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Vocational High School Cooperation with P.T. Astra Honda Motor to Prepare Skilled Labor in Industries

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ABSTRACT

SMK Nasional as a secondary vocational education institution contribute in creating skilled labor to meet the needs of the industry. Motorcycle Engineering expertise program at the SMK Nasional in improving the graduate's quality carries out industrial class education with PT. Astra Honda Motor; it is intended so that there is a link and match in the educational process, meaning that what is done in the educational process in the school is the learning resulting the ability and skills according to the needs of industry. This research used qualitative approach with case study research. Research was conducted in odd semester 2016/2017 at the SMK Nasional Malang, East Java, Indonesia. Used data collection techniques are: interviews, observations, and documents. Then Triangulation was used to validate the data. The results showed a good cooperation in the industrial class educational process, began from planning, implementation, and evaluation. Supporting factors in industrial class activity is the support of school committee, all of the school residents (teachers, administrative staff, and employees), as well as PT. AHM as industry partners. while the inhibiting factor is mainly students, which are the low motivation and enthusiasm for learning. To Increase the quality and relevance of education, SMK cooperation with the industry in form of Industrial class is very important, so that the graduates have the skills to compete in the world of work.

KEYWORDS
vocational high school, Cooperative learning, Industrial class, Industry partners.

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Introduction

Vocational High School as part of the national education system has entered a paradigm shift since 1999, namely: from supply-driven to demand-driven, from academic oriented to job (occupation) oriented, and from school-based program to a dual-based program (Depdikbud, 1999) , Vocational education includes a comprehensive national education framework, but the

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vocational curriculum has some specific characteristics that distinguish it from other educational environments (Finch and Crunkilton, 1979; Reksoadmodjo, 2010).

Vocational High School aims to improve the ability of students to develop themselves in line with the development of science, technology and the arts; as well as preparing students to enter the employment and develop a professional attitude (Kepmendikbud No. 0490 / U / 1992 Article 2). According Billett (2011) vocational education have goals that focus on preparation to enter the working world, career choice of students, develop competencies, and as provision of experiences that support for transitioning job positions from one position to another position. Vocational education is education in secondary education that promotes the development of student's ability to implement certain types of work (Rivai & Murni 2010: 91).

Research conducted by Lauglo (2005) point out that the economy is one of the main motivations for introducing vocational education, which is done through practical lessons and work-oriented curriculum. SMK Nasional Malang is one of Private Vocational High School in Malang that seeking breakthrough to improve the quality of graduates and also seek opportunities in labor market so that graduates can be directly employed in the industry. They formed industrial cooperation class with PT. Astra Honda Motor (AHM). This cooperation designated at Motorcycle Engineering (ME) expertise program. Hoping that with this partnership, graduate of Motorcycle Engineering Program gain a greater opportunity to be able to work on the automotive industry, especially under PT. AHM.

The industrial sector and vocational education institutions basically need each other, both of them require a harmonious relationship, mutual support and mutual benefit (Billett, 2011). In terms of the life of business and industry, increasing needs of technology and production quality is an issue that needs to be addressed. On the contrary Vocational High School is in dire need of infrastructure for practical activities, as well as support from the industry to improve the quality of education and job opportunities for SMK graduate (Singh and Sudarshan, 2015).

One thing that industry needs is human resources who are well-educated, reliable, able to meet the challenges. Additionally, the business/industry needs a program that can help professionals to sharpen their skills and follow the advance of technology. These needs require a range of preparedness and capacity to deal with it. One of the effective way is to establish cooperation between the business/industry and educational institutions i.e. Vocational High School (SMK). Basically, every SMK should establish cooperation with the business and industrial sector. This is in line with the Peraturan Pemerintah Republik Indonesia No. 29/1990 Article 7 of Secondary Education, which states that the establishment of vocational schools must also meet the requirements of the availability of potential employment and community support, including businesses and industries.

Forms of cooperation between institutional partners (industry) with SMK reciprocally according Yoto (2014) can be described: (1) from SMK to institutional partner, such as: the introduction of the business/industrial world (BW/IW), job training, internships, visit studies, and searches of employees and

placement; (2) from the institution partner (industry) to SMK, such as: Learning Resource Center (LRC) input, science and technology information, scholarships, curriculum development, exhibitions, labor recruitment and support of facilities and infrastructure or funds for educational development.

