The Development Inquiry Learning Model
Oriented Life Skills through the Application of Simple Scientific Method Skill (S2ms)

Ervan Johan Wicaksana

Lecturer in IKIP PGRI Madiun, 85 Setia Budi Street, Madiun, East Java, Indonesia
&
Student of Doctoral Program of Education Science, Faculty of Teacher and Education,
Sebelas Maret University Surakarta (UNS), Indonesia
Corresponding e-mail : ervanjohanwicaksana@gmail.com

Abstract: Paradigm in education must be shifted from the old paradigm that refers to teoritist science into a novel paradigm that is applied science. To change the paradigm above, the science lesson is certainly necessary for the development and its learning model learning devices in accordance with the new paradigm in education (applied science). It required a learning model that can meet the new paradigm and leads to a discovery or creation of a product, namely the inquiry learning model oriented life skills through the application of Simple Scientific Method Skill (S2MS). This type of research is the development of research using a model of Dick and Carrey performed on the stage of development and dissemination. The trial is limited to vocational students in Ngawi East Java, Indonesia were divided by 2 groups of classes, namely the control class and experimental class. Data collection methods include validation of inquiry learning model (syllabus, lesson plans, teaching materials, worksheets, and assessment), observation, test evaluation of learning outcomes, student questionnaire responses. Data was analyzed using descriptive methods. The results showed that the group inquiry learning model oriented life skills through the simple scientific method skill (S2MS) proved effective in improving achievement in learning and creativity of students in learning science at vocational students in Ngawi East Java Indonesia. This is seen in the average value of science in the experimental class group was higher (80.25) than in group control class (70.20). Meanwhile, a group of student creativity aesthetically experimental class is higher (3.80) than the control class group (2.58).

Keywords : Inquiry Learning Model, Life Skills, Simple Scientific Method Skill (S2MS).

1. INTRODUCTION

Learning is essentially a mental process and thought processes to take advantage of all the potential of each individual optimally to obtain a change in behaviour as a whole, as a result of the individual's own experience in interacting with the environment. Therefore, the knowledge of the students should be the result obtained through thinking skills and discover. Thus, each of the knowledge possessed by the students will be more durable embedded in long-term memory of students because of truth obtained by the students themselves. But the conditions that occur at this time to put the position and function of teachers in learning activities tend to dominate every activity and learning in the classroom. While the activity of students in learning activities in the classroom tends to be very low. Teachers are less thinking about the development of the learning process, only focused on the pursuit of material that must be completely delivered before school examinations took place. Moreover, teachers are also much preoccupied with the school administration, from creating lesson plans, take care of promotion, as well as the administration allowance disbursement of teacher certification.

More teachers using expository teaching in which the lecture method becomes very dominant and often used as learning models lectures tend to be minimal in the preparation of teachers. In using the lecture

method, teachers tend to rely on previous experience in teaching and impressed the exclusion of creation and innovation in implementing the learning model. With such conditions result in students learn merely to memorize and receive the material knowledge gained only from the teacher alone. As a result, the atmosphere becomes very tedious learning and thinking ability of students did not develop optimally so that the study result was less than satisfactory.

Appropriate curriculum development curriculum in 2013 to respond actively variety of information development, science and technology. Therefore the learning experience should be integrated with life skills that can provide supplies to students to be independent as it navigates the world of work when concerned cannot be forced to continue their education to the next level (MONE, 2003). Life skills in learning include personal skills, social skills, academic skills and vocational skills. Thus the implications of the application of science education in the curriculum 2013, namely the need for the development of teaching and learning activities that make students able to demonstrate appropriate knowledge and skills competency standards that are applied by integrating life skills.

Today graduates of junior high, high school and vocational school who cannot afford to continue their education to a higher level many who become unemployed, both in rural and urban areas, this is due to the difficulty of getting a job. Meanwhile, they feel embarrassed if it had to help their parents as farmers or traders. Associated with it is known that learning in school tends to be highly theoretical and unrelated to the child's environment is. As a result, students are not able to apply what is learned in school to solve life problems encountered in everyday life. Education seemed to deprive students of the environment, thus becoming strangers in their own community environment.

