

## CHAPTER I

### INTRODUCTION

#### 1.1. Background

Education is a means to achieve success for everyone. A Country can be said to advance when considering the education of the nation. Through Education, humans will have the ability and personality that evolved means with education, human capabilities will increase with the times. In UU Nomor 20 tahun 2003 on National Education System Chapter I Article I Paragraph 1, stated:

“Education is a basic and planned effort to create an atmosphere of learning and learning process so that learners actively develop their potential to have spiritual power of religion, self - control, personality, noble moral intelligence, as well as skills needed him, society, nation and state.”

Based on that verse, education is a learning process so that learners actively develop their potential. Information about intelligence and achievement is needed in the field of education. Intelligence and achievement are closely related, intelligent learners need a relatively short time to understand the lesson. Low-intelligence learners require a relatively long time to learn a concept or theory of a subject. It can be said that the learning speed of learners is influenced by the level of intelligence of learners.

The 2013 curriculum uses the principle that student-centered learning processes where passive learning patterns become active learning seek. Efforts to improve the quality of education should be done continuously and sustainably. Currently quality education, but other times are not necessarily qualified, because the demands of society and the development of science and technology and art change with time changes. According to Quisumbing (2003) in Djemari (2016), the quality of education is a dynamic process, not static and not a final product. The level of quality is dictated by the demands of society and the

development of science and technology and art. Therefore, efforts to improve the quality of education should be done continuously.

The quality of education is always seen in the ability of graduates of an education level, ranging from elementary school, until to the college. The ability of graduates who are also often referred to as the competence of graduates is the ability to perform a task or job. This capability consists of aspects of knowledge are, skill aspect, and behavioral aspect. Aspect of knowledge as part of the cognitive domain is the level of thinking, skills aspect is the psychomotor domain is the ability of motion, and the affective aspect is associated with behavior. This ability is achieved through the learning process at school.

Efforts to improve the quality of education can be pursued through improving the quality of learning and quality of assessment system. The Both are interrelated, a good learning system will produce a good quality of learning. The quality of this learning can be seen from the results of the assessment. Furthermore a good assessment system will encourage educators to teach better and motivate learners to learn better. Therefore, in an effort to improve the quality of education required a good assessment system (Djemari, 2016).

Efforts to improve the quality of education should be systematic and systemic. Systematic in the sense is the efforts to improve the quality of education should be done through a certain procedure, while systemic quality improvement efforts of pay attention to all related changes. One of the efforts needs to be done is to "photograph" the current state of education. Shooting is done through measurement, assessment, and evaluation activities. The results of this shoot are used to determine the upcoming improvement program.

To find out how far the potential has been developed learners, required evaluation. According to Zainal Arifin (2014) in the world of education, one of the competencies that must be mastered by the teacher is the evaluation of learning. This competence is in line with the responsibility of teachers in learning

that is evaluating the learning including it is carrying out the assessment and learning outcomes and the ability of teacher instruments, one of the indicators is to evaluate the learning.

Based on Bab XVI Pasal 57 paragraf 1 of the same law, it states "evaluation is conducted in the context of quality control of education to be interested parties". These stakeholders, including: learners, institutions, and educational programs. In the learning system, evaluation is an important component and the stage must be taken by the teacher to know the effectiveness of learning. The results obtained from the evaluation can be used as *feed backs* for teachers to improve and perfect the learning activities that have been done (Arifin 2014). In relation to the evaluation of learning, Law of the Republic of Indonesia Number 20 of 2003 on National education system Bab XVI Pasal 57 paragraf 1, states "evaluation of learners learning outcomes conducted by educators to monitor the process, progress, and improvement of students' learning outcomes on an ongoing basis".

Evaluation is a process of planning, obtaining and providing information that is very important to make alternative decisions. The information collection should be appropriated to data and supported to the planned objectives. The evaluation can provide information about students' learning outcomes from the achievement of classroom teaching objectives. In Evaluation required information concerning the object being evaluated. In the process of teaching and learning process, the data in question is the data in the form of behavior or appearance of students during the learning process, the results of the test and final exam of the semester. To see the learning outcomes, must follow the evaluation procedure in accordance with the form of test or evaluation tool which will be used to assess the teaching outcome and refer to the materials and use teaching methods and the teaching objectives that have been formulated.