The steps required by the Vocational High School (SMK) to establish cooperation by Wena (1996: 114-115) includes: (1) choose the industry pair as a partner, in this activities schools would have to choose the appropriate industry for student's learning place; (2) in order to establish cooperation with the industry that has been specified as learning place, the school should come to the industries concerned, then explains the purpose of cooperation, forms of cooperation, implementation time, duties and responsibilities of each party. With thus explanations it is expected that the industry would give a learning place to SMK students; (3) after the industry is willing to cooperate, a cooperation agreement between the two sides must be made. The cooperation agreement should contain such things as: the purpose of cooperation, forms of cooperation, the implementation of the cooperation, implementation of activities, tasks and responsibilities of each party and anything else deemed necessary; (4) then after the agreement is signed, the two sides began to actualize the cooperation, in the form of concrete activities.

Based on the description above, this research conducted in SMK Nasional Malang, the purpose to be achieved in this research is to describe: (1) planning of industrial class educational cooperation, (2) implementation of industrial class educational cooperation, (3) evaluation of the industrial class implementation, and (4) the factors supporting and hindering the industrial class implementation.

Research Methods

Lincoln and Guba (1985) stated that if the researchers examined something in a natural setting by trying to understand or interpret phenomena in the theme of meaning produced by people it called qualitative approach, identic with naturalistic approach. Bogdan & Biklen (1992) stated that in the field of education, qualitative research is often called naturalistic study because researchers are interested in investigating the incident as it occurs naturally and data was collected by the people fairly.

This study uses a natural approach to reveal the nature of descriptive data from informants with techniques to deal directly with people about what they do, feel, and experience toward the focus of research; so the approach used in this study is a qualitative approach. While the type of research is a case study on the SMK Nasional Malang associated with industrial class educational cooperation.

Research Result

Based on interviews from a variety of sources that consists of the Principal, Head of Motorcycles Engineering Program, Chassis practice supervising teacher, Electrical ME practice teacher, and working practice (*Prakerin)* supervising teacher; the results of observation; and documentation on research sites hence obtained research findings related to the implementation of the industrial class educational cooperation between SMK Nasional with PT. AHM as follows.

Planning of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

Motorcycle engineering practices infrastructure preparation on cooperation class between SMK Nasional and PT. AHM can be stated quite well, building facilities provided by the school, infrastructure such as motorcycles, practices workshop installation, electrical motorcycles, chassis, and other ancillary equipment prepared by both parties under the agreements. practices Workshop of motorcycles engineering cooperation class used is still included in B category.

Productive teachers who teach at SMK Nasional in industrial class were given training in AHM Sidoarjo, teachers training implemented for about one month. Training is done in stages, sustained, and held in turn. PT. AHM does not set up a special instructor who provide training in SMK. Instructors at the Motorcycle Engineering Program cooperation class carried out by teachers who have productive training in accordance with subjects taught that is organized by industry partners. The task of the partners is to provide support and monitor the learning implementation both theory and practice.

Implementation of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

Industrial class cooperation implementation between SMK Nasional Malang with PT. Astra Honda Motor held for 2 years. After that it will be evaluated and discussed by both parties working together to conduct evaluation of performed cooperation as considerations for development and cooperation to come.

Learning implementation for adaptive and normative subjects taught by a teacher with S-1 minimum standard requirements. Productive group subjects taught by teachers who have been trained in PT. AHM according to Honda standards. theory Implementation for productive subjects at school optimized to provide materials that are more focused on Honda motorcycles engineering material.

practice Implementation is done with a Honda standard's machine and supplementary equipment, while the instructors is SMK teachers who have been trained in PT. AHM, motorcycle practices implementation is for an average of 24 hours/week for 4 practices subject consisting of engine subject, chassis subject, electricity subject, and tune up subject. So each subject conducted for as much as 6 hours/week. Industrial working practices (*Prakerin*) Implementation or On-the-job training (OJT) at the SMK Nasional Malang held for 4 (four) months. The theory gained in SMK further integrated with practices were preparation to carry out the industrial working practices in Du/Di. Students in industry is also equipped with theory before they do the actual practice in AHM workshop.