Based on interviews with the teacher researcher science subjects in secondary vocational schools on the Ngawi, East Java, Indonesia, there are on learning in the classroom to provide supplies and life skills to students in order to have the ability (skill) in the provision of life learners. To achieve this, educators should be able to change our education paradigm that is not appropriate. Paradigm in education must be changed from the old paradigm that refers to the theoretic science (theoretical knowledge) into a new paradigm that is applied science (applied knowledge). To realize a new paradigm in education is certainly not easy. Required hard work from all parties involved in education.

One thing that can be started, particularly in vocational learning science is only given limited theory without any application. An example of the microorganisms in the material science lessons, students is only required to classify microorganisms are in a kingdom, then learn how naming living things (binomial nomenclature) was shown pictures of the micro-organisms and understand their usefulness. Of course it is very less useful for students when making a living. In everyday life is certainly needed is skills to work and earn a living, one of which is the life skills. A skill is unlikely to be obtained by learners merely a theory, but a very necessary training and practice directly. Even so skills that they can be embedded within them, need to be taught the learning using the method of the invention, either alone or guided discovery.

Based on 16 respondents drawn at random 49,47% of students consider the implementation of science teaching in vocational covering methods, media and the way they teach a science teacher at a vocational school in Ngawi is not good. While 50.53% thought it was good.

The researchers get the result that 75% if they (students) have graduated from

vocational and suppose they do not pass on to college, they are not sure can apply what they get from learning in school science lessons, especially for livelihood. While the remaining 25% of students answered hesitantly. Then no (0%) who answered assured can apply what they get from learning in school science lessons, especially for livelihood.

To change the paradigm of the above, the science lesson is certainly necessary for the development and its learning model learning devices in accordance with the new paradigm in education that is applied science (applied knowledge). To meet these expectations, there are some models that can be used by educators, but still the need for development to fit the new paradigm in education.

In science subjects in vocational microorganisms, especially material needed for a development model that is appropriate for improving students' ability to communicate and cooperate with members of his group to support practical activities, because the core of the new in education (applied science) is a practicum student-centered. In the practicum activity, students only provided about the material and learning purposes only. The rest of students were asked to draw up, looking for material, design and conduct them the practical activities. From the foregoing required the development of appropriate learning model. Learning model that corresponds to the above is the inquiry learning model.

To support the successful implementation of inquiry learning model is necessary for the appropriate device. Learning tools that are appropriate to the practical activities of inquiry is a learning device that is equipped with the syllabus, Learning Implementation Plan, textbooks and Student Activity Sheet. In the Surono study (2005) of teaching and learning with life skills to obtain satisfactory results which may develop life skills, including thinking skills, social skills, academic.

Based on the learning problems above, it is necessary to have a device that is designed to equip learners with life skills that are integrated to combine skills generic (skills possessed by the students to learn more and may be used to learn the next skill) and specific skills (skills owned by someone in a more specialized field) in order to cope with life's problems. Therefore, in this study, researchers sought to develop an existing model which is then modified to be applied in learning that is applied science in which supported their learning activities are oriented life skills through the application of simple scientific method skill.

In this research, simple scientific method skill is a breakthrough innovation from researchers who are trying to process step-by-step scientific method skill complex and detail become simpler so that it can be applied in schools, both vocational high school, high school, middle school grounds and also kindergarten. Simple scientific method is an innovative skill simplification measures skills scientific method made simpler implementation tailored to the abilities of students in the school.

Simple simplicity skill scientific method is designed specifically for school level. So simple scientific method skill is innovation simplification of the steps of the scientific method of complex into simple so it can be more easily applied at all levels of education even starting from kindergarten to high school, or vocational and can save time allocation required to implement the method this. Expected by applying the simple scientific method skill, teachers can be train students to scientific thinking early.

2. METHODOLOGY

This study is a research and development or known to Research and Development (R & D) using a model of Dick and Carrey performed on the stage of

development and dissemination. The trial is limited to vocational students in Ngawi East Java, Indonesia were divided by 2 groups of classes, namely the control class and experimental class.

Data collection methods include validation of inquiry learning model (syllabus, lesson plans, teaching materials, worksheets, and assessment), observation, test evaluation of learning outcomes, student questionnaire responses. The data was analysed using qualitative descriptive analysis and analysis descriptive statistics.

