



**A COMPARATIVE STUDY OF PHYSICS  
CURRICULUM IN SLIM RIVER ISLAMIC  
SECONDARY SCHOOL PERAK MALAYSIA WITH  
INDONESIA**

**bachelor thesis  
served as a requirement  
to achieve academic bachelor-degree  
Study Program: Physics Education**

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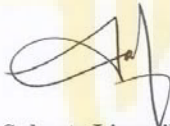
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## ADVISOR APPROVAL

Bachelor thesis with the title **A Comparative Study Of Physics Curriculum In Slim River Islamic Secondary School Perak Malaysia With Indonesia** has been approved by the advisor to be served to the committee of bachelor thesis examination in Physics Department of Mathematics and Natural Sciences Faculty of Semarang State University INDONESIA.

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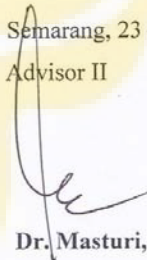
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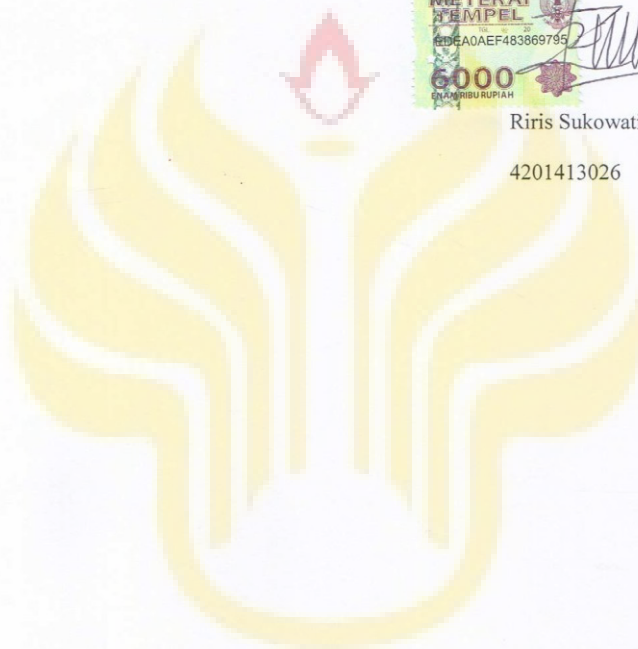
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## RATIFICATION LETTER

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## MOTTO AND DEDICATION

### Motto

- Nothing is impossible
- Success need a process
- Always be yourself no matter what they say and never be anyone else even if they look better than you

This bachelor thesis is dedicated for:

- *My Beloved Family Mr Wahadi, Mrs. Komidah, Kaki & Nini Tatam, Eyang Markhawi, Kaki & Nini Kadimeja, thanks for the prayers, affection and struggle in guiding my steps.*
- *For Mr. & Mrs Lecturer of Physics thanks for the guidance.*
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The writer realizes that this bachelor thesis isn't completely perfect thus it still require any feedback for the next research. Hopefully, this bachelor thesis can be useful for the reader, teacher, and students.



Semarang, 21 Mei 2017

Writers

## ABSTRACT

Sukowati, R. 2017. *A Comparative Study of Physics Curriculum in Slim River Secondary School Perak Malaysia with Indonesia*. Thesis, Physics Department, Faculty of Mathematics and Natural Sciences, Semarang State University. First Advisor: Dr. Suharto Linuwih, M.Si and Second Advisor: Dr. Masturi, M.Si.

Keywords: Comparative Study, Curriculum, Implementation.

Comparative study of education becomes one way to explore various aspects relating to the particular state education system. Those especially related to the strength and the weakness of the country's education system. In order to enhance the quality of education in Indonesia, it is necessary to study and compare to the other countries education system by reviewing and studying the curriculum as reference and national curriculum benchmark for better progress. Malaysia becomes potential to be reviewed due to this country geographically close to Indonesia thus both they have similarity in socio-cultural matters. This study aims to determine the curriculum of physics subjects in Malaysia, especially in Slim River Islamic Secondary School and its implementation and then compared with the physics subject curriculum in Indonesia. Methods of this research are observation, documentation, interviews, and questionnaires. The research analysis used descriptive qualitative. The curriculum of physics subjects at Slim River Islamic Secondary School is set in the Kurikulum Bersepadu Sekolah Menengah (KBSM). KBSM Curriculum emphasizes inquiry approach, thinking strategy and thinking learning in teaching and learning process. The curriculum implementation at Slim River Islamic Secondary School is good enough, in terms of making a daily teaching design based on the syllabus, inserting patriotism values in learning, and the percentage of teachers' role in learning is quite high. According the results of scale analysis of the role of teachers in the implementation of Physics learning in the class showed an average percentage of 89.058% which shows a very good percentage. Based on the results of the analysis of physics material showed physics material or topics should be studied by secondary level is lower than in Indonesia. Basic competence in the subject of physics in Indonesia is much more than in Malaysia.