Evaluation of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

The evaluation of SMK Nasional motorcycle engineering (ME) expertise program educational cooperation class with the PT. AHM includes: Midterms, final exams, school exams, the national examination and vocational competence exam. Especially for vocational competency exam both theoretical and practical

problems created by PT. AHM along with productive teachers who have received certificates from PT. AHM. While the examiners also from industry and some certified examiners from the schools, the examination implementation at SMK using provided equipment and declared eligible by PT. AHM.

In the implementation of the of theoretical exam, the question material obtained from the Competency Exam Place (CEP) and 1st - 6th Semester Honda modules. exam monitoring conducted by teachers from SMK Nasional. As for the grade processing carried out by teachers and instructors from PT. AHM. SMK Nasional Malang has passed the practice exam place requirement assessment by PT. AHM. So, the practice exams implementation for students of ME expertise program cooperation class with PT. AHM can be done in SMK Nasional Malang's workshop. Practice exam questions are prepared by CEP, and assessment are carried out entirely by the PT. AHM.

Based on the findings as described above, it can be made a model chart of industrial class education cooperation between the SMK Nasional and PT. AHM as shown in Figure 1.

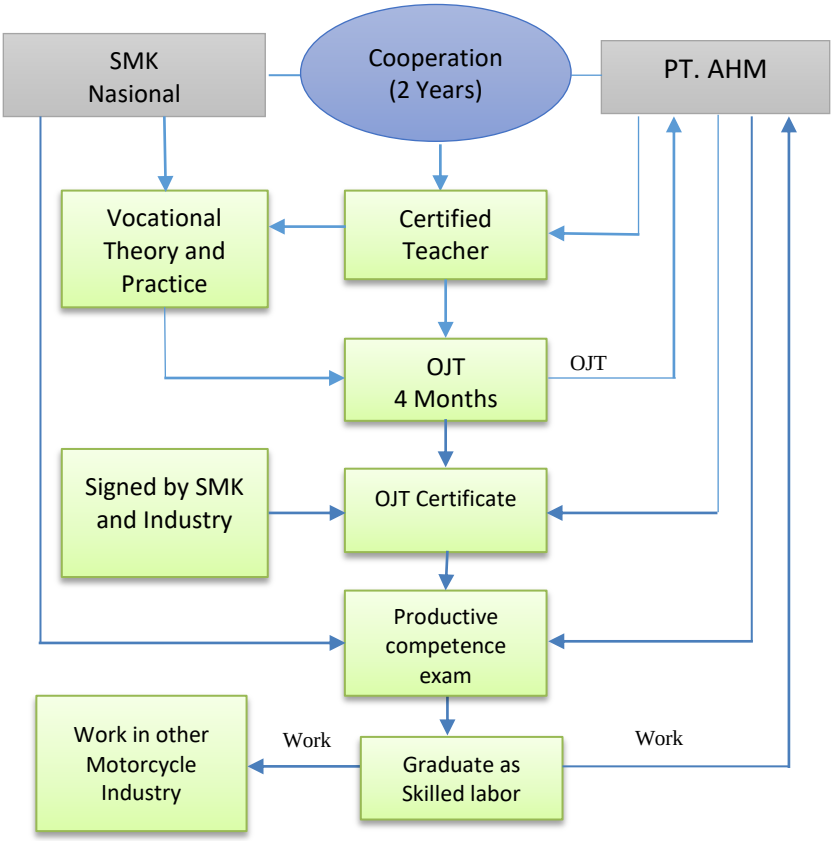

Figure 1. Model of Industrial Class Education Cooperation Between The SMK Nasional and PT. AHM

Supporting and Inhibiting Factors and Solutions of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