Purwanto (2014) suggests that the evaluation is a systematic effort to understand students' abilities and progress in before, during, and after the learning

process, through data collection, and comparing with certain norms or criteria. Curriculum now is used by most of education unit in Indonesia that is Curriculum 2013 (revision). According to Regulation Of The Minister Of Education And Culture Of Republic Of Indonesia Number 104 of 2014 article 2, verses 1,2 and 5 on the assessment of learning outcomes by educators in primary and secondary education "(1) assessment of learning outcomes by educators is conducted in the form of authentic and non-authentic assessments; (2) The Authentic Assessment as referred to in paragraph (1) constitutes the main approach in the assessment of Learning Outcomes by Educators (including field assignments, portfolios, projects, journals, laboratory work, and performance and self-assessment); (5) The form of non-authentic assessment as referred to in paragraph (1) includes tests, tests and examinations".

The test of learning outcomes is a test used to see the results of lessons that have been given by the teacher to learners within a certain period of time. In implementing the learning outcomes, a teacher can use two kinds of tests that are standardized test and the teacher's own test. The test that will be carried out in this research is the teacher's own test. The test has not undergone a standardization process.

A test is an activity or a systematic process of measuring one's ability. Test activities always use a tool that is also called a test. The test is defined by a number of tasks that the subjects answered true or false, or the number of tasks that the subjects performed successfully or failed, so that the ability of the subject can be expressed by scoring or judging on a certain scale (Sudijono, 2012).

According to Sudjana (2013), There are two kinds of tests, namely test results and psychological test. The test of learning outcomes there are two forms of problem namely the test form description and multiple choice test. A good test is prepared in accordance with the procedures and principles of test preparation. A good test can be used over and over with a few changes. Poor tests should be discarded, even if they are not used to give value to students.

The test can be said to be qualified, if in the preparation of test questions pay attention to the validity, reliability, difficulty level, distinguishing power, Distracter effectiveness , as well as the suitability of the questions with competence standards and basic competencies. In addition, the compilation of the problem should also take into account the distribution of its cognitive domain levels, including: knowledge (C1), understanding (C2), application (C3), analysis (C4), synthesis (C5), and evaluation (C6). Based on the explanation, it can be concluded that the quality of the test is very important to note, because the quality of the test will be used as a consideration in decision-making learning outcomes of learners. Thus, before the test questions are given to the learner, the teacher must know the quality of the questions through the activity of questions analysis.

The questions analysis is an activity that must be done by the teacher to improve the quality of the test that has been prepared. Anastasi and Urbina (1997) in the Ministry of National Education (2008) stated "the main objective of the questions analysis in a test the teacher made was to identify the lack of deficiency in tests or in learning ". Furthermore Anastasi and Urbin (1997) in Ministry of National Education (2008) suggests Questions analysis activities have many benefits, among they are: (1) can help the test users in the evaluation above the tests used, (2) are very relevant for the preparation of the test Informal and local issues such as tests prepared by teachers for students in the classroom, (3) support the writing of effective questions, (4) can materially improve the classroom tests, and (5) improve the validity of the problem and reliability.

The analysis of points in this study can be done qualitatively and quantitatively. In qualitative problem analysis, the aspects studied include: the material, construction, language, and distribution of the cognitive domain. Problem analysis quantitative, the aspects studied include validity, reliability, difficulty level, distinguishing power, and distracter effectiveness of its deception. Quantitative analysis of this research will use computer program is ANATES V4.0.9. The problem to be analyzed by researcher is a matter of odd semester exam. Semester Examination is included in the category of

summative test. The summative test is a type of test performed at the end of the lesson and is intended to measure the success of learners in mastering overall learning objectives that have been set. Therefore, the summative test value is to be made as a record of student learning progress and determinants learners may or may not continue the next program.