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# CHAPTER 1

## INTRODUCTION

### 1.1 Research Background

Education is one of the most influential factors in sustaining and developing a community's culture. It might work as a machine which can rebuild a society. The quality of a country's education is a parameter of advancement and prosperity of the people.

Every country has different education system deal with the national goals. It causes diversity in education. As in China, their education system is start from central (country) level, province, city, and town. State Education Commission of China (SEDC) is in charge to carry out the education. It is government's professional organization in developing the education. The structure of education system in China includes elementary education, vocational and engineering education, higher education, and education for adult learners. In South Korea, the minister of education has power and authority for running education. There are boards of education in every region. Generally, South Korea education system consists of four levels, namely elementary school, junior high school, senior high school, and higher education. Those four levels are parallel to grade 1-6 (SD), 7-9 (SLTP), 10-12 (SLTA) and 13-16 (University) and also master degree. In Japan, the responsibility of education in national level is carried by the Ministry of Education, Science and Culture.

Ministry gives manual for arranging course and credit requirements from kindergarten until university. They are responsible for developing text book for elementary and high school (Riyana, 2008: 1). Studying other country's education system is essential in order to create a better education in Indonesia and achieve national education goals.

Constitution 1945 instructs that the establishment of Indonesia Government is to educate people. For making it true, Constitution 1945 section 31 (3) mention that government should struggle and carry on national education system, which enhancing faith and good behavior in order to educate the nation, which is regulated in constitution (Kemendikbud, 2012: 1).

Education Institution is established to educate people to follow the guideline. National education, as one of the national development sector has a vision to bring into reality the education as a strong and authoritative social regulation for empowering Indonesian people to be qualified so they are able and active to face the dynamic challenges.

There are so many education resources. Curriculum becomes one of the elements which contribute significantly for running the process of developing the quality of students' quality (Kemendikbud, 2012:2). Curriculum contains planned experiences to be gained by students.

Indonesia is currently implementing the *Kurikulum 2013* or so called "*kurtilas*" results of the improvement of *Kurikulum Tingkat Satuan pendidikan*. Until now Indonesia is still developing the *Kurikulum 2013* by always evaluating the shortcomings that exist for the achievement of education in accordance with

national education objectives. The importance of the curriculum in making a significant contribution in realizing the process of developing the potential qualities of learners, led to various countries developing curriculum to improve the quality of education in the country.

Comparative study of education is one way to find out various aspects relating to particular state education system, especially those related to the advantages and disadvantages of the country's system. To improve education in Indonesia, it must consider the education system of other countries, one of which is a Malaysia is geographically close to Indonesia and have a similarity in social culture aspect.

Based on Human Development Index (HDI) value and rank, Malaysia's HDI value for 2015 is 0.789 which put the country in the high human development category positioning it at 59 out of 188 countries and territories. While Indonesia's HDI value for 2015 is 0.689 which put the country in the medium human development category positioning it at 113 out of 188 countries and territories ( Human Development Report, 2016: 2).

Malaysia is one of the countries that always refine the curriculum being applied. The curriculum in Malaysia is a blueprint of education that includes all the experiences that have been planned for learners. Malaysia is one of the few countries that leads to education and considers that education is a very important thing for social and economic development of government (Ministry of Education Malaysia, 2012: 4).



The Malaysian school curriculum is committed to developing the child holistically along intellectual, spiritual, emotional, and physical dimensions, as reflected in the National Education Philosophy (Ministry of Education Malaysia, 2012: 16).

To improve the education system in Malaysia, The Malaysian Government has sustained high levels of investment in education over the 55 years since independence. As early as 1980, the Malaysian federal government's spending on primary and secondary education, as a percentage of Gross Domestic Product (GDP), was the highest in East Asia (Ministry of Education Malaysia, 2012: 8).

According to Baro and Lee as quoted in *Ministry of Education Malaysia* (2012: 6-10), In 2011, Malaysia had achieved near universal enrolment at the primary level at 94%, and the percentage of students who dropped out of primary school had been significantly reduced (from 3% in 1989 to just 0.2% in 2011). Enrolment rates at the lower secondary level (Form 1 to 3) had risen to 87%. The greatest improvement was undoubtedly at upper secondary level (Form 4 to 5), where enrolment rates had almost doubled, from 45% in the 1980s, to 78% in 2011. In parallel, there has been a rapid expansion in preschool education. About 77% of students are now enrolled in some form of general or private preschool education. The data above shows that education in Malaysia has increased positively, of course the increase is offset by a good education system.

The development of education in Malaysia with Indonesia is quite different. Factors affecting the development of education between Indonesia and Malaysia are also different. Malaysia is a British colony and colonized by the

British from 1786 to 1946. Malaysia has been colonized by Britain for 160 years, therefore the development of education in Malaysia is not separated from the influence of the education system in the UK. Malaysia is a multiethnic country. Ethnic pluralism in Malaysia is also an influential factor in the development of education there. Therefore, to unify the pluralism, Malaysia uses the basis of national education.

