

The Contribution of University as an Agent of Dual Education System to SMK Student's Industrial Practice

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Abstract: One of the newest and most well-known training patterns for developing students career in terms of skills and knowledge is Dual Education System. This gives an opportunity for the student to attend for the real practical work in the real environment where learning is the real task and activities which equip students with the required skills and knowledge. These tasks and activities are really done in industrial work practices areas where they provide the knowledge appropriate on the student's field of expertise. One the industrial practices areas are Universities. A survey was conducted using a questionnaire consisting of eight aspects which include: the implementations of the industrial practices (Prakerin). Based on school and students preparation, the resemblance of material provided theoretically and practically, supervision and monitoring students activities, facilities in the industrial practices area, students creativity and initiative, cooperation, students' discipline and attendance, students achievement and lastly student's readiness on doing industrial practices (Prakerin). The survey results show that there is the effectiveness of dual education system program on vocational students' industry practices (Prakerin) in Universities.

Key Words: dual education system, industrial practices area/place

Abstrak: Salah satu pola pelatihan terbaru dan paling terkenal untuk mengembangkan karir siswa dalam hal keterampilan dan pengetahuan adalah Pendidikan Sistem Ganda. Hal ini memberi kesempatan bagi siswa untuk berada dalam kerja praktek nyata di lingkungan yang sebenarnya dimana pembelajaran adalah tugas dan aktivitas nyata yang membekali siswa dengan keterampilan dan pengetahuan yang dibutuhkan. Tugas-tugas dan kegiatan tersebut dilakukan di praktek kerja industri di mana mereka memberikan pengetahuan yang tepat di bidang keahlian siswa. Salah satu tempat praktik industrinya adalah Universitas. Sebuah survei dilakukan dengan menggunakan kuesioner yang terdiri dari delapan aspek yang meliputi: implementasi praktik industri (Prakerin). Berdasarkan persiapan sekolah dan siswa, kemiripan materi yang diberikan secara teoritis dan praktis, pengawasan dan monitoring kegiatan siswa, fasilitas pada tempat praktek industri, kreatifitas dan inisiatif siswa, kerjasama, disiplin dan kehadiran siswa, serta prestasi siswa dan yang terakhir adalah kesiapan siswa dalam melaksanakan praktek industri (Prakerin). Hasil survei dalam penelitian ini menunjukkan bahwa ada keefektifan program pendidikan sistem ganda pada praktik industri siswa SMK (Prakerin) di Perguruan Tinggi.

Kata kunci: pendidikan sistem ganda, praktik kerja industri

In Act Number 20 of 2003 Article 15, the System National Education described that Vocational High School (SMK) as a form of secondary education unit that prepares students to work in a particular field. Based on Ministerial Regulation No. 22 of 2006 on content standards, specifically vocational education is to improve: (1) intelligence, (2) knowledge, (3) personality and noble morals, (4) as well as the skills of learners to live independently, (5) to follow further education

in accordance with the program of the highest order to work efficiently, (6) develop expertise and skills, mastering the areas of expertise and the fundamentals of science as well technology, (7) have a high work ethic, (8) communicate according to job demand, (9) and the ability to develop themselves.

According to Arikunto (1993), vocational education can be classified into a special education type because of programs are provided exclusively chosen

by a group of students or people who have a special interest to prepare themselves for future jobs. To obtain a professional workforce they have to create a workforce and provider of training in the workforce that can be referred to On the Job Training, vocational education that is also called Prakerin (industrial work practices).

Industrial work practices (Prakerin) is a form of education and vocational training that combines the activities of learning at school through working directly in the field as well as the atmosphere relevant in the world of work/industry.

Also Susanto and Ansori, (2015) in their paper they are supporting that, vocational secondary school (SMK) is one of the aimed secondary educational institutions to create human resources that have the ability, skills, and expertise. SMK graduates are expected to develop themselves to be ready in the world of work. Vocational education itself aims to improve the ability of learners to develop themselves in line with the development of science, technology, and art, and prepare learners to enter the field of work and develop a professional attitude.