Odd semester exam is conducted based on an educational calendar. SMA N 1 PERBAUNGAN has implemented lessons based on Curriculum 2013 of revision. On December 4<sup>th</sup> – 9<sup>th</sup> of 2017, all students of SMA N 1 Perbaungan had been conducted the semester examination of academic year 2017/2018. Results of interview with one of the class X chemistry teacher named Mrs. Rosna , informed that they were directed to analyze the questions based on qualitative analysis to see the difficulty level of problem and the conformity of the problem to the indicator, so it is not known the quality of the questions which has been prepared on the basis of quantitative analysis . Mrs. Rosna said: "It is true that the analysis of the questions has been done, but the questions analysis has not yet reached the appropriate standard with the Ministry of National Education because according to Mrs.Rosna, the result of the questions analysis depends on the students.

Many researchs of questions analysis have been studied and done. That matter is still interesting to be held further research, both of which intend complete or new. Test analysis is very useful for the world education especially in the field of education evaluation. Therefore, the author interested in conducting research on Questions matter analysis. Research about analysis of questions that can be used as research in the research of Deradi and Raras .

Deradi Harsi from the State University of Yogyakarta, in 2016 conducted a research entitled " *Analisis Kualitas Butir Soal Ujian Akhir Semester Ganjil Mata Pelajaran Pemrograman Web Di SMK Kelas X Teknik Komputer Jaringan Kota Yogyakarta Tahun Ajaran 2015/2016*". The result of his research shows the quality of the final exam of the odd semester of Web Programming at SMK Class

X Computer Engineering Network Kota Yogyakarta The teachings of 2015/2016 are still low with details: (1) Only 7 questions (5%) are of very good quality, (2) 26 (17%) of good quality, (3) 37 questions (25%) of medium quality, (4) 33 questions (22%) of poor quality, (5) 47 questions (31%) which quality is not very good.

Raras Duhita from the State University of Yogyakarta, in 2015 conducted a study entitled "*Analisis Butir Soal Ujian Akhir Semester Gasal Mata Pelajaran Pengantar Akuntansi Kelas X Akuntansi SMK Negeri 1 Godean Tahun Ajaran 2014/2015*". The results showed that; (1) The quality of item on the choice of double 1 question (10%) quality, 5 problem (50%) less quality, 4 problem (40%) is not good. (2) In terms of validity, a valid question on the problem of multiple choice amounted to 8 questions (80 (3) In terms of reliability, multiple choice questions have a high reliability level of 0.75 (4) Judging from the distinguishing power, questions about multiple choice 4 questions (40%) including weak category, 3 problem (30%) including enough category, 2 problem (20%) including good category, and 1 item (10%) including excellent category. in terms of difficulty, on multiple choice questions there are no questions that include difficult category, 1 problem (10%) including medium category, and 9 questions (90%) including easy category. (6) (0%), 1 problem (10%) including sufficient category, 4 problem (40%) including bad category, and 5 problem (50%) including bad category.

Based on the description of the compilation of the questions that have been done, it is known that the odd semester exam of chemistry subject class X SMA N 1 PERBAUNGAN is tested without going through the stages of analysis of questions quantitatively. By therefore, the authors need to do research on the analysis of questions with title "**QUESTIONS ANALYSIS OF CHEMISTRY ODD SEMESTER EXAMINATION OF CLASS X SMA N 1 PERBAUNGAN ACADEMIC YEAR 2017/2018**". The existence of this research is expected to provide a real overview about evaluation of semester exam questions that have been compiled and made input for further compilation.

## 1.2. Identification of questions

From the Background problem, which has been put forward can be identified several questions that can be researched:

1. Not yet done the item analysis to know the quality of the questions used in the Odd Semester Exam.
2. Not yet known the quality on the Odd Semester Exam subjects Chemistry Class X academic year 2017/2018.
3. Not yet measured of cognitive domain level in odd semester examination of chemistry class X of academic year 2017/2018.
4. The Odd Semester Exam of the chemistry subjects of class x academic year 2017/2018 are tested without going through the stages of quantitative analysis.
5. Not yet known the implementation of the test on the Odd Semester Exam of Chemistry subject class X SMA N 1 Perbaungan academic year 2017/2018.

