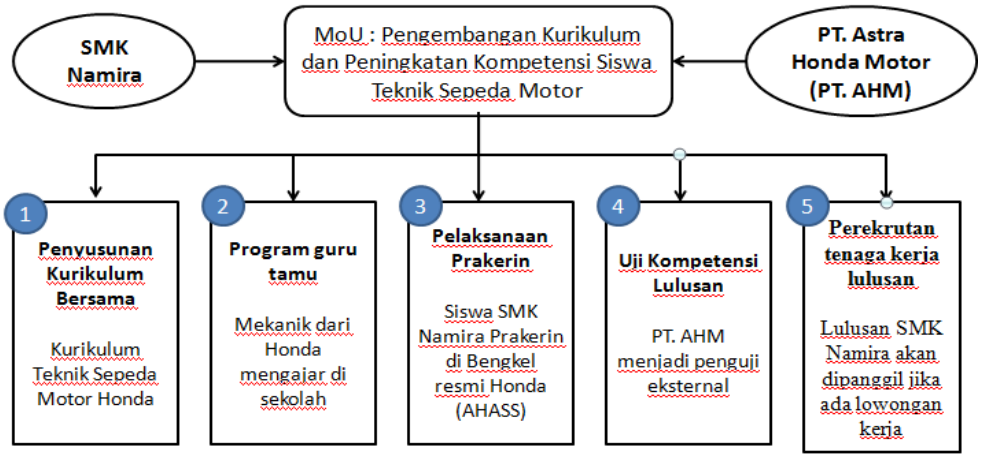

Figure 1. Pattern Cooperation SMK Namira and PT. Astra Honda Motor in Curriculum Development and Student Competency

Cooperation between SMK Namira Tech Nusantara with PT. Astra Honda Motor started in 2014, and effectively started from the beginning of TA. 2015-2016. Implications of this cooperation are:

1. Branding, which is naming the competence of expertise by adding Honda, which is the competence of Honda Motorcycle Engineering expertise
2. Student practice clothing should be the same as Honda mechanical practice clothes, this also applies to prakerin implementation.
3. Schools should use the Honda curriculum
4. PT. Astra Honda Motor provides guidance on curriculum implementation
5. Students carry out prakerin at Honda workshop
6. PT. Astra Honda Motor becomes an external examiner on student competency test
7. PT. Astra Honda Motor through CV. Indako Trading Co. recruits SMK Namira Tech Nusantara graduates to work (mechanic) at Honda.

1. Pattern of cooperation on the aspect of the preparation of the Joint Curriculum

In the preparation of the joint curriculum is done with several stages, namely: 1) planning / preparation stage, 2) Socialization phase, 3) Stages of ratification, 4) Implementation stage, and 5) evaluation phase. For more details can be seen in from the following picture:

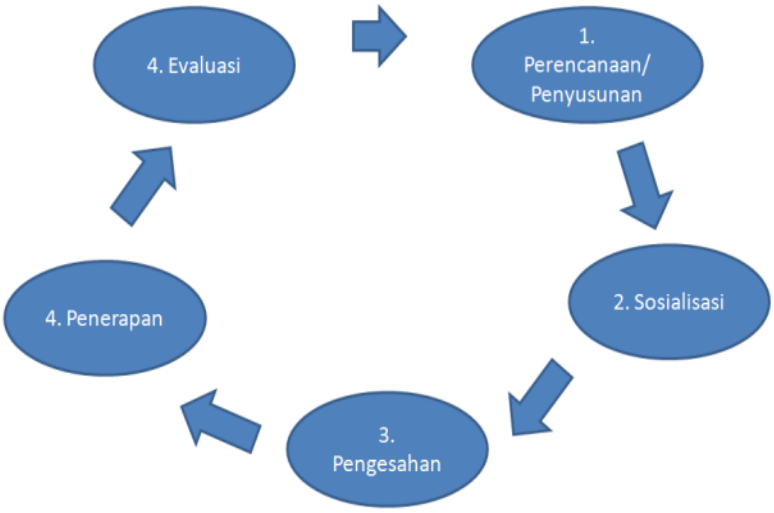

Figure 2. Pattern Cooperation SMK Namira and PT.Astra Honda Motor and Joint Curriculum Development

1.1. Stage planning / drafting
At this stage the PT. Astra Honda Motor establishes several competencies that a Honda mechanic must possess in accordance with the demands of the industry. Then from several competencies are compiled curriculum in the form of Competency Standards (SK) and Basic Competence (KD) for the competence of Motorcycle Engineering expertise. From SK and KD, then the school in this case the teacher develop it in the form of Learning Implementation Plan (RPP) to facilitate its application.

