

CHAPTER I INTRODUCTION

1.1. Background

Education is one of the important things in the world. On the basis of wisdom and sanity grounds, education is the light that enlightens them the ability to differentiate between right and wrong, true and false, correct and incorrect and also is the milestone in the development of integrated personality, the righteousness in character and inculcation of social, moral, ethical and spiritual values.

The fundamental concept of basic education is to make productive crafts the medium of education. It is questioned whether knowledge of the various branches of learning can be possibly attained through handicraft. A detailed study of the industrial processes will reveal the true answer and satisfy the sceptic in this respect. From the very beginning of creation man has been utilising the gifts of nature for his own comfort and prosperity (Singh, 2004)

According to law No. 20 2003 Education is a conspicuous and deliberate effort to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have spiritual powers, religious, self-control, personality, intelligence, noble character, and skills needed him, society, nation, and State. It can be concluded that education is the guidance or help given by an adult to a child's development to reach maturity with the aim that children are quite capable duty not his own life with the help of others.

The development of innovative student worksheet is very important as it is known that innovative teaching and learning is able to motivate students to learn effectively that may improve student's achievement in chemistry. Especially in fulfill high quality of learning material that used by students in senior high school or Madrasah Aliyah that available (Situmorang, 2010).

Based on the author's experience when field experience program (PPL) in SMA N 1 Sidikalang, many students who scored below the KKM. The lowest value was 45.67, while the value of completeness is 75. For each class there are

Chemistry including one branch of science, because investigations of chemistry using scientific procedures. Chemistry is the study of waking up or structure of matter, changes in matter, and accompanying energy (Keenan, 1986).

Chemistry as one of specialization in science subjects in class XI. Learning in class XI SMA is a science that is rich of abstract concepts. Chemistry is not a new subject for students, but often found a high school student who considers chemical materials complicated and difficult to learn, so students have first felt less able to study the learning outcomes even under the KKM. Purwaningtyas (2012) states that the causes of low student learning outcomes are caused by several factors, both factors of teachers, students, and other factors that cannot be controlled. Teacher of factors is not possible using a tool that can be integrated in all teaching and learning activities and require teachers to be more creative in the implementation process so that teaching and learning activities still lead to a conventional method.

To solve this problem, it requires a paradigm shift in learning. Some paradigms are necessary adaptation of Arnyana (Ida, 2010), namely: (1) of the teacher's role as a source of knowledge became friends learning, (2) of learning based on facts towards problem-based or project, (3) of the habit of repeating and rehearsal towards the planning and investigation, then the application is developed in learning problem-based learning, learning model Problem Based Learning (Ida, 2010). In this case also required innovation in the application of models and methods of teaching chemistry associated in everyday life. Innovation is in addition carried out by the teacher in the learning process in the classroom, and also can be done by developing students' worksheets used in chemistry learning. One medium that is used to supplement the learning model Problem Based Learning is using a media student worksheet. Media Student Worksheet is a kind of handout intended to help students learn directionally. This media is expected to increase students 'understanding of the study material with PBL methods, so that students have a sense of curiosity and able to motivate and encourage students' active learning (Fadlana, 2013).

Student worksheet is a learning resource that can be developed by the teacher as a facilitator in the learning activities. Student Worksheet prepared can be designed and developed in accordance with the conditions and situations of learning activities that will be encountered. Student Worksheet is also a medium of learning, because it can be used in conjunction with learning resources or other instructional media. Student Worksheet is a source of learning and instructional media dependent on learning activities are designed.

Student worksheet as a learning resource can be used as an alternative medium of learning. Student Worksheet including print media of the development of printing technology in the form of books and contains visual material, as expressed by Arsyad (2004; 29). Student Worksheet is a type that is intended to help students learn directionally. Student Worksheet can also be a handbook for teachers in addition to other books. According Slameto (2003), learning is influenced by two factors, namely: (1) internal factors such as students' prior knowledge and (2) external factors such as learning approach. Learning approach can be performed using Student Worksheet media. LKS way of presenting the material in the delivery of materials covers activities involving students actively example exercises, discussions, and simple experiments (Eli, 2009).

In addition to encouraging students more active and engaged in learning, problem based learning method can improve student achievement because using problem-based learning students are required to solve problems in independent learning so that students can find solutions sought. Application of the method of problem based learning can improve student learning outcomes in material solubility and solubility product (Yuvencia, 2015).