Comparative study of education as one part in the field of education has tangible benefits, especially as a consideration to improve the quality of education in a country. By seeing and assessing the advantages of the education system in other countries, so that it can learn various things from the country and use it for the betterment of education in the country. In order for education in Indonesia good, it is necessary to review the education system of other countries one of them by reviewing the curriculum in the country as a reference and the national curriculum benchmarks for the better.

The Slim River Islamic School (SRISS) is one of the leading religious high schools in Malaysia. This research wanted to know how the education system in Malaysia especially the curriculum used in the subject of physics at the Slim River Islamic School (SRISS). Implementation of the curriculum is also a study in this research. After knowing the curriculum of physics subject in Malaysia and how its implementation then will be compared descriptively with curriculum in Indonesia which is in effect that is *Kurikulum 2013* Revision.

## 1.2 Research Question

Based on the description of the background, the research questions raised in this study are as follows:

1. How is the curriculum of physics subjects used in Slim River Islamic Secondary School?
2. How is the implementation of curriculum physics subject in Slim River Islamic Secondary School and In Indonesia?
3. How is the Comparative Curriculum of Physics Subjects Used at Slim River Islamic Secondary School with Indonesia?

## 1.3 Research Objectives

Based on the previous research questions, the objectives of this study are:

1. Knowing the curriculum of physics subjects used in Slim River Islamic Secondary School.
2. Knowing the implementation of physics curriculum used in Slim River Islamic Secondary School.
3. Knowing the comparison of physics curriculum at Slim River Islamic Secondary School with in Indonesia.

## 1.4 Research Benefit

Based on the aims and objectives of the research that have been determined, this research is expected to provide benefits for students and readers.

The expected benefits of research are:

1. As a reference in decision making and provide detailed alternatives in curriculum planning.
2. Assisting scholars (having interest in the curriculum) as stimulate for further research.
3. As a reference material for teachers in developing learning activities.
4. As reference materials in developing or refining the existing curriculum in Indonesia.
5. As reference material for students to do further research.

## **1.5 Research Boundary**

In this study, the boundary of the problem used is that this research is only conducted to find out and describe the curriculum of physics subject that is being used in Malaysia especially in Slim River Islamic Secondary School, and compared to curriculum which is being applied in Indonesia that is the 2013 curriculum from material aspect and implementation.

## **1.6 Term Affirmation**

To avoid different interpretations and embody the views and meanings associated with the title of the proposal that the authors propose, it is necessary to affirm the following terms:

### **1.6.1 Curriculum**

In terminology, the curriculum means an educational program that contains various teaching materials and learning experiences programmed,

planned and systematically designed on the basis of applicable norms and used as guidelines in the learning process for educators to achieve educational goals (Darkir, 2004: 3).

### **1.6.2 Implementation**

Implementation of learning according to Suryani in Husamah (2013: 105) states that implementation in learning includes three stages that cannot be separated from one another, namely planning, implementation, and evaluation.

## **1.7 Systematic of Bachelor Thesis**

Thesis is divided into three parts, namely the preliminary part of the thesis, the content of the thesis, and the final part of the thesis. The initial section consists of title page, validation page, motto, offerings, introduction, abstract, table of contents, attachment list, list of images, and table lists. In the contents of the thesis consists of the following:

CHAPTER 1 INTRODUCTION. This chapter contains the background of the research, the research questions, the objective of the research, the benefit of the research, the boundary of research, affirmation of terms, and systematical thesis writing.

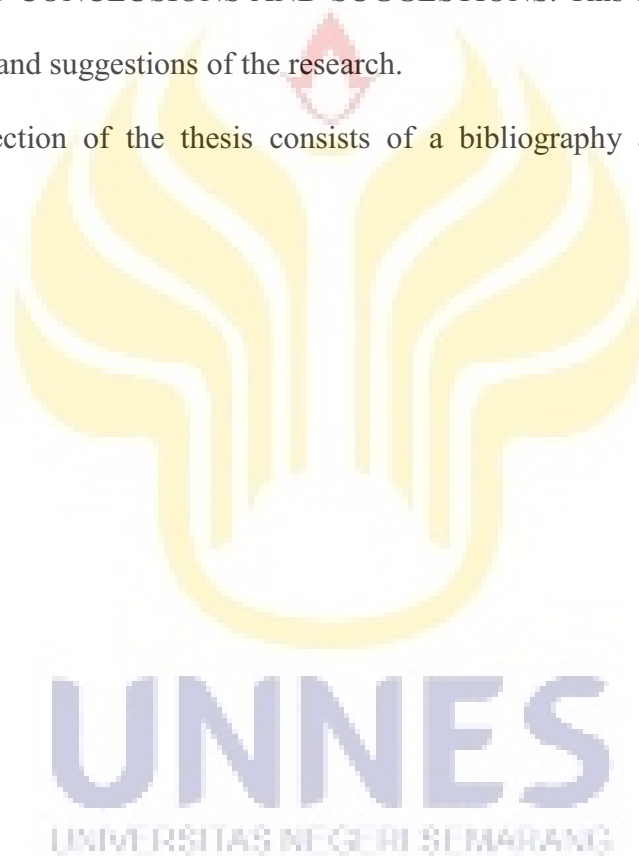
CHAPTER 2 LITERATURE REVIEW. The literature review contains the theories that support the research.