1.2. Phase of Socialization
After the SK-KD is determined then the socialization of the curriculum is held. The stages are PT. Astra Honda Motor invites SMK Namira Tech Nusantara represented by Productive Subject Teachers of Motorcycle Engineering expertise competence to attend the workshop of introduction and development of Honda curriculum.
This socialization stage is done twice a year, or once in a semester, involving teachers from each of the target schools. For Namira Tech Nusantara vocational school, the training and socialization of the Honda curriculum has been followed by productive subject teachers on the competence of Motorcycle Engineering expertise, ie Aliyadi Saragih, AMd and Amrin Hasibuan, S.Pd, and previous headmaster Gunawan, MA.

1.3. Approval stage
The curriculum has been approved by SMK Namira Tech. Nusantara with PT. Astra Honda Motor is further developed into Syllabus and RPP and subsequently endorsed by signed by both parties. and subsequently endorsed by the Education Office as representing the government.

1.4. Implementation stage
The next stage is the application of the joint curriculum. The approved curriculum should be applied and taught to students at SMK Namira Tech Nusantara. To help facilitate teaching and learning activities, the parties from PT. Astra Honda Motor publishes a learning module that can help teachers and students in carrying out teaching and learning activities.
At the application stage of the curriculum, PT. Astra Honda Motor always conduct regular visits to school. This aims, among others, 1) to ensure whether the SMK Namira still apply the joint curriculum or not, 2) to ensure the tools provided by PT. Astra Honda Motor to SMK Namira Tech Nusantara Medan used well or not, 3) as a means of communication between PT. Astra Honda Motor with SMK Namira Tech Nusantara Medan.

1.5. Evaluation stage
At this stage both parties assess whether the curriculum applied so far is still relevant or not. This is usually influenced by the development of automotive technology. If there is to be changed then both parties must be together again to make changes to the curriculum. In evaluating the curriculum of PT. Astra Honda Motor monitors schools regularly to ensure that SMK Namira remains consistent in implementing the Honda

curriculum. Thus, if there are obstacles to the application of the curriculum it will be detected quickly, or if each of the two sides is not aligned then the cooperation can be canceled.

One way done by the PT. Astra Honda Motor in cooperation SMK Namira Tech Nusantara Medan competence expertise Motorcycle Engineering, by conducting free motorcycle service activity in school. In this case the students of class XII competence in the expertise of Motorcycle Engineering acts as the mechanic who performs the service work. While the mechanics of Honda act as supervisor (mechanical head) as well as ensure the work of mechanics (students) done well and correctly. This activity is also a hidden assessment of the extent to which the competence of students at SMK Namira Tech Nusantara.

There are two factors that become obstacles in the preparation and application of this joint curriculum, namely: 1) teacher competence factor. The teacher education background is still a Diploma 3, and is not derived from the teacher training institute, resulting in difficulties in developing the curriculum especially in the preparation of the lesson implementation plan (RPP). Meanwhile, if viewed from the level of competence has not reached the minimum standard mechanical Honda. 2) Facilities and infrastructure. Basically the facilities and infrastructure at SMK Namira Tech Nusantara on the competence of Motorcycle Engineering expertise is pretty good. However, there are still some practice tools that do not exist, especially the latest technology, such as motorcycle tech CBS (Combi Brake System), and ABS technology (Antilock Brake System). In addition to the tools are also still there are less like tools HiDS, HiDS is a technology that serves as a detector toxicity, speed, pressure and so on.

While efforts to anticipate these obstacles that can be done, among others, do program visits industry. Namely SMK Namira Tech Nusantara Medan conduct a visit to Honda, to learn additional directly taught by instructors or Honda mechanics. In addition, that can be done is to hold a guest teacher program, which invites the Honda to provide teaching materials to students at SMK Namira Tech Nusantara Medan. can also be done when implementing prakerin.

2. Pattern Cooperation on the Aspect of the Guest Teacher Program

The guest teacher is someone who is used as a resource from DUDI who is assigned to provide learning materials to students who are held in school, usually carried out in the form of training, seminars and workshops. The guest teacher program is one of the cooperation programs between SMK Namira Tech Nusantara Medan and PT. Astra Honda Motor.

Cooperation SMK Namira Tech Nusantara Medan and PT. Astra Honda Motor. In the aspect of guest teachers are PT. Astra Honda Motor sent instructors or Honda mechanics to provide materials related to the achievement of student competence of SMK Namira on the competence of Motorcycle Engineering expertise. And this program has been running and done an at least once in the semester.

This guest teacher program aims to increase student insight as well as to bring students closer to DUDI. In addition, the guest teacher program also aims to anticipate the lack of learning practice tools in schools. Thus, the material presented by the guest teacher is usually a difficult material taught in schools due to the absence of these tools of practice, or due to the development of motorcycle technology that has not been listed in the curriculum that has been prepared, such as materials injection technology, CBC technology (Combi Brake Sysem), ABS technology (Antilock Brake System), and also the introduction of the latest machines, especially motorcycles output in 2015 and above.