The implementation of vocational education and training aims to equip students to develop a personality, academic potential, and fundamentals qualified and true skills through affective learning activities, cognitive, and psychomotor. (Pustaka, 2012) in Djohar (2007) has mentioned some characteristics of vocational education which is the learning experience presented through vocational education includes affective, cognitive, and psychomotor domains are applied both on simulated work situation through teaching and learning process, as well as in actual work.

Meanwhile, Soejoto and Subroto, (2015) write in the sense of individuals productive skills and society and the future benefit. Education unit output can take the form of cognitive, affective and psychomotor. Cognitive is the learner's stability in the form of their knowledge level, while affective or non-cognitive mean attitudes that related to self-learners, families, and communities. Likewise Majid & Sudira, (2017, p. 10) in their paper titled "*Proses Perolehan Kompetensi TIK Melalui Program Praktik Industri Siswa SMKN 2 Pengasih Kulon Progo*" stated that, students' learning outcomes in the industrial practice program are capable of demonstrating cognitive, affective, and psychomotor developments, including knowledge of the world of work, job skills, ability to finish the job, and attitudes related to DUDI.

Education and training for the world of work aims to equip students' productive abilities who are competent. Growing attitude is the value of work on students that includes the soul entrepreneurship, high work ethic, productive, and competitive is used to obtain the competencies as expected by the world of work, learning form in vocational training is in the skills that lead to the achievement of graduate competence. Learning activities by giving production experience on production lines for students both in industrial work practices (*Prakerin*).

According to Djajanto et al, (2014), the results from Malang Raya shows that dual system education as represented by Prakerin has its own contribution to the students as follows (a) there is a positive and significant influence of paired industries to the implementation of dual system education in Malang Raya area, (b) there is a positive and significant influence of paired industries to the work adaptability of vocational high school students in Malang Raya area, (c). there is a positive and significant influence of students of vocational high school students' characteristics to the students' work adaptability, (d) there is a positive and significant influence of the implementation of dual system education to the students' work adaptability. This shows that dual system education can have great impact if it is implemented effectively.

Apart from the positivity of dual system education as indicated the task of vocational education is preparing quality graduates having competence, independence, workability capable of opening field business, work alone, and able to adapt and compete. Substantially vocational education is in charge of forming students develop the ability, insight, skills in a good industrial field, and master the engineering concepts to industry requirements (Sukardi, 2008).

According to Usman and Sugestiyadi, (2014) SMK curriculum is divided into three parts, namely: normative, adaptive, and productive, in which productive groups are characteristic SMK who does not yet have the capacity and skills to suit the needs of the world work. In these three division parts, the school provides students with the material of general education which is known as normative, supportive basic knowledge which can be termed as adaptive, as well as the theory and basic skills which is productive.

In fulfilling the competencies desired by business world and industry world, there is a gap between formative dimensions of humanistic education and practical technical dimensions of SMK graduates to be able

to enter the workforce because the existing system that is not appropriate with the expected competence of the world of work. Technological advances turn out to be fast forward and developed than the readiness of educational institutions in the curriculum training, methods, and tools it has in order to produce those ready to enter the world of work. There is no continuity between the accepted theories in school with practice required at work (Subarkah, 2007).

According to Sudarwanto (2016) in accordance with the vocational curriculum that is applied to vocational secondary schools, it is expected that SMK graduates become a graduate who is ready to work. To recognize the program students are required to follow and implement *Prakerin* where by the student must carry out education and training based approach dual education system. The dual system education program is necessary for the mastery of competence and formation of student attitudes as stated in the destination.

With alignment with explanations above shows that the presence of *Prakerin* has positive contribution to vocation education as well to SMK graduate though accounts some weakness, according to Nurharjadmo, (2008) written there are varieties of problems that arise in education system which are: One, low quality of education, Second, not yet the existence of equalization in gaining access to education. Thirdly the lack of efficiency in the organization of education, also there is a mismatch between the “supply” of graduates with his little “demand”. One form of policies issued by the government to anticipate the things that education policy is a dual system.

