

Using Students' Worksheet of Entrepreneurship-Oriented Small-Scale Chemical Industry to Increase the Entrepreneurial Interest of Students of SMK

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Abstract

This study aim at investigating the effect of using students' worksheet on improving students' entrepreneurial interest. This research consist of three steps: introduction, planning, and field try out. The field try out subject were students in class XI SMK N 1 Panjatan that were divided into control class and experimental class. The try out steps used nonequivalent control group design. The data collection instruments used observation sheet of entrepreneurial interest and entrepreneurial interest questionnaire. The result show that the use of students' worksheet of entrepreneurship-oriented small-scale chemical industry can improve the students' entrepreneurial interest

Keywords: students' worksheet, entrepreneurial interest

Introduction

Vocational High School (SMK) is an educational institution that promotes the development of the ability of learners to be able to work in a particular field, see employment opportunities and develop themselves. Vocational curriculum focuses on skills that are practical and functional which contains aspects of theory, lead to the provision granting skills or special skills, and the ability to prepare students to enter the workforce directly. Therefore, SMK role in preparing students to be ready to work, either working independently or fill existing vacancies.

Although SMK is expected to produce graduates who are ready to work, but in reality most of unemployment actually comes from the vocational school graduates. Based on data from the Badan Pusat Statistik (BPS) in August 2012, unemployment has recorded as many as 7.24 million people (6.14%) of the total workforce by education as much as 118.05 million. The number of primary school graduates unemployment down by 3.64%, 7.76% SMP, SMA 9.60%, SMK 9.87%, 6.21% Diploma, and Bachelor of 5.91%. It can be seen that the vocational school graduates has the highest number of unemployed. Factors that cause unemployment, among others: 1) the gap between supply and demand, the number of job seekers is greater than the number of job opportunities available; 2) the gap between job seekers competencies with the competencies required by the labor market; 3) the persistence

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of the graduates who did not continue that can not be sought independently because they do not have the skills or life skills are adequate; 4) the limited ability to process natural resources into products that have economic value as a source of livelihood; 5) mindset, who want to choose a profession that is relatively no risk as employees. Alternatives that can be taken to overcome this is to rely on its own strength or become entrepreneurs, so it is considered necessary to develop an entrepreneurial spirit. In line with this, starting in 2010, entrepreneurship education are required in all vocational schools in the city of Yogyakarta. Head of Education Department of Secondary Education Yogyakarta Suyono said entrepreneurship curriculum comes into force by mid-2010 after the revision of the entrepreneurship curriculum in 2009 with different learning materials. This difference is due to the expected application of entrepreneurship subjects tailored to the needs and culture of the school. Schools should design the most suitable learning for learners. This is supported by the declaration of the Gerakan Nasional Kewirausahaan (GKN) by President Susilo Bambang Yudhoyono in February 2011 in order to promote the development of entrepreneurship throughout the country. The existence of this GKN, is expected to have interest in the younger generation to become entrepreneurs.

The problem this time, the program is taught in vocational entrepreneurship has not been able to produce students who have the attitude and interest in entrepreneurship and life skills, so many graduates of vocational unable to open their own jobs. In addition, many students who aspire to work in a company or the government. Based on the results of interviews conducted on a chemistry teacher and vice head of affairs curriculum SMK N 1 Panjatan Progo Yogyakarta, it is known that 40% of graduates are more interested in work, 40% go on to college, and 20% others. This shows that the interest of learners to create jobs or become an entrepreneur is still lacking. Therefore, it is necessary efforts to improve the entrepreneurial interests of learners.

Students' worksheet (LKPD) of entrepreneurship-oriented small scale chemical industry is LKPD which contains guidelines manufacture of chemical products of small industries which comes with some success stories of people in entrepreneurship. LKPD has been assessed by a chemistry teacher and get a very good value and fit for use in learning. As this study aims to determine the effect of the use of small chemical industry LKPD entrepreneurial oriented on increasing interest in self-employment vocational learners.