Supporting factors in the implementation of this cooperation class are: (1) Teachers who have training certificate from PT. AHM, (2) conducive class situation, (3) sufficient equipment to teach the theory, (4) sufficient equipment for practices and PT. AHM standards, for the practice room still at mini category (Grade B), (5) high student's interest, (6) *Prakerin* at PT. AHM, and (7) support from school residents (teachers, lab assistant, school committees, and parent/guardian)

Inhibiting Factors in the implementation of industrial class cooperation between the SMK Nasional Malang with PT. AHM is: (1) student's motivation for learning activities is still lacking and unstable; (2) The majority of students come from villages that may not understand the true meaning of a job for his future, so the spirit to follow lessons is still lacking; (3) SMK student's discipline level is still lacking; (4) the possibility of the students who come from unfavorable inputs (raw input); land limitation for the development of ME workshop/laboratory and it's Production and Service Unit; (6) the mechanisms are complicated and a lot of requirements that must be met; (7) the ideas and discourse from SMK Nasional to PT. AHASS received less attention and with the impression that the offers from industry is the standard decision; and (8) SMK Nasional's service equipment only has Grade B (3 pit standard) to implement the vocational competency exam, according to Honda standards it needs 6 pit (Grade A) in order to become CEP, meaning that SMK Nasional must add more equipment/machinery for practice if it wants to be CEP for other SMK.

Solutions to inhibiting factors in the implementation of the industrial class carried out as follows: (1) provide information to parents/guardians to assist discipline enforcement in learning, both at school and at home; (2) provide insight to the student's career since entering SMK through guidance in the school ceremony, homeroom teacher, and school counseling; (3) stricter filtering of incoming students in cooperation class, (4) SMK must pursue land development for practice activities and business/production unit; (5) school approach to PT.AHM so that cooperation can go on in harmony and kinship; (6) develop practice facilities and infrastructure so that it can change from temporary grade B into Grade A, so that SMK Nasional can become CEP.

Discussion

Planning of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

Currently SMK education is seen as the most appropriate to face the challenges of globalization which is expected to be key to victory in the competition in the global era, especially in empowering human resources. Global transformation towards a knowledge based economy, lead to higher quality demands of human development as a resource of international and regional competitions in various parts of the world (Pavlova, 2009). Structurally SMK is a school system which is designed and organized by the government and not education held by business community and industry (Reksoadmodjo, 2010).

The new era in vocational education is characterized by positive responses from various stakeholders such as industry, commerce and community, which is manifested in the form of Dual System Education (DSE). Dual system program

is an educational program which is adaptable to increasing needs of professional labor that can compete in the global era. To deal with it, SMK Nasional Malang in industrial cooperates class with PT. AHM carefully planning which consists of: (1) preparation of infrastructure (the practice room, machines, workshop equipment, and other supporting tools); (2) preparation of SMK Nasional productive teachers; and (3) the preparation of instructors from the industry.

Planning of industrial class cooperation between SMK Nasional and PT. AHM includes practice equipment preparation, while practice room/building prepared by SMK Nasional. Preparation of teacher practices implemented by PT. AHM by doing Productive Teacher Training in PT. AHM, those who pass will receive a certificate and subsequently authorized to teach vocational theory and vocational practice, as well as the authorities to assist in the implementation of vocational competency exam. What was done by the SMK Nasional in preparing for such cooperation is in line with which is described by the Depdikbud (1997) that in the framework of cooperation between SMK with industry should be taken strategic steps that such cooperation produces maximum results.

The strategic measures performed by SMK Nasional Malang is implementing the Memorandum of Understanding (MOU) with PT. AHM signed by both parties on December 5th, 2015 held at PT. AHM Sidoarjo. In the MOU, PT. AHM fully supports the cooperation class establishment in SMK Nasional Malang and willing to provide assistance in the form implementable curriculum development, material books in the form of modules, teaching materials, as well as assisting the procurement of equipment. In addition, PT. AHM also ready to help provide training and industry internship for vocational theory and teachers practice.

According to Kohen (1977) and Dwiningrum (2011), the scope of community participation in the implementation of the program include: (1) mobilizing resources and funds. (2) the administration and coordination activities, and (3) elaboration of programs. This means that the cooperation of the SMK Nasional and PT. AHM has done as pointed by the Kohen (1977) and Dwiningrum (2011), which is mobilizing resources and funds, as well as the administration and coordination activities in industrial class cooperation.