Also the results of the study conducted by Rashid in (Ruchiat, 2002, p. 5), discovered the existence of the principal problems experienced in implementing the PSG are: (1) the industry partners of the school has not been able to join the plan the learning activities of students in the form of Professional School students, (2) Industry partners are not able to prepare students to acquire skills that correspond to areas of intense, (3) vision and mission program PSG in practice still varies greatly, including the perception of teachers, instructors, and headmaster.

Kurniadi (1995) managed to identify four major constraints implementation of the PSG include: (1) generally participants do not have adequate basic capabilities, (2) mentality of participants are still not ready to enter the world of work, particularly in terms of work culture and work discipline, (3) too large number of manpower and mind are issued to understand the depth of the module provided by the school, (4) means

provided by the school has not been able to follow the development of science and technology in the business world.

Research networks in Central Java in 1995, also found some problems in the implementation of the programme of PSG, among others are: (1) the unpreparedness of agencies or corporate partner cooperation in providing the equipment, type of work and the appropriate technology with vocational high schools, (2) in school curriculum planning unpreparedness, teacher, time and funds available, (3) Less socialization on PSG program on local governments and communities.

According to Kompas, 20 November (1995) recognized a number of barriers which lead to poor implementation of *Prakerin*, those barriers namely: (1) No uniform quality of students so often makes the company could not use student’s maximum potential and prepare the student job ready, providing an added value, (2) limitations of the number of human resources the company monitors the number of students, so his judgments becomes less accurate, (3) charge the SMK curriculum tend to be loaded with a variety of material that is considered good and important scientific discipline consideration will be based on but no apparent relation to the formation of skills that must be mastered, students (4) system of learning that occurs is still very oriented to the fulfillment of the requirement of the formal school curriculum program, (5) dual system education program orientation (PSG) heavier at large companies than small and medium sized companies.

Generally, from the above researches’ results presentations the dual system education have different problems which are encountered in its implementations. Researchers have come out with different problems which are available on all sides of PSG stakeholders such schools (Vocational School), Participants (Students), and Industries (Places for Practices). In general these problems shown in (Nurharjadmo, 2008), Mardi Rashid (in Ruchiat, 2002, p. 5), Kurniadi (1995) Research networks in Central Java in 1995, and Depdikbud (Kompas, 20 November 1995) indicates every PSG stakeholders are not ready for the implementation which indicates that the dual system education is not effective.

Whereby in Surachim, (2013) it is discussed that PSG pattern learning is middle range theory, which “organization form of vocational education that combines systematic and synchronous education program at vocational high schools with skill mastery program gained through working directly on real work at partner

institutions, directed to achieve professional expertise at a certain level” (Kepmendikbud RI. No. 323/U/1997; About Operation PSG at SMK; Pasal 1, ayat 1). Applied theory refers to Loree model (1970), Dunkin and Biddle (2007), and Undang Undang RI No. 20 the Year 2003 about SISDIKNAS (Pasal 1 Ayat 20), that learning influenced by three components, namely: student, teacher and learning facilities. Through this contrary forced researcher to find out the students’ perceptions and altitude on the effectiveness of the dual system in the place where they do practice (Prakerin) as the means of implementing dual system education.

METHOD

The design of this research was quantitative research with the descriptive approach, where the data are in a numerical and descriptive format for example in form of measurement, sum, or frequency. The quantitative description is also referred to as descriptive statistics. Descriptive statistics are statistics that are used to analyse the data by describing what happened in that data without making the conclusion in general (Mukhadis, 2016, p. 220).