3. Pattern of Cooperation on Aspects of Placement of Industrial Work Practices (Prakerin)

Praktik industry (Prakerin) is a program that must be implemented by all students of SMK Namira Tech Nusantara and is one of the requirements of graduation students at SMK Namira Tech Nusantara Medan. In carrying out Prakerin students Namira Tech Nusantara SMK competence Motorcycle Engineering expertise performed several stages, namely: 1) Preparation, 2) Implementation, 3) Evaluation and follow-up. As seen in the following figure:

3.1. Preparation phase

The first preparation is preparation of prakerin implementation site. All students competence in Motorcycle Engineering expertise is required to perform prakerin in authorized workshop Honda / AHASS, then students choose one of Honda AHASS authorized workshop in Medan, then the school sent a letter of introduction to the workshop. Please note that all authorized Honda AHASS workshops in Medan city must be willing to accept students from SMK Namira Tech Nusantara to do Prakerin. This is due to the existing cooperation with PT. Astra Honda Motor.

The next preparation is preparation of related documents such as the preparation of journal books, Prakerin monitoring papers and other documents. After that, then carried out debriefing to students who will carry out prakerin. The deliberation is done to prepare students both competence and mentally before plunge into industry or real world work. The materials of briefing are among others related to attitude, improvement of attitudes and morals, the introduction of the type of work in place prakerin, leadership, and religious

3.2. Implementation phase

The implementation of student prakerin Namira Tech Nusantara SMK starting from the delivery of students to the official prakerin workshop Honda motorcycle (AHASS) up to pick-up. Once the students are delivered, the students will be guided by mentors from the industry and also monitored by the school's mentors. Implementation of monitoring is done at least three times during prakerin implementation, that is monitoring directly to place of prakerin. however, indirect monitoring is still being done by the mentor teacher through HP media.

This monitoring aims to provide guidance to students as well as to hold communication between schools with DUDI. In addition, monitoring also aims to solve the problems found by students in the field when implementing prakerin.

3.3. Evaluation and follow up stages

At this last stage there are at least three things done, namely: 1) assessment of student performance during prakerin. Assessment is conducted to determine whether the students who implement prakerin passed or not passed. In accordance with what is stated in the journal journal prakerin Namira Tech Nusantara vocational assessment format that becomes a reference in the assessment of prakerin implementation is composed of productive aspects (job type), aspects of personality (non technical aspects), and aspects of life. This assessment is done by prakerin supervisor from the industry that is PT. Astra Honda Motor. That is, the PT. Astra Honda Motor has the full right to graduate students on the implementation of prakerin. This will have implications on increasing the sincerity of students in implementing prakerin because it involves the DUDI. 2) Writing the final report, after the students finished implement prakerin then students are required to make a written report to the school on matters relating to the implementation prakerin. 3) Issuance of certificates. Students who have been graduated are given prakerin certificate. Prakerin certificate is a certificate explaining that the student has performed prakerin in accordance with the stipulated provisions. This certificate of prakerin is jointly issued by SMK Namira Tech Nusantara and PT. Astra Honda Motor.

The main purpose of this prakerin implementation is to provide students insight into the real world of work, in this case being a mechanic in the Honda workshop. Through the implementation of this prakerin students are also expected to use it to get knowledge that can not be in school. For example, on materials related to cutting-edge technology that have not been taught in Namira Tech Nusantara SMK Medan, such as: CBS technology (Combi Brake System), ABS technology (Antilock Brake System) and the introduction of some tools that do not exist in school , such as HiDS technology.

4. Pattern of Cooperation On Aspect of Student Competency Test

The next cooperation is cooperation on aspects of student competency test. In conducting the student competency test required the team of examiners who come from the internal school productive and external school teachers ie the industry (Dudi). In connection with that, acting as an external examiner on the competency test students Namira Tech Nusantara SMK Medan competence expertise Motorcycle Engineering is PT. Astra Honda Motor and CV. Indako Trading Co.

Student competence test activity involving PT. Astra Honda Motor indirectly confirms that students who graduate are students who have met the competency criteria required to become a Honda mechanic. Students who have graduated will also be given recognition in the form of a competency certificate that explains that the student has the same competence as the mechanical competence in the official workshop of Honda. This is very useful for students, considering PT. Astra Honda Motor and CV. Indako Trading Co. is one of the largest companies in Indonesia engaged in the motorcycle business, so the big name of Honda will be very useful for SMK Namira Tech Nusantara graduates in looking for work when there is no chance to work at Honda.