Implementation of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

The principle of industrial cooperation between schools and the world of work eventually has the objective to accelerate the adjustment time for vocational school graduates in entering the world of work which is will ultimately improve the quality of vocational schools (Depdikbud, 1997). Implementation of the cooperation of the school with the world of work is a strategy for overcoming the limitations of existing resources in schools in order to develop the school.

In terms of developing the cooperation between schools and industry, schools should be more concerned about the school's importance, with this attitude, the school must always take the initiative to approach the industry. Also to consider offering something that can help the industry (depdikbud, 1994; Djojonegoro, 1997). The pinnacle of the implementation of the cooperation

between school and industry can be institutionalized into institutions as was done by the SMK Nasional and PT. AHM in this case is the industrial class cooperation.

Schools should be more concerned about the school's importance, to maximize the entire activities of the cooperation between vocational schools and industry then it is essential that there is a formal venue on School organization which will manage all activities, from initial assessment to the implementation phase, hence the need for a specialized person under the principal or call it the vice principal of industrial cooperation and service. In the working process, Standard Operating Procedure (SOP) which is a guideline in conducting all industrial partnership activities will be made.

Implementation of industrial class educational cooperation between SMK Nasional and Astra Honda Motor includes: (1) learning theory and practice at school, (2) Education in industry (Prakerin), and (3) student's supervising during Prakerin. According to Singh and Sudarshan (2015) vocational education is education for the productive purpose or productive work that benefit the community; when objects are products or services used by consumers, the work involved is referred as productive work. Implicitly in this modern concept, it means that each individual search and find a better way to work through education and training. Based on the concept described by Singh and Sudarshan (2015) then what is done by the SMK Nasional through cooperation class with PT. AHM is an effort to improve student's skills in preparation of relevant world of work after their graduation. So it is expected that graduates can be recruited by industry/business partner.

By doing this cooperation class it will provide benefits for students include the following: (1) Improvement of skills, (2) Experience in working as an employee, (3) character guidance information, and (4) Expanding horizons. As for the industry will provide benefits include the following: (1) Company promotion, (2) As a community service, (3) Transfer of technology and information, (4) Got a source of labor, and (5) Additional marketing area.

In addition to the benefits for students and industry partner, the implementation of industrial class as performed by SMK Nasional are: (1) Expanding horizons about the new technology, (2) Industrial experience for internship teacher, (3) Industry as a source of school development, (4) Increased teacher's skills and work experience, (5) Means fo labor distribution, (6) The place to send students industrial working practices, (7) Development sources of the school and it's graduates, (8) teaching by factory, (9) Improving the graduates competitiveness, and (10) Reducing the graduates waiting time.

Evaluation of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

The combination of theoretical learning in classrooms and libraries and learning practices in the lab is designed in such a way in order to produce graduates with a certain quality level that are ready to enter the working world. Vocational educational success is not only measured in terms of its quality alone but also in terms of relevance. Relationship quality and relevance are like two sides of a coin. The quality of vocational education graduates deemed relevant by users of graduates, which in this case are business and industrial sector if what

they get is equal to or greater than they expected (http://edwardrosyidi.com/index.php?option=com_content&view=article&id=2%3Akonsep-kerjasama-sekolah-dan-industri-&catid=3%3Aartikel&Itemid=2&limitstart=1. Access date: October 18th, 2016).

According to Singh and Sudarshan (2015) principles of vocational education are: (1) vocational education will be efficient for the environment where the students are trained to be a replica of the environment where he will have to work, (2) effective vocational education can only be given if the training is done with the same tools and machine at work (in business and industry sector), and (3) vocational education will be effective in proportion as long as individuals are trained directly and specifically in thinking and manipulative habits required at the job.

Sudjana (2008: 56) states that the product evaluation functions to measure and interpret the achievement of the program during implementation and at the end of the program in form of the resulting output. Associated with the products produced in this case is certainly the grades they get after the prakerin ends and competency exam grades based on the abilities and skills of each student. According Dikmenjur (2005) industrial working practices evaluation carried out in the industry, as evidence that there had been the implementation of prakerin competency evaluation, students obtain certification from the industry.

