

CHAPTER I

INTRODUCTION

1.1 Background

Science has always been an important aspect of everyday life. It existences has help human being to ease their activities, including processing information, especially in educational process. Ali Khan, Shah, Makhdoom, Mahmood, & Zareen (2012) stated that there are three major goals of science education, those are including development in science knowledge (cognitive domain), science process skills (psych motive domain) and scientific attitude (affective domain). The current curriculum used in Indonesia is *Kurikulum 2013* which also emphasize attitude, skill, and knowledge through scientific approach (Dewantari, 2015). *Kurikulum 2013* was designed to improve the quality of human resources in Indonesia for; facing the challenges and needs in 21st century era, increasing competitiveness of Indonesian students in PISA, TIMMS, and other international assessment, also to prepare the golden human resource potential in decades ahead (Kadarwati & Suroso, 2016).

However, the assessment of scientific attitude as affective domain is not as easy as the two others. It's amount of research cannot grow proportionally (Punia & Bala, 2014), because of the hesitation to use affective measures for grading purposes and the result that develop slowly compared to assessment in cognitive aspect (Krathwol, Bloom, & Masia 1964). This lack of assessment in scientific attitude has made Flegg & Hukins (2010) believed as the factor that is causing poor scientific orientations among science students which cause a decrease in several aspects of students' daily activities in the society; such as productivity, development, and values.

The poor scientific attitude of Indonesian students was brought by Pellini (2016) that based on Program for International Student Assessment (PISA) Report 2015, the performance of Indonesian students been on the lowest in science, mathematics, and reading along with being ranked 62nd out of 69 countries

participated. It was because only small amount of Indonesian students expect to have a career in science compared to another participating countries in PISA. Suprpto (2016) support the statement by stated that Indonesia has less science contexts, competencies, knowledge, and attitudes compare to other East Asian countries and Singapore.

Curry & Adams (1991) explained that to acquire knowledge, skills or attitudes, learning style is needed as the habitual manner. Federico (2000) said that by understanding students' learning style, students can improve their planning, producing, and implementing of educational experiences, thus the analysis of student attitudes and learning styles will help in designing, developing, and delivering more effective and efficient educational environments. The concept of learning style is a diversity of individual's preference towards learning approaches (Joy & Kolb 2009). Students in the classroom may have their own preferred learning style, but those learning styles will generally covered: (1) an attempt to learn maximum knowledge, solely from the lecturer (authority) for later regurgitation or (2) an ongoing commitment to learn and reorganize knowledge, particularly in collaboration with peers and e.g., the lecturer (El-Farargy, 2010).

Thus, to reduce the lack of assessment in affective domain and to help students in acquiring scientific attitude, this research bring the urge to develop a suitable measurement of students' scientific attitude, analyzing students' learning style, and finding the possible relationship between them into an analysis of students' scientific attitude and students learning style survey.

1.2 Research Problem

The research problem of this study is "How is The Relationship between Students' Scientific Attitude and Students' Learning Style in Junior High School?"

1.3 Research Question

Elaborating the research problem, the research attempts to explore the following questions:

- 1) How is the profile of Students' Scientific Attitude in "X" Junior High School?
- 2) How is the profile of Students' Learning Style in "X" Junior High School?
- 3) How is the relationship between Students' Scientific Attitude and Students' Learning Style?

1.4 Limitation of Problem

In order to reach the objective of the research, the problems that will be covered in this research need to be limited. The limitations are defined as:

- 1) Students' Scientific Attitude refers to the profile of Scientific Attitude in the 9th grade students of "X" Junior High School in Bandung. The profile will be obtained through Scientific Attitude Questionnaire that has five aspects in measuring Students' Scientific Attitude of "X" Junior High School in Bandung. Those five aspects are value of students scientific attitude that later can help profiling Students' Scientific Attitude into Low, Average, and High level of scientific attitude.
- 2) Students' Learning Style refers to the profile of Learning Style in the 9th grade students of "X" Junior High School in Bandung. The profile will be obtained through Visual, Auditory, and Kinesthetic (VAK) Learning Style Inventory that consist of 30 statements with three choice of each statement representing visual, auditory, and kinesthetic learning style preference. The choices chosen by students will be accumulated and later be analyzed as their preferred learning style (visual, auditory, or kinesthetic).
- 3) Relationship between Students' Scientific Attitude and Students' Learning Style refer to the possible relationship that might obtain between the two variables. The relationship that might be analyzed are embracing the

relationship between five aspects of Scientific Attitude towards VAK Learning Style, the relationship between indicators from each aspect of Scientific Attitude towards VAK Learning Style, and the relationship between level of Students' Scientific Attitude towards Students' Learning Style.

1.5 Research Objectives

This research is conducted to analyze students' scientific attitude based on their learning style in Junior High School. Towards the given problem, the objectives of this research are:

- 1) To profile the level of Students' Scientific Attitude in Junior High School.
- 2) To profile the most preferred Students' Learning Style in Junior High School.
- 3) To find the relationship between Students' Scientific Attitude and Students' Learning Style.

1.6 Research Benefits

1.6.1 For students

- 1) Students will be able to acknowledge their scientific attitude level. By knowing their scientific attitude, students with low and average level of scientific attitude might improve their level of Scientific Attitude, while students with High level of Scientific Attitude might be able to value the opportunities of being a scientist.
- 2) Students will be able to acknowledge their preferred learning style. By knowing their preferred Learning Style, students will be able to develop their attitudes and receive information in the way they are suitable with. Thus, their understanding, achievement, and interest in learning also must be increased.

1.6.2 For teachers

- 1) By acknowledging the level of Students' Scientific Attitude, teacher might be able to encourage students with low and average level of Scientific Attitude to increase their level of Scientific Attitude.

Teacher will also be able to maintain the attitude of students with high level of Scientific Attitude and help them in orientating their view towards opportunities of being a scientist.

- 2) By acknowledging Students' Learning Style, teacher might be able to improve Students' Scientific Attitude in the way they can learn best. Teacher will also be able to perform more suitable teaching approach that might help in increasing students' performance in class.

1.6.3 For another researcher

- 1) By analyzing the process of Scientific Attitude Questionnaire development and the questionnaire itself, another researcher might be able to adopt or adapt the questionnaire for their future research regarding Scientific Attitude.
- 2) By analyzing the use of VAK Learning Style Inventory another researcher might be able to use this learning style inventory as a referral instrument to analyze the learning style of their research subject.
- 3) By analyzing several relationships between Students' Scientific Attitude and Students Learning Style in this research, further researcher might be able to use the information as supporting data or reference for further research in Scientific Attitude and/or Learning Style.
- 4) By analyzing the overall process and result of this research, another researcher will be able to identify the strengths and weaknesses of this research that might help them in developing a better research in the same or different field of interest.

1.7 Organizational Structure of Research Paper

This research will be constructed in total of five chapters and several additional pages. Chapter I: Introduction: includes the lack of assessment and research in affective domain – especially scientific attitude, low performance of Indonesian students' according to 2015 PISA rank, and the capability of learning

style in acquiring skills, knowledge, and attitude. Chapter II: Literature Review includes concepts, theories, and prior research related to Scientific Attitude and Learning Style. The importance of writing this chapter is to make sure that this current research has a strong scientific foundation to be done. Chapter III: Methodology explains that this research will be conducted in Survey Research Design with 110 students randomly chosen as sample from the population of 9th grade students' in "X" Junior High School. Operational definition of this research will also be explained in this chapter along with two questionnaires being used in this research. Chapter IV: Analysis and Discussion consists of the development of Scientific Attitude Questionnaires with its analysis and result obtained from both instruments. Chapter V: Conclusion and Suggestion, includes the deductively taken conclusion of the research, and an exposure of the research that can be taken as suggestion for further research.