## 1.3. Scope of the Study

Based on the identification of the issues that have been put forward, problem restrictions are needed to make the research more effective, efficient, directed, and can be studied more deeply. Questions limiting in this research are:

- (1) Basic competence used in the compilation of questions was based on curriculum 2013 (revision).
- (2) The object of analysis in this study was questions of Semester Test of chemistry subject class X SMA N 1 Perbaungan academic year 2017/2018
- (3) The research analysis was devoted to the question of multiple choice in the Odd Semester Examination of chemistry class X SMA N 1 Perbaungan 2017/2018



- (4) Quantitative analysis in this study used answer sheet students on the matter of Odd Semester Examination of chemistry subject class X SMA N 1 Perbaungan academic year 2017/2018
- (5) Interview of test execution on Odd Semester Exam subjects chemistry class X SMA N 1 Perbaungan 2017/2018
- (6) Quantitative analysis in this study used program assistance is Anates V4.0.9
- (7) Qualitative analysis in this study was review of material, construction, language / cultural, and key answers / scoring guidelines using panel technique and using analysis of cognitive domain distribution

#### **1.4. Problem Formulation**

The problem formulation is a detail of the problem that needs to be solved in the research. The formulation of the problem contains the necessary questions answered by research. Based on the identification and limitation of the questions, the following questions can be formulated:

- (1) How is the quality of the multiple choice questions on the Odd Semester Examination of chemistry class X SMA N 1 Perbaungan 2017/2018?
- (2) How is the distribution of levels of the measured cognitive domain in the multiple choice questions of Odd Semester Exam of chemistry subjects class x SMA N 1 Perbaungan 2017/2018?
- (3) How is the quality of the multiple choice questions on the Odd Semester Examination of chemistry grade x SMA N 1 Perbaungan of the academic year 2017/2018, reviewed from validity, reliability, difficulty level, differentiation power, and distracter effectiveness?
- (4) How was the implementation of the examination on the Odd Semester Examination of chemistry class x SMA N 1 Perbaungan of academic year 2017/2018?

## **1.5. Research purpose**

The purpose of research is the direction to be achieved by the author in the study. The purpose of this study contains a statement of information (data) what will be explored (known) through research. The purpose of this study consists of two purposes, including general and specific goals. The description is as follows.

### **1.5.1 General Purpose**

General purpose in this research is the goal to be achieved in general writer after conducting research. General purpose refers to the formulation of the problem. The general purpose of this research is to improve the quality of evaluation on the subjects of chemistry class X.

### **1.5.2 Specific Objectives**

The specific purpose of this study is the elaboration of the general objectives. Specific objectives contain something to be achieved in research in particular. Specific objectives of this research are:

- (1) To know the qualitative analysis of multiple choice questions on odd semester exam of chemistry subject class X SMA N 1 Perbaungan in terms of material, construction and language aspects
- (2) To know the distribution of measured level of cognitive domains from multiple choice questions on odd semester examination of chemistry class X SMA N 1 Perbaungan and
- (3) To Know quantitative analysis of multiple choice questions in odd semester examination class X SMA N 1 Perbaungan that viewed from validity, reliability, difficulty level, distinguishing power, and distracter effectiveness of its outsiders.

## **1.6. Benefits of research**

The results of this study are expected to have benefits, among others as follow:

### 1.6.1 Theoretical Benefit

Theoretical benefit is benefit of research result that correlated with knowledge related to research object. Theoretical benefit of this researched are expected to: (1) produce concepts that considerable value for education world especially education evaluation area and (2) Make into the important material for other researchers to do research of a kind or continue the research widely and deeply.

### 1.6.2 Practical Benefit

Practical Benefit is benefit of research result that related to some parts need such as teachers, students, school to do research more continue. Practically, this research can give benefit for: (1) Teacher, (2) School.

Benefits of this researched are expected for teacher namely: (1) Giving information about the quality and quantitative of odd semester questions, (2) As material for determine effective polices in teaching and learning activity, superior related to evaluation.

For school, this research has benefit as information about quality and quantitative of examination questions that made by teacher. In addition, also benefit as material to determine effective polices in teaching and learning activity.