The use of Problem Based Learning teaching model has proven to give good results and improve student achievement. It can be seen from the results of research conducted by Ida (2010) in his study on the implementation of Problem Based Learning (PBL) on student learning outcomes Judging from the Intelligence Quotient (IQ) states that the implementation of Problem Based Learning effect on student learning outcomes in terms of IQ in students XI IPA SMAN 1 Ubud. The same is stated by researchers Ulfah (2013) in his research on

the application of the Problem Based Learning (PBL) Student Worksheet with the media to improve the ability to think critically and logically. The results showed that the application of the Model Learning Problem-based learning increases the ability to think critically and logically students, evidenced from the first cycle of an average percentage of 68.33% with high criteria and the second cycle into 88.96% very high criteria. In line with the research above, Fadlana (2013) reported the results of research through a comparative study using PBL (Problem Based Learning) is equipped with Macromedia Flash and Student Worksheet on learning achievement in terms of student motivation on the material acids, bases and salts classes VII SMP Negeri 1 Jaten Karanganyar school year 2012/2013 shows the effect of PBL teaching model with Macromedia Flash and Student Worksheet on student achievement.

Based on the above, researchers interested in conducting research titled **“The Development of Innovative Student Worksheet With Problem Based Learning to Improve Student Learning Outcome on Topic of Solubility and Solubility Product”**

1.2. Problem Identification:

Based on the background, the problem identification can be identified as follows:

1. Low students' understanding of the concept of chemical materials
2. Teachers have difficulties to prepare the innovative learning in student worksheet in teaching and learning process
3. Chemistry learning only based on understanding of the concept and need to prove of the concept
4. Presentation of the material is complicated, less interesting, monotonous and boring
5. Textbooks are designed only to focus more on the provision of knowledge

1.3. Problem Formulation:

The problem formulation of this research is:

1. How is the perception of lecturer, teacher, based on BSNP the innovative students' worksheet in solubility and solubility product as the subject matter?
2. Is the development of innovation student worksheet with PBL effective in improving learning outcome in the subject solution and solubility product?
3. How many percent an increase student learning outcome with using innovative student worksheet based PBL compare by using a student worksheet that already exist on topic of solubility and solubility product?

1.4. Problem Limitation:

In order for this study did not deviate from the purpose of research, the problem in thus study should be limited. From the formulation of this problem, so that limit the problem in thus study are:

1. Arranging and developing the innovative student worksheet chemistry on the topic of Solubility and Solubility Product to meet the standard provided by BNSP.
2. Learning materials will be reviewed and revised by the chemistry lecturer and students in Chemistry Department to obtain the standard learning materials.
3. Improved chemistry student Achievement on teaching Solubility and Solubility Product at the high school in the school year 2015/2016 using innovative of Student Worksheet based Problem Based Learning.

1.5. Research Objectives:

Based on the above problem formulation, as for the purpose of this study is:

1. Getting innovative Student Worksheet with Problem Based Learning (PBL, which have been prepared in compliance with the eligibility criteria of the standard presentation BSNP, through trials against student learning

outcome, through the perception of chemistry teacher and expert validation.

2. To improving the student learning outcomes on topic of solubility and solubility product.
3. To know increasing of student learning outcome using innovative student worksheet with PBL compare student worksheet that already exist in school on topic of solubility and solubility product.