5. Pattern of Cooperation on the Aspects of Graduate Employment Acceptance

In this cooperation PT. Astra Honda Motor prioritizes Namira Tech Nusantara SMK graduates of Medan to the competence of motorcycle engineering expertise to be recruited into one of the workers in this case mechanics in Honda workshops. By meaning, if PT. Astra Honda Motor needs manpower, then they will ask from Namu Tech Nusantara SMK graduate first.

As for the technical recruitment of these graduates are 1) PT. Astra Honda Motor provides information on the needs of the workforce by telephone to the school, 2) School graduates who have not worked, or have worked according to the competence of their skills, 3) Next, the school passes the information to graduates by telephone, group Whatsapp, Line group, and other social media, 4) Graduates who wish to visit PT.Astra Honda Motor as well as carrying job application letter, 5) Candidate of the graduates are given some test by PT. Astra Honda Motor What is competence is in accordance with the required. If the competence has been as expected then it will be accepted. One of the obstacles to this graduate employment cooperation is that the graduate employment of Honda workshops.

Cooperation in recruitment of graduates is one of the most important, because the main purpose of this cooperation is to provide employment opportunities for the graduates in accordance with the competence of their expertise. Indeed, this cooperation can not guarantee all graduates of SMK Namira Tech Nusantara will be a mechanic at PT. Astra Honda Motor, but through this cooperation can be ascertained that graduates from SMK Namira Tech Nusantara competence expertise Motorcycles Engineering has the same competence with Honda mechanics. Thus, it is expected to be more easily accepted in other workshops, given the opportunity to work in PT. Astra Honda Motor will not be able to accommodate all graduates of SMK Namira Tech Nusantara Medan.

IV. Conclusion

Based on the above exposure can be concluded that SMK Namira Tech Nusantara Medan and PT. Astra Honda Motor and CV. Indako Trading Co. has established cooperative relationships in the form of curriculum development and student competence improvement in Motorcycle Engineering. Based on the cooperation, it is downgraded into several cooperation programs, namely: 1) Preparation and application of joint curriculum, 2) Guest teacher program, 3) Prakerin placement, 4) Student competency test, and 5) Graduate employment. The pattern of cooperation on each aspect is as follows:

1. Cooperation on aspects of the preparation of the joint curriculum has been basically done well marked by the existence of a shared curriculum document. In this aspect, it is done by several stages: 1) planning / preparation stage, 2) socialization stage, 3) approval stage, 4) implementation stage, and 5) evaluation phase.
2. Cooperation on the aspects of guest teacher program has been done by way of PT. Astara Honda Motor sent instructors or Honda mechanics to provide materials related to the achievement of student competence of SMK Namira on the competence of Motorcycle Engineering expertise. Cooperation on the guest teacher program is conducted every semester.
3. Cooperation on prakerin placement aspect has been running well, marked by that all students competence of Motorcycle Engineering expertise have executed prakerin in Honda workshop (AHASS). And in this aspect there is no significant constraint, with the meaning of cooperation on this aspect very well. In this cooperation the PT. Astra Honda Motor as well as a prakerin supervisor and determinant of students' graduation in carrying out prakerin.
4. Cooperation on aspects of competency test students are running well, it is marked that at the time of execution of competence test students who act as external testers is PT. Astra Honda Motor through CV. Indako Trading Co. Students who have graduated are awarded a certificate of competence that explains that the student has the same competence as the mechanical competence in the authorized workshop of Honda.
5. Cooperation on the acceptance aspect of graduates is basically been running well, marked by the communication between PT. Astra Honda Motor through CV. Indako Trading Co. in recruitment of graduate workers. Also proven by the existence of several graduates who have worked as a mechanic in Honda workshop. Cooperation on this aspect is erratic according to the needs of the workforce in PT. Astra Honda Motor

V. Suggestion

Based on the previous conclusions, the following suggestions are proposed:

1. Head SMK Namira Tech Nusantara Medan should pay attention to the direction of school development policy. This is due to the enormous potential in the competence of Motorcycle Engineering expertise compared to other competence expertise, which already has an industry partner relevant to the output of the graduate school.
2. Principal to further improve communication with teachers productive subjects Motorcycle Techniques, especially in terms of providing guidance and direction in teaching and learning activities.
3. Headmaster and chairman of the foundation to further improve efforts to organize adequate learning tools regularly, for example by issuing budgeting policy of providing procurement of student learning tools, especially on the competence of Motorcycle Engineering expertise.
4. Head of school through the representatives of the public relations field should establish cooperation with other industries, especially private workshops in Medan, in order to distribute graduates considering PT. Astra Honda Motor can not accommodate all graduates from SMK Namira Tech Nusantara Medan.

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