Method

This research is experimental nonequivalent control group design to determine the effect of the use of students' worksheet (LKPD) of entrepreneurship-oriented small scale chemical industry on increasing interest in self-employment vocational learners. The research phase includes a preliminary stage, planning, and field tests. The preliminary stage includes two stages, namely analyzing the conditions in the field to find the problem and to study literature relevant to the research conducted. The planning stage is done is to develop and validate an instrument that is used for field testing. Conduct field test phase 1) LKPD trials to determine its effect on increased interest in entrepreneurship students and 2) analysis of data obtained from the research. Field tests conducted with the control class and experimental class, the students of class XI SMK N 1 Panjatan. The study design is shown in Table 1.

Tabel 1. Nonequivalent Control Group Design

Group	Pretest	Treatment	Posttest
Control class	T ₁	Xa	T ₂
Experimental class	T ₁	Xb	T ₂

Adapted for Sugiyono (1997: 56)

Description:

Xa : learning small industrial uses ordinary LKPD

Xb : learning small industrial uses LKPD small industrial chemical oriented entrepreneurship

T₁ : questionnaire early entrepreneurial interest

T₂ : entrepreneurial interest after learning questionnaire

The instrument used in this study: 1) the observation sheet interest in entrepreneurial students who used to observe the interests of entrepreneurs learners to the learning process by using LKPD oriented entrepreneurship, and 2) copies of the questionnaire interest in entrepreneurial students are used to determine the interest in entrepreneurial learners to learning process by using LKPD oriented entrepreneurship. Observation instruments interest of entrepreneurs and entrepreneurial interests of learners questionnaire consists of four aspects. Broadly speaking, the observation instrument learners entrepreneurial interest can be seen in Table 2 and questionnaires interest in entrepreneurship in Table 3.

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Table 2. Grating Observation Instrument Interests Entrepreneurial Students

Aspect	Number of Indicators
Self-confident	2
Creative and Innovative	3
Task-oriented and Results	2
Future-oriented	3

Each of these aspects of the observation instrument entrepreneurial interests of learners are translated into a few indicators. Aspects of confidence include: 1) conviction will be successful; and 2) the ability of states surplus products. Creative and innovative aspects include: 1) the ability to see a business opportunity; 2) the ability of the product packaging design; and 3) ideas in product promotion. Aspect-oriented tasks and results include: 1) participation in the discussions and presentations; and 2) persistence in doing the task. Future-oriented aspects include: 1) the ability to analyze risks; 2) the ability to make a solution; and 3) the ability to plan business development.

Table 3. Grating Instrument Questionnaire Interests Entrepreneurial Students

Aspect	Number of Indicators
Self-confident	5
Task-oriented and Results	5
Creative and Innovative	5
Future-oriented	5

Similarly, the observation instrument entrepreneurial interests, each aspect of the questionnaire instrument entrepreneurial interest also described in some of the indicators presented in the form of a statement.

Data from observation of the entrepreneurial interests of learners in the form of a score for each item indicator, then the calculated percent achievement in learning through the following formula:

$$\text{percent achievement} = \frac{\text{total score obtained}}{\text{total score}} \times 100\%$$

Data analysis questionnaire entrepreneurial interests of learners using normalized gain referring to the equation Hake (1998: 65) to determine the increase in entrepreneurial interest of learners, as follows:

$$\langle g \rangle = \frac{S_f - S_i}{100 - S_i}$$

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Description:

$\langle g \rangle$ = normalized gain
Sf = posttest value (questionnaire)
Si = pretest value (questionnaire)

The criteria for self-employment increased interest of learners are determined using the classification Hake (1998: 65) that can be seen in Table 4.

Table 4. Criteria for Classification Improvement Using Hake

No	Gain	Criteria
1	$0,7 \leq g$	High
2	$0,3 \leq g < 0,7$	Moderate
3	$g < 0,3$	Low

Differences in the entrepreneurial interests of learners experimental class and control class used the Mann-Whitney test statistics.

The hypothesis in this study are:

Ho: There is no significant difference between the increased interest in entrepreneurial learners with the control class experimental class.

Ha: There is a significant difference between the increased interest in entrepreneurial learners with the control class experimental class.

Acceptance or rejection of Ho is based on the price of its significance. If the significance > 0.05 ; then Ho is accepted, but if the price of significance < 0.05 ; then Ho is rejected.