The population study included all students of vocational high schools who were doing Prakerin Program at the State University of Malang from which 61 sample (people) were randomly selected. A questionnaire was used as a measuring tool. The first part of the questionnaire included demographic characteristics of respondents such as name, gender, age, Prakerin duration, Prakerin Place, Class, Name and type of the school, and course study. The second part included 80 knowledge transfer questions. The effectiveness of the program used includes components such as Implementation of Prakerin (Preparatory School, Preparation of students, The resemblance of theoretical and practical material, Supervisor Monitoring (Supervising student activities), Facilities Prakerin (Quantity, Usability), Creativity and Initiative, (Flexibility, Originality, Elaboration, Redefinition), Cooperation (Implementation of the communication, Interactions between individual, there is an initiative within the group) Discipline and Attendance (Time Discipline, Discipline of works, Attending to work place) Achievement (being able to identify the problem, solve the problem with appropriate strategies) lastly is Student readiness (mental and attitude; science and skills).

The research purpose of this study was to know the effectiveness of the dual education system to SMK

students in relation to the area of Prakerin in the State University of Malang. The effectiveness of this research was based on eight areas of the dual system as implemented by Prakerin program at the State University of Malang.

The study used both primary and secondary data sources where primary data was collected through questionnaires and observation method. While secondary data was obtained through school documentations and existing literature on this research topic.

The analysis and interpretation of the empirical results were based on the theory (ies) in relation to the research study. This was done in three ways (i) data reduction (summarizing of data), (ii) data presentation and (iii) drawing conclusions and verifications (Azizah, 2015). Before the instrument was used to collect data, validity and reliability tests were conducted such as construct validity test of the questionnaire that was carried out through consultations with the supervisor regarding the suitability of each indicator used in the instrument.

RESULTS

Demographics

The 61 SMK students in the study are categorized by the following demographics: 80.33% female, 19.67% male; 90.16% Public School, 9.84% Private School. The data also shows 50.82% of SMK student were doing Prakerin for more than four months and 49.18% did not exceed three months’ period and lastly 100% percentages of all respondents ages ranges from 16-19 years old. The researcher also discovered that apart from students’ vocational high schools in Malang city doing the Prakerin program at the State University of Malang, 45.9% were students from vocational high school which were outside Malang city such Blitar, Surabaya, Bandung, Tulungagung, and Singosari.

Descriptive Data Analysis

These calculations of the eight aspects of dual education system were performed using computer software, to show the average score, minimum, maximum, variance and standard deviation of each aspect.

The Table 1 summarizes the aspects which show the effectiveness of the dual education system to SMK students who were doing prakerin at State University of Malang. It indicates average, minimum and maximum values as well the variance and standard devia-

Table 1. Descriptive Data Analysis of Research Aspects on Prakerin Effectiveness

No	Aspects	Average Score	Minimum	Maximum	Variance	Standard deviation
1	Implementation of Prakerin	3.214481	1.918033	3.655738	0.231768	0.481423
2	Supervisor Monitoring	3.065574	2.95082	3.147541	0.005106	0.071457
3	Facilities Prakerin	2.610656	1.803279	3.360656	0.453759	0.673616
4	Creativity and Initiative	3.205943	2.852459	3.639344	0.03937	0.198419
5	Cooperation	3.329235	3.032787	3.590164	0.028998	0.163038
6	Discipline and Attendance	3.271858	2.934426	3.688525	0.037376	0.193329
7	Achievement	3.219262	3.016393	3.508197	0.033387	0.182722
8	Student readiness	3.463115	2.819672	3.770492	0.083697	0.289305

tions of all data per each aspect. The data on the effectiveness of dual education system program on SMK student's industry practice (Prakerin) in State University of Malang was obtained from the results of the spread of 80 questionnaires with item statement.

The question form was given to the students of the different vocational high school who were doing Prakerin in the State University of Malang this is because they were already carrying out Prakerin in some departments in the university, so they were already used to the working atmosphere in similar to work place.

Based on the table above the calculation results of descriptive statistics on each aspect can be noticed on the average of either high or low value on these eight aspects.

The results above showed that the average value on the implementation aspect of the Prakerin which comprise of school preparations, student preparations and the resemblances of material between the theory and practical material provided was 3.214481 which is relatively high; with the minimum of 1.918033 and the maximum value of 3.655738. The standard deviation of this aspect was 0.481423.