CHAPTER 3 RESEARCH METHODOLOGY. This chapter covers matters relating to research, including: type of research, location and subject of research, research instruments, data retrieval methods, and methods of data analysis.

CHAPTER 4 RESULTS AND ANALYSIS. This chapter contains the results of the research and discussion.

CHAPTER 5 CONCLUSIONS AND SUGGESTIONS. This chapter contains the conclusions and suggestions of the research.

The final section of the thesis consists of a bibliography and an attachment.



## **CHAPTER 2**

### **THEORETICAL REVIEW**

#### **2.1 Learning Definition**

Learning activities within the overall education activities in schools is the most basic activities. This implies that the success of the achievement of educational goals depending on how the process of learning experienced by learners.

Learning is a process of thinking focuses on the process of seeking and finding knowledge through interaction between individuals and their environment. In learning to think the education process in schools not only emphasize on the accumulated knowledge of the subject matter, but the main priority is the student's ability to acquire knowledge itself (self-regulated) (Sanjaya, 2007: 107).

Slameto (2003: 13) stated "learning is a process of effort by a person to gain a whole new behavioral change, as a result of his own experience in interaction with his environment". To get something someone must make efforts to make what is desired can be achieved. The effort can be either self-employed or group work in an interaction.

Learning is an ongoing process, which never stops and is not limited to the classroom walls. This is based on the assumption that throughout his life man will always be faced with the problem or goal he wants to achieve. In the process of achieving that goal, humans will be faced with various obstacles.

The principle of lifelong learning in line with UNESCO which quoted from Sanjaya (2007: 110) which launched the four pillars of learning approach. The approach is used by teachers in carrying out their duties as education agents, the four pillars are:

- a. learning to think
- b. learning to do
- c. learning to be
- d. learning to live together

Learning is a combination that consists of human elements, materials, facilities, equipment, and procedures that affect each other to achieve learning objectives (Hamalik, 2013: 57).

## **2.2 Physics Learning**

Physics is an empirical natural science which aims to understand and explain the basic structure and phenomena of nature, using information derived from nature by means of experimental methods. The aim is to discover universally applicable laws of nature and to represent these in the form of mathematical models. The experimental nature of physics may depending on the theme, stage of instruction and tools be implemented through students' own independent work, demonstrations from teachers or study visits, videos or lectures. Experimentation will be used to support students as they absorb new scientific concepts, principles and models. Studies in physics will develop students' experimental and co-operation skills. Experimentation will help students to perceive the nature of the



natural sciences and will support development of their scientific thinking (Finland Ministry of Education, 2003: 145).

Every moment in life happens teaching and learning process whether intentional or not and whether consciously or unconsciously. The learning process will produce something called learning outcomes or also called achieving learning goals (Sardiman, 2004: 19). Physics is a subject in high school which is one of the branches of Science (Natural Science) subjects. According to Yulianti & Wiyanto in Utami (2015: 7), physics is a part of science that studied about matter and energy in all forms of its manifestation, and is a product and process which can be interpreted that in teaching physics that the subject of learning (student) must be involved physically As well as mental in problem solving.

### **2.3 Definition of Curriculum**

The term “curriculum” is used at various levels of inclusiveness in educational discourse. Sometimes it refers only to a set of guidelines as to the content of instruction, in other cases to curriculum plans which may be quite detailed in the sense of incorporating specifications as to instructional objectives, content, and methods (Skager & Dave, 1977: 23).

According to Payne (1974) in Skager & Dave (1977: 24) curriculum actually experienced by the learner, incorporates everything, planned and unplanned, that has any significant bearing on what is learned.

According to Skilbeck (1982: 2) the word “curriculum” in current usage refers to the whole set of learning experiences made available to students through

the school or equivalent institution. These experiences include, but go beyond, syllabus-dominated learning in classrooms. Curriculum in the wider sense just defined gives rise to questions about the purpose and nature of schooling. These related to its contribution, or otherwise, to the learners education (as distinct from his socialization), the values communicated through school experiences, and the role of the school as an agency of community, social, cultural and other forms of national and international development.

In all human societies, children are initiated into particular modes of making sense of their experience and the world about them, and also into a set of norms, knowledge, and skills which the society requires for its continuance. In most societies most of the time, this “curriculum” of initiation is not questioned; frequently it is enshrined in myths, rituals, and immemorial practices, which have absolute authority (Egan, 2003: 9).

Curriculum is often one of the main concerns in the educational field. There are a variety of definitions in relation to the term “curriculum”. According to Pratt, Barrow and Milburn in (Wen su, 2012: 153), the word “curriculum” is derived from the Latin verb *currere*, “to run.” “*Currere*” became a diminutive noun and meant a “racing chariot” or “race track.” An extension was made by Cicero who associated the term with *curriculum vitae* that means “the course of one’s life.” He also associated it with *curricula mentis* that metaphorically refers to “the (educational) course of the mind.” It was not until the nineteenth century that the term was commonly used in the educational field.