1.6. Research Benefits:

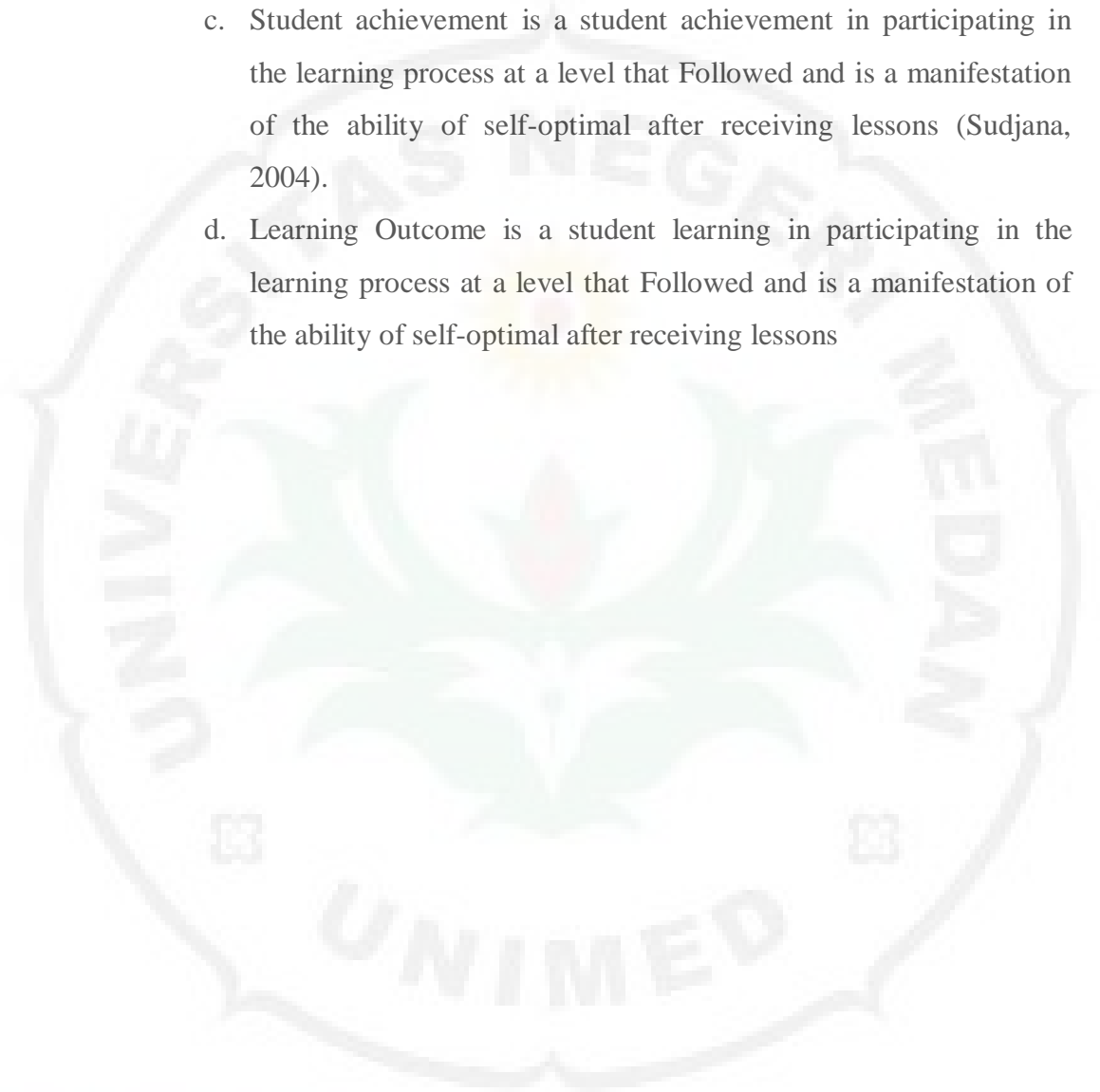
The results of the study are expected to be useful to:

1. Researchers gain a lot of knowledge about the use of student worksheets based innovative learning model Problem Based Learning to improve the quality of the outcome of the learning process.
2. Give motivation to teachers to conduct similar and better research examining learning media to chemistry topic.
3. Help improve learning outcomes of students in the learning process chemical material Solubility and Solubility Product.

1.7. Operational Definitions

- a. Model learning *Problem Based Learning* is a learning model that begins with giving problems to students where the problem is encountered or an everyday experience - the students. Furthermore, students solve the problem of finding new knowledge. (Rusman, 2013)
- b. Innovative student worksheet is someone's attempt to use reasoning, the ability of imagination, a variety of stimulant and individuals surrounding the new product both for themselves and the environment and student worksheet type of handout is intended to help students learn in a focused and Able to Enhance students 'understanding of the study material (Mulyasa, 2013).

- c. Student achievement is a student achievement in participating in the learning process at a level that Followed and is a manifestation of the ability of self-optimal after receiving lessons (Sudjana, 2004).
- d. Learning Outcome is a student learning in participating in the learning process at a level that Followed and is a manifestation of the ability of self-optimal after receiving lessons



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