The second aspect was facilities provided to students during Prakerin whereby the results showed a medium average value (2.610656), with a minimum value of 1.803279 and the maximum 3.360656. The standard deviation of this aspect was 0.673616.

The third one is students' readiness for engaging themselves in the industry practices (Prakerin) in State University of Malang. The average value of 3.463115 shows relatively high with the minimum value of 2.819672 and maximum value 3.770492. the standard deviation of this aspect showed 0.289305.

The fourth aspect was Supervisor and Monitoring the student on Prakerin, the average score value was relatively high at 3.065574, with a minimum value of 2.95082 and maximum value 3.147541. The value standard deviation of the aspect was 0.071457.

The fifth aspect was creativity and initiative of the Prakerin the average score value was a relative high of 3.205943, with a minimum value of 2.852459 and the maximum value of 3.639344. The value standard deviation of the aspect was 0.198419.

The sixth aspect was Discipline and Attendance of the student on the Prakerin the average score value was a relative high of 3.271858, with a minimum value of 2.934426 and the maximum value of 3.688525. The value standard deviation of the aspect was 0.193329.

The seventh aspect was Cooperation of the student on the Prakerin the average score value was a relative high of 3.329235, with a minimum value of 3.032787 and the maximum value of 3.590164. The value standard deviation of the aspect was 0.163038.

The eighth aspect was Creativity and Initiative of the student on the Prakerin the average score value was a relative high of 3.205943, with a minimum value of 2.852459 and the maximum value of 3.639344. The value of standard deviation of the aspect was 0.198419.

This research has been presented in one form, namely descriptive quantitative. Following are the results of research data for knowing the process of Implementation of Prakerin, Supervisor Monitoring, Facilities Prakerin, Creativity and Initiative, Cooperation, Discipline and Attendance, Achievement and Student readiness in the State University of Malang.

DISCUSSIONS

Implementation of Prakerin

From the results above on this aspect, it is indicated that there was effective implementation of Prakerin program. This aspect comprised of three sub aspects which included school preparation, student preparations and resemblance of theoretical and practical material provided. The results from these three sub aspects indicated the effectiveness of implementation of Prakerin as discussed in details below.

School Preparation

On this sub aspect of school preparation, results from all questions indicate that there were effective school preparations. 88.1% of all respondents accepted that before they went to industrial practice area the school prepared them indicating there was effective school's preparation. These result supported by Roseveare's study (2012), that says an education institution and the mode of learning whilst at university and anywhere the education is provided, will need to prepare students for entry to such an environment and equip them with appropriate skills, knowledge, values and attributes to thrive in it. The school preparation about Prakerin involves many things as it was indicated in the collection of data, the results from students who were doing industrial practices at the State University of Malang shows that the preparation from the schools was well organized and implemented as it was supposed. These results provide an over the view that there was the proper and effective preparation of the Prakerin program as supported by Widodo (2017) in his research based on the analysis concluded that the implementation of industrial practice (Prakerin) in SMK has to run well in terms of planning and organizing to bring good results.

Student Preparation

On this sub aspect of student preparation, results from all questions indicate that (96.73%) of all respondents gave positive answers which means there were effective student preparations. SMK students' preparation for Prakerin was highly important for effective implementation of the dual education system. The students before joining Prakerin program were prepared in terms of facing different environment from that of school. This is supported by Maskan et al. (2014), in their study indicated that each individual has different goals, vision, needs, desires, and skills. These differences will be brought in the workplace, and in turn will result in a different level of satisfaction, although they work in the same workplace. Gibson in Gani (2006) classified individual variables into three: (1) physical, mental ability and skill, (2) demography such as: gender, age and race and (3) background such as: family, social class and experience. In such efforts, the result from respondents showed that the schools were able to provide students with Prakerin orientation so that by the time they were carrying out the working

practices of the industry immediately adapted well the environment work.