Qualitative descriptive data analysis techniques are used to process the data collected by the data results of the review and testing of products. A qualitative descriptive analysis technique used to process the data from the interviews, suggestions and feedback or comments contained in the questionnaires was obtained through expert testing and test individuals and small groups and large groups. The results of this analysis were then used as the basis for revising each of the products developed learning model.

Data obtained from the questionnaire assessment expert testing and f ield tests, were processed using descriptive statistical analysis techniques in the form of descriptive percentages.

To test the effectiveness of the model-based inquiry learning life skills that have been developed, researchers designed this experimental study using pre-test research methods and post-test control group design. The Desai research is in table 1:

Table 1. Group pretest-posttest design

Class	Group	Pre-test	variable manipulation	Post-test
A	Experiment	Y_1	X	Y_2
B	Control	Y_1	-	Y_2

The procedures for implementing the experimental research with reference to the subject of random design pretest-posttest group (Randomized pretest-posttest control group) using the control class and the class treated using an inquiry learning model that has been developed oriented life skills through simple scientific method skill (S2MS). In this control class, learning methods Direct Instruction (DI) or without the use of inquiry learning model that has been developed.

3. FINDINGS OF RESEARCH

Data obtained based on research results, consisting of student test results in the form of pre-test and post-test, mastery learning students individually and percentage of class completeness.

Results mastery learning students and the percentage of completion of the class in this study was measured through individual tests. To know the results of student learning completeness individually and completeness percentage of the class, students are given a test at the end of the meeting. The test is a test evaluation of learning outcomes that consist of multiple choice questions to 20 questions. All the questions in the test evaluation of learning outcomes and indicators have been adjusted to the learning objectives to be achieved in learning activities at the specified subject matter.

3.1. Completeness Students of Control Class

The results of the students pretest in the control class are as follows:

Table 2. The results of pre-test score of students in the control class

Score	Frequency	Percent (%)	completeness
20-39	3	9.7	not complete
40-59	8	25.8	not complete
60-79	20	64.5	complete
80-100	0	0	complete
Total	31	100.0	

Based on the above table it can be seen that the students of the control class that has the pre-test value of 20-39 is as much as 3

students (9,7%), 40-59 as many as 8 students (25,8%), 60-79 as many as 30 students (64,5%) and 80-100 as 0 students (0%).

The results of the analysis of student learning completeness individually in pre-test activities in the control class is 11 students are not exhaustive and 20 students have completed the study.

The results of the post-test students in the control class are as follows:

Table 3. The results of the post-test score of students in the control class

Score	Frequency	Percent (%)	completeness
20-39	0	0	not complete
40-59	4	12.9	not complete
60-79	24	77.4	complete
80-100	3	9.7	complete
Total	31	100.0	

Based on the above table it can be seen that the students of the control class that has a value of 20-39 post-test was as much as 0 students (0%), 40-59 as many as 4 students (12,9%), 60-79 as many as 24 students (77,4%) and 80-100 were 3 students (9,7%). Results of the analysis of individual mastery learning students at the post-test activities on the class of the control that is 4 students are not completed and 27 students are completed the study.

3.2. Completeness Students of Experiment Class

The results of students pretest in the experimental class are in table 4:

Table 4. Results of pre-test score of students in the experimental class

Score	Frequency	Percent (%)	completeness
20-39	3	9.7	not complete
40-59	12	38.7	not complete
60-79	16	51.6	complete
80-100	0	0	complete
Total	31	100.0	

Based on the above table it can be seen that the students of the experimental class which has a pre-test value of 20-39 is as much as 3 students (9,7%), 40-59 as many as 12 students (38,7%), 60-79 of 16 students (51,6%) and 80-100 as 0 student (0%).

The results of the analysis of student learning completeness individually in pre-test activity in the experimental class of 15 students is not exhaustive and 16 students are completed the study.

The results of the post-test students in the experimental class are in table 5:

Table 5. The results of the post-test score of students in the experimental class

Score	Frequency	Percent (%)	completeness
20-39	0	0	not complete
40-59	1	3.2	not complete
60-79	3	9.7	complete
80-100	27	87.1	complete
Total	31	100.0	

Based on the above table it can be seen that the students of the experimental class which has a post-test value of 20-39 is as much as 0 student (0%), 40-59 as 1 student (3,2%), 60-79 as many as 3 students (9,7%) and 80-100 as many as 27 students (87,1%). The Results of individual mastery learning students' analysis at the post-test activity in the experimental class that one person is not exhaustive and 30 students are completed the study.