J. Galen Saylor and William M. Alexander in Nasution (2014: 5) The Curriculum is the sum total of the school's effort to influence learning, whether in the classroom, on the playground, or out of school.

Harold B. Alpertus in Nasution (2014: 5). Viewing the curriculum as all of the activities that provided for students by the school.

Edward A. Krug in Nasution (2014: 7-8), A Curriculum of the means used for the purpose of schooling.

Hilda Taba in Nasution (2014: 7) argues that in essence each curriculum is a way to prepare the child to participate as a productive member in his community. Each curriculum, however, always has certain components, is a statement of goals and objectives, selection and organization of materials and lesson content, forms and activities of learning and teaching, and ultimately evaluation of learning outcomes.

According to Robert M. Hutchins in (Sanjaya, 2006) the curriculum as the eyes and the content of the lesson.

According to John Dewey in Kaber (1988: 4) the curriculum is nothing but experience; The experience of racially and continuously reconstructed children experiences into a number of knowledge or subject areas whose aims are none other than growth.

Undang-undang Nomor 20 Tahun 2003 on the National Education System stated that the curriculum is a set of plans and arrangements concerning objectives, content, and lesson materials and ways used as guidelines for the implementation of learning activities to achieve certain educational goals. Based

on this understanding, there are two dimensions of the curriculum, the first is the plan and the setting of the objectives, content, and the lesson material, while the second is the way used for learning activities (Kemendikbud, 2013: 1).

In the context of the development of education in Malaysia explained that, the curriculum is the process of planning, synthesizing, interpreting the purpose, aim and objective curriculum. It also deals with translating the content of the lesson and exercising it in the form of a disciplinary subject lesson (Hasmori, *et al*, 2011: 350-356).

Referring to the opinion of curriculum experts understanding of the above curriculum was very broad, covering the whole experience of students. So it can be understood that the curriculum is all activities, events or activities planned under the guidance of the school both formal and non formal. The curriculum is not only about the lesson plan, but also about how the plan is implemented. A curriculum includes two inseparable things, namely a learning plan and how to implement or implement the curriculum to achieve the learning objectives.

## **2.4 Component of the Curriculum**

It has been suggested already that curricula can be divided into components that are more specific than the commonly distinguished goals, content and methods. All curriculum components are potentially interactive. For example, the students liking of a particular instructional may influence his response to the particular instructional content taught under that method. In the present study six components were initially formulated: Objectives, Curriculum

Plan, Teaching Methods and Learning activities, Learning Materials, Evaluation Procedures, and Curriculum Implementation (Skager & Dave, 1977: 25).

#### **2.4.1 Objectives**

Statements about what the curriculum should accomplish may be made at many levels of inclusiveness, such as at the national level, for the entire school stage, for different grade levels of schooling or for different subject matter areas. The process through which objectives are developed is perhaps just as significant as the objectives themselves and is therefore an appropriate concern in the evaluation of this component of the curriculum.

#### **2.4.2 Curriculum Plan**

The curriculum plan is a formal design for implementing the objectives. It is usually thought of as incorporating two important facets, the first defining curriculum content and the second specifying desired teaching/ learning *processes*. The curriculum plan is usually a written document that has emerged for a complex interactive process.

#### **2.4.3 Teaching Methods and Learning activities**

The manner in which teaching and learning is finally carried out represents the real implementation of the objectives of the curriculum as mediated by the curriculum plan. It is obvious that discrepancies can arise between educational objectives themselves, the plans derived from those objectives, and the real events that occur during the learning process.

#### **2.4.4 Learning Materials**

The materials utilized in the learning process include textbooks and exercise materials as well as a variety of other aids such as libraries, audio-visual centres and community learning resources such as museums and exhibitions.

#### **2.4.5 Evaluation Procedures**

Evaluation refers here primarily to pupil assessment, either formal or informal. Evaluation at the level of the learner has been analyzed in considerable detail by skager (1997). It serves several functions in the teaching/learning process and may be conducted by learners themselves, by teachers, or by outside authorities.

#### **2.4.6 Curriculum Implementation**

This last major component focusses on the manner in which curriculum change is introduced. It encompasses the planning and implementation of curricula at various levels within a society, the preparation of teachers, administrators and others involved in the instructional process, as well as the monitoring of the implementation process, the later being in reality an aspect of evaluation. Appendix 3 presents the detailed analysis of components of the curriculum, made available to participants in the project.

A curriculum that has been developed will be meaningless if not implemented, in terms of actual use in school and in class. Implementation of the curriculum done by the teacher can be seen in the learning implemntasi. Implementation of learning according to Suryani in Husamah (2013: 105) states that implementation in learning includes three stages that can not be separated

from one another, namely planning, implementation, and evaluation. In this implementation, of course, should be attempted to handle the influence of certain factors, such as readiness of resources, cultural factors of society, and others. The various dimensions of curriculum implementation that are important to be observed are curriculum materials, curriculum organizational structure, roles or behavior, knowledge, and value internalization. Successful implementation is mainly determined by aspects of planning and implementation strategies. In principle, this implementation integrates philosophical, objective, subject, matter, teaching strategy and learning activities, as well as evaluation and feedback (Hamalik, 2008: 190).