Results and Discussion

Field trials conducted on students in two classes: one class as a class controls and one other class as a class experiment. Learning the experimental class is done using a small industrial chemical LKPD entrepreneurial oriented, whereas the control group did not use a small industrial chemical LKPD oriented entrepreneurship, but using jobsheet used by the school. Learning is done in four meetings, including the preparation and presentation products. At the first meeting conducted a pretest and posttest conducted at the fourth meeting of the variable interest in entrepreneurship learners. At each meeting also made

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observations on the entrepreneurial interests of learners. Data from observation of entrepreneurial interests of learners were then counted and the results obtained achievement mean as presented in Table 5.

Table 5. Data Percentage Interests Observations Entrepreneurial Achievement of Students

The result can be seen that the achievement of entrepreneurial interest in the

No	Meeting to	Entrepreneurial Interest	
		Control class (%)	Experimental class (%)
1	1 dan 2	55	70
2	3 dan 4	56	74

experimental class students is greater than the control class. Furthermore, it can be seen that the entrepreneurial interests of learners control class and experimental class has increased, but increased interest in entrepreneurial students experiment class is greater than the control class.

Gain the data obtained from the questionnaire entrepreneurial interests of learners shows that for the control class is 0.256 and of 0.393 for the experimental class. This suggests that the increased interest in entrepreneurial students control classes are at low criteria, whereas the experimental class are at moderate criterion.

Based on the results of hypothesis testing difference entrepreneurial interests of learners control class and experimental class showed a significance of 0.035, which means showing that the significance <0.05 ; so H_0 rejected and H_a accepted. Therefore, it can be said that there is a significant difference between the increased interest in entrepreneurial learners control class and experimental class.

Conclusion

Based on the research results, it can be concluded that the use of student's worksheet of entrepreneurship-oriented small-scale chemical industry may increase entrepreneurial interests of learners.

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Reference

- Aprilianty, E. (2012). Pengaruh kepribadian wirausaha, pengetahuan kewirausahaan, dan lingkungan terhadap minat berwirausaha siswa SMK. *Jurnal Pendidikan Vokasi*, 2, 3, 311-324.
- Badan Pusat Statistik. (2013). *Laporan bulanan data sosial ekonomi*. Jakarta: Badan Pusat Statistik.
- Hake, R.R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *Am. J. Phys.*, 66, 1, 64-74.
- Hakim, A. (2010). Model pengembangan kewirausahaan sekolah menengah kejuruan (SMK) dalam menciptakan kemandirian sekolah. *Riptek*, 4, 1, 1-14.
- Kemdiknas. (2010). *Modul 2 konsep dasar kewirausahaan*. Jakarta : Direktorat Pembinaan Khusus dan Kelembagaan Direktorat Jenderal Pendidikan Non Formal dan Informal Kementerian Pendidikan Nasional.
- _____. (2010). *Petunjuk teknis program pendidikan kewirausahaan masyarakat melalui kursus dan pelatihan*. Jakarta: Kementerian Pendidikan Nasional Direktorat Jenderal Pendidikan Nonformal dan Informal Direktorat Pembinaan Kursus dan Kelembagaan.
- _____. (2010). *Pengembangan kewirausahaan: Bahan pelatihan penguatan metodologi pembelajaran berdasarkan nilai-nilai budaya untuk membentuk daya saing dan karakter bangsa*. Jakarta: Kementerian Pendidikan Nasional Badan Penelitian dan Pengembangan Pusat Kurikulum.
- Lulusan SMK diharapkan ciptakan pekerjaan. (2010, 23 November). *Kompas*. Diambil pada tanggal 30 September 2012, dari <http://edukasi.kompas.com/read/2010/11/23/12002370/Lulus.SMK.Diharapkan.Ciptakan.Pekerjaan>.
- Sugiyono. (1997). *Metode penelitian administrasi*. Bandung: Alfabeta.
- Utami, Y. G. D., & Hudaniah. (2013). Self efficacy dengan kesiapan kerja siswa sekolah menengah kejuruan. *Jurnal Ilmiah Psikologi Terapan*, 01, 01, 39-51.

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