3.3. Completeness Percentage of Control Class

The results of the average value of pretest students in the control class is obtained at 55, 61. While the average value of the post-test students on control class is obtained at 70, 58. Percentage completeness control class student learning outcomes in pre-test is 64, 51%. While the percentage of completeness of student learning outcomes control class during the post-test of 87, 09%.

3.4. Completeness Percentage of Experiment Class

The result of the average value pretest students in the experimental class is obtained by 55, 35. While the average value of the post-test students in the experimental class is obtained by 82, 32. While the percentage of completeness of student learning outcomes experimental class in pre-test is 51, 51%. While the percentage of completeness of student learning outcomes experimental class at the time of the post-test of 100%.

The results completeness percentage control class and experimental class can be illustrated in the figure 1:
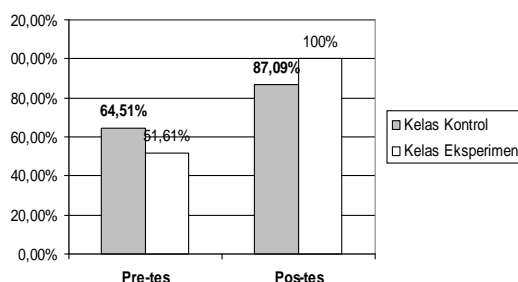

Figure 1. Graph of completeness percentage control class and experimental class

4. DISCUSSION

The results of the study showed that the group inquiry learning model oriented life skills through simple scientific method skill (S2MS) proved effective in improving achievement in learning and creativity of students in learning science at vocational Scholl in Ngawi. This is seen in the average value of science lesson in the experimental class group was higher (82, 32) than in group control class (70, 58). While the views of the percentage of completeness of student learning outcomes experimental class, the experimental class looks up to 100% higher than the control class is 87, 09%.

Excellence inquiry learning model oriented life skills through simple scientific method skill (S2MS) This may be because students feel they are receiving a real learning experience and feel their skills grow, so that

the future can be useful for them to be applied in the community.

Simplicity simple scientific method skill in this case is sufficient to help student learning as simple scientific method skill is innovation simplification of the steps of the scientific method of complex into simple so it can be more easily applied at all levels of education even starting from kindergartens and schools upper secondary or vocational and can save time allocation. Simple application of scientific method this skill can train students to scientific thinking early on.

5. CONCLUSION

1. The inquiry learning model oriented life skills through simple scientific method skill (S2MS) proved effective in increasing the value of student learning outcomes are seen in the average value of science lesson in the experimental class group was higher (82,32) than in group control class (70,58).

2. The inquiry learning model oriented life skills through simple scientific method skill (S2MS) proved effective in improving classroom learning completeness percentage seen in the experimental class learning completeness percentage reaches 100% higher than the control class is 87,09%.

6. SUGGESTIONS

1. The results of this study are expected to contribute to the development of scientific disciplines, notably education innovation, especially in regard to life skills-oriented education to increase student interest and mastery learning.

2. The results of this study are expected to be used as a reference in the research and development of advanced research by adding or develop other learning innovation or other aspects of the development of the variables in this study.

7. REFERENCES

Courtney Jane Lynch. (2007). "Exploring the Implementation of a Life Skills Training Program

for Adolescents in the Texas Foster Care System", *International Journal of Educational Research. The International Journal of Public sector Education.* 19(4),316-338.

Dick. W, Carey. L. Carey. J.O. (2009). *The Systematic Design of Instruction*. Addison-Wesley Educational Publisher Inc.

Joyce. B Weil dan Shower B. (2000). *Models of Teaching*. Fourth Edition, Massa Chusettes, Allymand and Bacon Publishing Company

L. Phoebe Adhiambo. (2013). "Implementation of Life Skills Education in Secondary School in Uriri and Awendo Districts, Migori County Kenya", *Journal Information Bulletin No. 9*.

M. Goudas and E. Magotsiou. (2011). "The Effects of a Cooperative Physical Education Program on Students' Social Skills", *Journal of Teaching in Physical Education.* 01/2011; 55-8.

Surono. (2005). *The Integration of Life Skills in Learning Physics Highlights Pressure at SMPN 34 Surabaya*, Surabaya, Indonesia, Surabaya State University