The Resemblance of Theoretical Material with Practical Materials

On this sub aspect the results from all questions indicate that there was an effective resemblance of theoretical and practical materials that was provided by the school and that of practices. The 79.91% of all respondents responded positively in which the results indicated that the highest number of the population was applying what has been taught in SMK was equal to what they did in industrial practice (Prakerin). Ika (2010, p. 222) stated, before the students to pitch in to carry out the working practices of the industry then the students should be given the foundation resources. Those material supplies are: 1) orientation of the business and industry world, 2) duties and obligations of student Prakerin in the corporate world and industry, 3) instructions Prakerin book, Prakerin journals, such as the way on how to write a report and 4) revamping the student attitude during their stay in the industry, and training regarding to rules and regulations manners. It is clearly indicated that vocational high schools (SMK), industries and students were effectively prepared to base on the aspects of the school preparations, student's preparation and the resemblance of the theoretical materials to practical materials.

Supervision and Monitoring

The data retrieved from the students in all departments at the State University of Malang showed that both internal and external supervisors work in highest and capable ways which allowed students to gain what they are supposed to learn. The 84.4% of all respondents responded positively indicating there were supervision and monitoring during prakerin program. This is supported by the intensity of the teacher in visiting students during Prakerin as well as the motivation and the support given by the teacher to the students. In addition, teachers supervising also always establish communication with the instructors as well as to students in industry. Slamet (1997) (in Solanki, 2005), says "the task of supervising in Prakerin among other things is to give service, direction, train, motivate and assess Prakerin participant". There are two Prakerin supervision, supervision by teachers and supervision by an instructor. The activities of the Prakerin students were

monitored by supervising teachers from within and out-side industrial practices area and this performed de-pending on the length of the program taken by students such that there are those which were taking place after 3 up to 4 months.

Providing guidance to students, teachers must make sure that they prepare their students in all aspects of learning so that it can be easy for students to learn and gain knowledge from what they had learned before. As Sukarnati in Ika (2010, p. 130), says at the stage of implementation of Prakerin in the industry, the students received guidance from instructors in the industry and also a teacher supervisor of schools with effective guidance. Teachers and mentors do Prakerin supervision during the process of teaching and learning, and students following the practice of the productive skills in the industrialized world.

Facilities in Prakerin Place

The effectiveness of Prakerin facilities to the student should be adequate to support the students Prakerin program which facilitates the learning activities that lead to the formation of professional character in his or her field of expertise.

The results indicate that there were effective and enough facilities in terms of numbers and usability. The total of 91.8% of quantities showed and 90.5% of usability indicated that there was enough and usable equipment in an industrial practice area which helped students to learn their practical studies. The results of the analysis showed that in general the SMK students who were doing industrial practices at the State University of Malang met the standard facilities for practicing. Also, from the analysis, results per each item asked in the Prakerin facilities in the work place had indicated that there was the number of facilities that are appropriate for standard practices.

This research results are supported by the Ministry of Education (2004) which explained that in order to realize the dual education system to be able to produce productive labour candidates who are nationally, regionally, and internationally recognized, conducting education in SMK must be supported among other things by means of adequate facilities in both type and amount, as well as through the utilization of existing educational device in the school environment. This is supporting the results indicated by students by agreeing that they were satisfied with what the facilities provided during Prakerin as the indicator that the State

University of Malang has the learning environment for SMK student who was doing Prakerin program.

Creative and Initiative

On this aspect of creative and initiative, results from all its sub aspects such that flexibility scored 86.1%, originality 94.3%, elaboration total 90.6%, and redefinition 91.4%, indicates that there was the effectiveness of SMK students in creativity and innovation. The creativeness and initiative aspect to SMK students who were doing industrial practices at the State University of Malang has a positive impact that gave chance for SMK students to learn in the way that they were creative and innovative. Using different tasks facilitated the SMK students to have knowledge and skills, which they used in identifying the different problem and finding out its solutions by using the appropriate way and procedures within industrial practices area or place. As supported by Slameto (2010, p. 145) explained that “the sense of creativity-related to the invention, something about the thing that produces something new by using something that has been there.” This opinion is in line with Semiawan, (1987, p. 8), creativity usually defined as the ability to create a new product. However, it does not mean a completely new product. Products may only be combined and the combination of elements that already existed previously. In addition, Soemardjan quoted by Munandar (1999, p. 2) suggested that the creativity is the personal nature of an individual (and not a social nature lived by the community) which is reflected in their ability to create something new “.