Evaluation of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor carried out by both parties according to the agreement that has been done, for the midterm, final exams, class advancement exam, school exams, national exam, are under the authority of the SMK Nasional. As for the vocational school practice exams and skill competency exam, PT. AHM is involved in the drafting, monitoring and assessment. Even for skill competency exam issuance of certificates signed by the industry in this case PT. AHM.

Industry (in this case PT. AHM) is part of the community to contribute strongly to improving the quality of education through industrial class educational cooperation. Suryosubroto (2012) community participation in education is an active process and initiatives that emerged from the community and will be realized as a real activity when met by three supporting factors, namely: (1) willingness, (2) ability, and (3) opportunity to participate in education. Similarly, stated by Cohen and Uphoff (1997) in Dwiningrum (2011) community involvement in decision-making processes, program implementation, gain benefit and evaluate program is a concern that is very valuable for education world.

Supporting and Inhibiting Factors and Solutions of Industrial Class Educational Cooperation Between SMK Nasional and P.T. Astra Honda Motor

Research findings in the form of inhibiting factors are includes: lack of motivation, discipline, and good student input. Additions and development of motorcycle engineering program infrastructure and practices facilities is necessary. While supporting factors in the implementation of SMK Nasional Malang cooperation class with PT. Astra Honda Motor is the support from school

committee, school residents, and PT. AHM. Supporting factors must be maintained and developed so that the implementation of this cooperation can be improved and developed in both quantity and quality. Therefore, the role of school leaders in this case the principal is a key element in the success of the cooperation. vice principal of public and industry relations, as principal's extension and helper should really be able to concentrate in developing this cooperation.

The presence of inhibiting factors in the implementation of SMK Nasional Malang cooperation class with PT. AHM in industrial class activity does not mean that the activity is not running, but all the obstacles are always being kept minimized through solution and tiered measures, so that those obstacles will decreases and will be a force to always be aware of and eliminated.

Solutions by SMK Nasional Malang to erode the inhibiting factors in the implementation of the industrial class carried out as follows: (1) provide information to parents/guardians to assist discipline enforcement in learning, both at school and at home; (2) provide insight to the student's career since entering SMK through guidance in the school ceremony, homeroom teacher, and school counseling; (3) stricter filtering of incoming students in cooperation class, (4) SMK must pursue land development for practice activities and business/production unit; (5) school approach to PT.AHM so that cooperation can go on in harmony and kinship; (6) develop practice facilities and infrastructure so that it can change from temporary grade B into Grade A, so that SMK Nasional can become CEP.

Solution would be given by SMK in overcoming obstacles can be categorized in two things, namely: the obstacles that include lack of attitude and understanding, and (2) the obstacles that include lack of material (school's physical infrastructure). For the obstacles in form of attitudes and knowledge, the school to take measures through solicitation, appeal, good direction and guidance to students, parents/guardians, as well as to the school residents on the importance of SMK cooperation with the industry in improving the quality of vocational education. While the obstacles in form of a facilities and infrastructure shortage, both practice buildings and equipment, the school perform these measures: (1) consultation with student's parents/guardians for school infrastructures procurement, (2) the school proposed funding to the government of Malang City and East Java Province, and (3) the proposed funding to the SMK Education Directorate in Jakarta.

Conclusion

Industrial class education is proven to improve education quality at SMK Nasional Malang and graduates can be directly recruited by PT. AHM and other motorcycle industries. Because of industrial class education (class cooperation) SMK graduates will be more confident and be able to compete in the world of work. The presence of industrial class education will help the government in tackling unemployment.

Suggestion

Industrial class Cooperation in SMK Nasional needs to be maintained and developed, especially for the infrastructure preparation used in the practice of cooperation class, so that the implementation of learning process be better and

competence of its graduates will be mostly recruited by industries to be a motorcycle technician. the Other SMKs is expected to be able to apply industrial class education model for similar expertise program, as well as other expertise program.

Disclosure statement

No potential conflict of interest was reported by the authors.

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