## **2.5 Concept of Curriculum**

Barrow and Milburn and Beauchamp in Wen Su (2012: 154) noted how the term “curriculum” is in some cases used in very limited contexts, but in other cases very broadly. With a little bit expansion, the author of this paper takes Beauchamp’s view of conceptualization to examine the term “curriculum” in the order from the narrow to the broad. Definitions made by different researchers are provided to better understand the conception of curriculum.

### **2.5.1 Curricula as a Set of Objectives**

Curriculum can be seen as a means of achieving specific educational goals and objectives. In this sense, a curriculum can be regarded as a checklist of desired outcomes. In the curriculum development process, generally speaking, the objectives are clear and specific in behavioral and observable terms. The emphasis

on objectives is the characterization of an objectives curriculum model. In this sense, the focus is on products or ends, and is also teacher-orientated or administrative-oriented. If it is the latter, curriculum is set by politicians without consulting teachers and very few of the teachers feel any sense of “ownership” for the material they are compelled to teach.

### **2.5.2 Curricula as Courses of Study or Content**

Curriculum can be understood as a process of selecting courses of study or content. In this sense, a curriculum also either describes or prescribes the content and goals of formal instruction but lays the means of instruction out of the foreground of focus. Although this use of the curriculum appears similar to the above-mentioned definition “Curricula as a Set of Objectives” in terms of the inclusion of goals, in fact, there is a different focus. The first definition emphasizes the specification and prescription of instructional objectives whereas the definition here focuses on course content rather than learning objectives. The “courses” feature a variation of scope and amount.

### **2.5.3 Curricula as Plans**

A curriculum can be seen as a plan, or a sort of blueprint for systematically implementing educational activities. This sense of the term combines content with instructional methods and hence has a wider scope than the former two curricular paradigms because of the inclusion of methods. In this vein, canvasses curriculum as “a plan for teaching or instruction” Similarly as “a plan for a sustained process of teaching and learning” with a specific focus on content and the process of teaching and learning. What is worth noting is that this view of curriculum is not



pragmatically equated with methods themselves in action. Pratt (1994) in Wen Su (2012: 154) further explains this by stating that “actual teaching and learning is not curriculum, for curriculum refers to plans for instructional acts, not the acts of instruction themselves”. According to this view, curricula can be likened to construction blueprints. As a blueprint is not a building per se, a curriculum is not actual teaching or learning.

#### **2.5.4 Curricula as Documents**

Other people, for example, Brady in Wen Su (2012: 154), view curriculum as a document an outline of a course program that is written on a piece of paper. Thus, curriculum “has become associated with the official written programs of study published by ministries or departments of education, local authorities or boards of education, and commercial firms or teams of educational specialists working on specially funded projects” . This view of the visual written document attached to curriculum derives from the need that, particularly in the phases of curriculum development and implementation, a written form has to be made to include a statement of objectives, content, method, and assessment. The presentation of the document purports to provide teachers with a model to follow in the curriculum process. In this sense, curriculum is synonymous with the term, “syllabus”

#### **2.5.5 Curricula as Experiences**

Instead of regarding curricula narrowly as formalized classroom content or prescriptive learning objectives, it may be useful to think of them more holistically as programs for experiences. Following this line of definition, one may recall what Marsh in Wen su (2012: 154) posits of curriculum as “an

interrelated set of plans and experiences which a student completes under the guidance of the school". That means: the relationship between "plans and experiences" is intertwined, where "plans" are attributed to planned curricula in advance and "experiences" refer to unplanned happenings in classrooms. Although planning is a precursor to action, it is important to acknowledge that unplanned happenings often occur in classroom settings.

## **2.6 Curriculum Development Models**

### **2.6.1 Ralph Tyler Model**

Many educational programs do not have clearly defined purposes. In some cases one may ask a teacher of science, of English, of social studies, or of some other subject what objectives are being aimed at and get no satisfactory reply. Some excellent educational work is being done by artistic teachers who do not have a clear conception of goals but do have an intuitive sense of what is good teaching, what materials are significant, what topics are worth dealing with and how to present material develop topics effectively with students. If an educational program is to be planned and if efforts for continued improvement are to be made, it is very necessary to have some conception of the goals that are being aimed at. All aspect of the educational program are really means to accomplish basic educational purposes (Tyler, 1950: 3).

According to Tyler in Idi (2009: 155-156) Curriculum development needed to be treated logically and systematically. He explained about the important of opinion with rationality, analyzing, to interpret curriculum and the learning

program from learning institution. The development of Tyler's model curriculum with particular emphasis on the planning phase. Although Tyler proposed a comprehensive curriculum development model but the first part of his model (destination selection) received a warm welcome from the educators.