Cooperation

This part comprises three parts that aim to know how cooperation was an effective Prakerin program at the State University of Malang as the place for industrial practices. Those three parts include cooperation in communication, interactions between individual, and an initiative within the group work in the Prakerin place. On these sub aspects the results from all questions indicate that there was effective cooperation. As indicated cooperation in communication has a total 95.1%; In interactions between individual total 97.9% while in an initiative within the group as the means of cooperation total of 93.5%; by these results it shows the cooperation was effective.

The Prakerin program at the State University of Malang provided the means of cooperation in which the students learned how to cooperate in terms of communications, group work and interaction with one another during industrial work practices. Students on this had high opportunity to learn how workers in a different organization or industries cooperate in term of communication, group work and with one another with the aim of developing and pushing forward activities assigned by industry administrators. The student also had the opportunity to participate in group work provided in their area of expertise and they were given equal opportunities as normal workers. This is supported by Jensen & Nickelsen, (2008) in their study indicating that, as students work together in positive ways, they are more likely to take on higher challenges which can support the process for deeper learning. Relationships are built in the industrial practices area in numerous ways, especially through cooperative learning opportunities. In the Prakerin program, students showed the importance of cooperation among these aspects; cooperation in communication, interactions between individual and an initiative within the group as the means of cooperation.

Discipline and Attendance

In finding the effectiveness of dual education system, one of the aspects needed to be implemented to shape the student in an acceptable discipline that will be the direction of the work place. Poor discipline results in poor products that bring back the growth of their career hence lead to poor performance. The results from the field showed that there were effective discipline and attendance as has been shown in percentage in these sub aspects, time management discipline which had total 91.0%; work discipline 92.2% and attendance to work place the total of 84.4%. According to Slameto (2010, p. 67) said that students who learn more in advance are a student who has discipline both on campus, at home, and in other places. The SMK students had the attitude of discipline by doing exercises that strengthened themselves to always get accustomed to obeying and heightens the power of self-control. The discipline in learning is student control against the rules in both written and not written forms that have been implemented by the concerned students or come from outside as well as a form of awareness of the task and the responsibility of students Suharsimi (2003, p. 114). This good discipline both at home and on industrial practice area indicates not doing some-

thing that could be detrimental to the purpose of their learning practices process.

Achievement

From this achievement, there are two sub aspects, which have the following results; being able to identify the problem sub aspect, the result showed the 88.5%; while on solving the problem with appropriate strategies the results showed the total 94.3%. The general results showed that the Prakerin program on this aspect has helped students to identify, analyze and come out with solutions to different problems. Also, the results indicated that a high number of respondents were able to follow the appropriate strategies on solving problems which included reporting the problems before starting solving it, asked help when they failed to solve the problems and recognizing inputs they were getting from their supervisors. Also the students were able to analyze a problem, to identify the problems that exist in their line of work, to find new ideas about problems and solutions presented by the students and supervisors in Prakerin place, students asked permission to solve the problem based on their experience, and able to find a solution to solve the problem, having new skills and their attitude were positive because they were appreciating, interest with the works provided during industrial practices. According to the opinion of Hutabarat (1995, pp. 11–12), the results of his study were divided into four classes, namely: (a) knowledge in the form of material, information, facts, ideas, beliefs, procedures, laws, rules, standards, and other concepts, (b) capability in the form of the ability to analyze, reproduce, create, organize, summarize, make generalizations, rational thinking and adjust, (c) respect and skills in the form of custom behaviours and skills in using all the abilities, (d) attitudes in the form of appreciation, interest, consideration and tastes.