Step 1: Tyler recommends that the curriculum planner to identify the general objectives by collecting data from three sources, namely: the needs of learners, the community (required functions) and subject matter.

Step 2: After identifying some general purpose, by filtering through two filters, the philosophy of education and learning psychology. The result will be a special learning objective and it is also called school education and community philosophy as the first filter for this purpose. Furthermore, it should be outlined the values obtained and illustrated by emphasizing the four democratic goals. To carry out screening, educators should clarify the principles of good learning, and learning psychology gives the idea of the time period needed to achieve the goal and time to efficiently carry out the activity. Tyler also suggested that educators pay attention to ways of learning that can:

- 1) Develop thinking skills
- 2) Help in obtaining information
- 3) Develop community attitudes
- 4) Developing interest
- 5) Develop a societal attitude

Step 3: Selection of learning experiences that support the achievement of goals. The determination of the learning experience should take into consideration the perceptions and experiences that the learners have.

Step 4: Organize the experience into the units and describe the various evaluation procedures.

Step 5: Direct and sequence learning experiences and relate them to evaluations of the effectiveness of planning and implementation.

Step 6: Evaluate the learning experience. Evaluation is an important component of curriculum development. In this context Tyler warns against distinguishing between learning content or learning activities with learning experiences, since the learning experience is an experience gained and experienced by children as a result of their learning and interaction with the content and learning activities. To develop their learning experience should lead to a well-designed and executed student experience. From some curriculum conceptions above it appears that the curriculum can be viewed in terms of a narrow or broad facet (as experience gained in school or outside school).

### **2.6.2 Hilda Taba Model**

Taba advocated for a flexible model of curriculum renewal based on joint efforts of practicing teachers, educational administrators and researchers. Her curriculum model covers many of the critical topics, from aims and goals of education, the selection of the content, the process of organizing learning and school development, and evaluation at different levels. Several general principles

and ideas of curriculum design developed by Hilda Taba belong to the foundations of modern curriculum theories.

The Taba Rationale is presented in her Curriculum Development Theory and Practice of 1962 in Laanemets & Ruubel (2013: 3) . It consists of 7 steps:

Step 1. Diagnosis of needs

Step 2. Formulation of objectives

Step 3. Selection of content

Step 4. Organization of content

Step 5. Selection of learning experiences

Step 6. Organization of learning experiences (development of methods)

Step 7. Determination of what to evaluate and how

### **2.6.3 Wheeler's Model**

Wheeler's model for curriculum design is an improvement upon Tyler's model. Instead of a linear model, Wheeler developed a cyclical model. Evaluation in Wheeler's model is not terminal. Findings from the evaluation are fed back into the objectives and the goals, which influence other stages (Chaudhary & Kalia, 2015: 58).

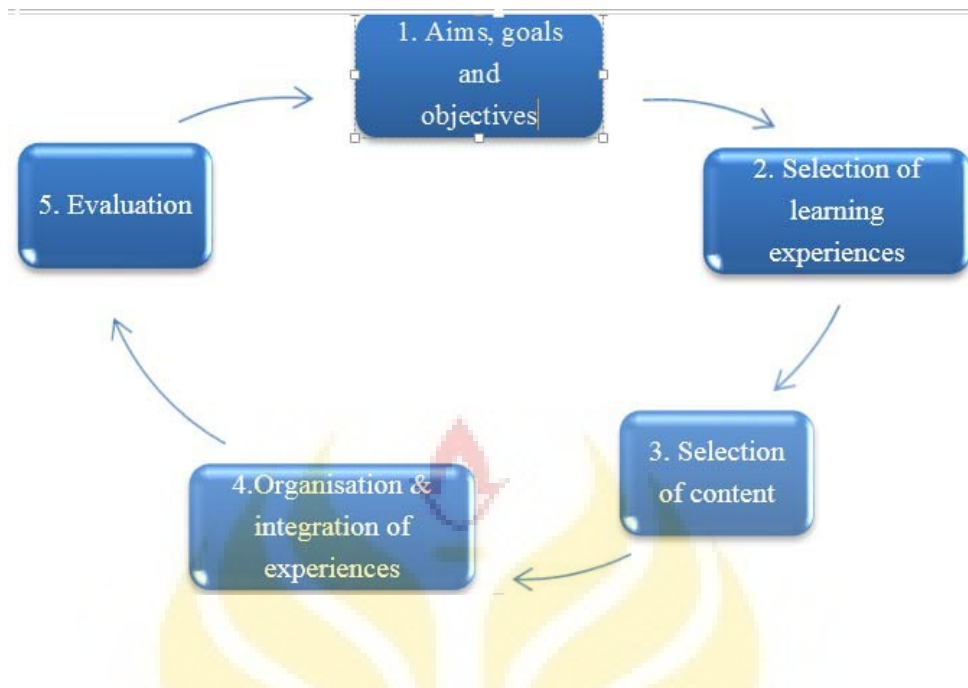


Figure 2.1 Wheeler's Model

Wheeler contends that:

- a. Aims should be discussed as behaviours referring to the end product of learning which yields the ultimate goals. One can think of these ultimate goals as outcomes.
- b. Aims are formulated from the general to the specific in curriculum planning. This results in the formulation of objectives at both an enabling and a terminal level.
- c. Content is distinguished from the learning experiences which determine that content.