Students' Readiness on Doing Prakerin Program

SMK Prakerin students were ready to do the jobs corresponding to the skills they possessed in the relation to their field of expertise, this means that for those with skills, their ability to do work can enhance and develop their potential so that their productivity of work can rise in the place where they are doing Prakerin. This aspect was categorized into two group such as mental and attitude; and knowledge and skills. The mental and attitude have the total 96.3%; while skills

and knowledge has a total of 89.8%. The general results from this aspect can be concluded that, the highest number of the respondent agreed by indicating that they were mentally prepared and had a positive attitude about the program which resulted to gaining of knowledge and skills which were provided during Prakerin program. This is due to the readiness of acceptance of the program, adapted the industrial practices very easily, the program had benefits to them, they were doing the work as they were at the real job, and they were doing any activities assigned to them as the way of learning and having work experience. The readiness of students in the implementation industrial practices always looked on the good situation to enhance the development of the student's characters due to various demands of the future force labour. Rhodes & Morar (2007) emphasizes the need for learners to prepare themselves to implement Prakerin through improved understanding of the work environment, understanding knowledge, and the skills to use the existing equipment in the industry.

CONCLUSIONS

The implementation of the dual education system program by vocational high schools in Malang based on the results obtained from students who were doing Prakerin program at State University of Malang showed that, the dual education system (PSG) is effectively implemented where by all aspects that the researcher was looking for the data were effectively implemented

The Implementation of Prakerin has been achieved in all sub aspects this can be concluded that the implementation of prakerin basing on before and after implementation process had a great impact to the SMK students who were doing industrial work practices at the State University of Malang.

For the Supervision and Monitoring, it is concluded that both the internal and external supervisors and mentors were effective in monitoring and guiding SMK students to reach their goals of doing Prakerin. Supervisors were always attending to the industrial work practices areas to help students and to see their progress in different aspects.

Prakerin facilities, the results indicated that it was effective in which SMK students were able to use the facilities which were enough to them, although there were some of the equipment that was damaged and outdated.

Furthermore, creativity and initiative were effectively done which highly indicated that there was effective implementation of Prakerin to both sides namely for students and an industrial area where the practices were conducted hence be concluded that due to the high percentage of those sub aspects on this aspect that was effectively applied.

For the side of cooperation, among students themselves and staff members was effectively realized which gave them the skills of effective communication, helping each other, solving problems together and sharing new information which helped them in conducting Prakerin in a smooth way hence concluding about this aspect, it was indicated to be effectively functional.

Discipline and attendance was another aspect that showed that it was effective. Here the students were punctual in attending to the work place, completing assigned task on time and behaving well at work place by following rules and regulations at the work place where indicated these aspects was effectively considered and applied.

On the side of students' readiness in doing industrial work practices showed the student where effectively ready to do the industrial practices as it was supposed. Though to the side of knowledge and skills indicated that some of the students were not assigned to their field of expert hence lead to gain new skills rather what they want to enrich their career in terms of new skills and knowledge.

According to data findings of this research study obtained through the questionnaire method, the researcher has the following recommendations as given below.

Firstly, the researcher suggests the vocational high schools should be providing a more special time to practice basic skills for students when they are at schools before following the practice of the dual education system (PSG) so that students can have the knowledge and skills provision, giving guidance and supervision for students doing practice.

Secondly, for the business or industrial world supervisors and agencies such the place for industrial practices have to give the opportunity to students to work in accordance with their program (field of expertise) so that they can benefit on holding their program as perceived by themselves to enhance knowledge and skills in their career. The supervisor may continue by checking out the list of present and the student's daily journal on a regular basis to find out the level of discipline students for practice and knowing what is

the daily journal is created and filled in accordance the task provided.

Thirdly, according to the time provided for the student to be in industrial practices it seems to be (short) not enough hence lead to poor gaining of skills and knowledge to the students, it is suggested that it is better to add the time at least six months to one year that will provide enough time for students and supervisor to know the weakness and strengths that will help in modifying and updating with the current world of daily innovations.

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