#### 2.6.4 Audrey and Howard Nicholls Model

In his book, *The Developing Curriculum: A Participial Guide*, Audrey and Howard Nicholls in Idi (2009: 165) developed a fairly firm approach encompassing the curriculum elements clearly and concisely. The book is very

popular among educators, especially in Inggirs, where curriculum development at the school level has been around for a long time. Nicholas focused on the rational approach of curriculum development, in particular the need for a curriculum that emerges from a changing situation. They argue that change should be planned and introduced on a rational and valid basis according to logical process, and this has not been the case in the vast majority of changes that have already taken place. There are five steps or stages needed in the process of continuous development (continue curriculum process). The steps according to Nicholls (Idi, 2009: 165).

1. Situational analysis
2. Selection of objectives
3. Selection and organization of content
4. Selection and organization of methods
5. Evaluation

#### **2.6.5 Malcolm Skillbeck Model**

There are various categories of models of curriculum development. One category of models is concerned solely with the research and development of a curriculum and ignores the implementation processes of diffusion and adoption-. The two models we will describe in this category are the objectives model and the process model (Rodwell, 1973: 13).

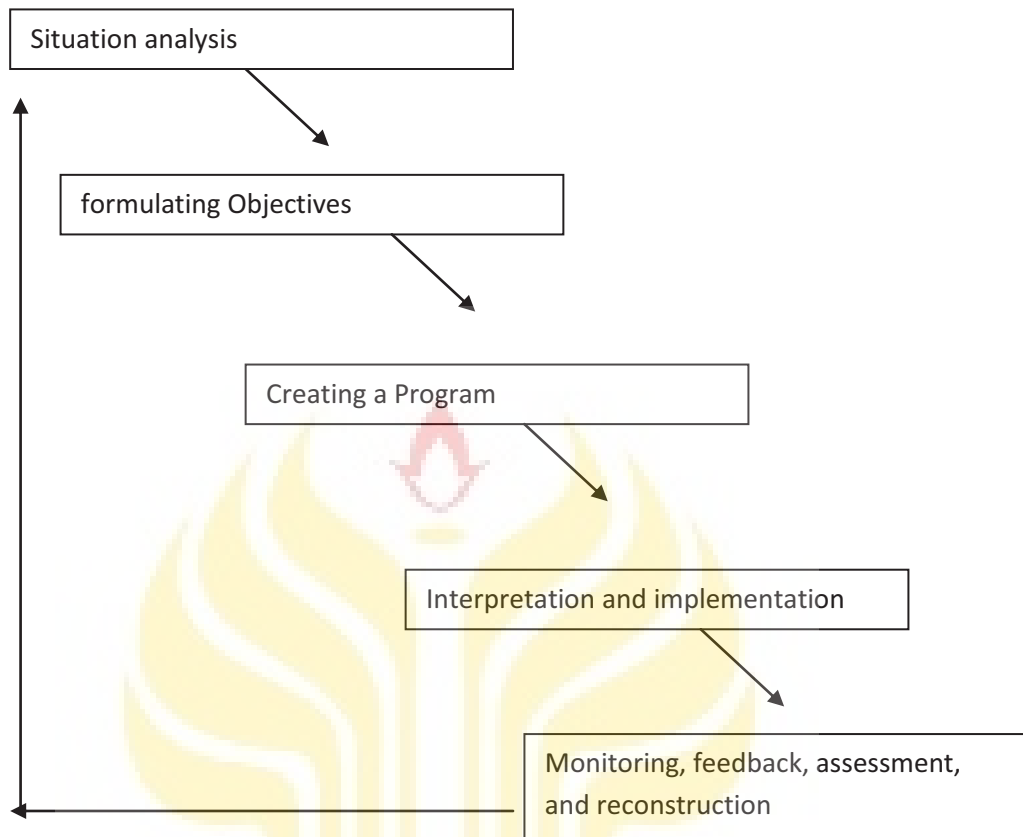


Figure 2.2 Curriculum Process Malcolm Skillbeck Model

## 2.7 Malaysia Education System

According to Rahman & Ahmad (1998: 88) The Education Act 1996 (Act 550, Laws of Malaysia) provides the fundamental basis for curriculum policies in Malaysia. It indicates the specific laws and provisions that give direction to curriculum documents. These regulations are mandatory for all schools.

The country's educational goals are manifested in the Malaysian National Education Philosophy (NEP) which stated that: Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner so as to produce individuals who are intellectually,



spiritually, emotionally and physical balanced and harmonious, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving a high level of personal well-being, as well as being able to contribute to the betterment of the family, the society and the nation at large.

A uniform system of education in both primary and secondary schools has been established whereby a national curriculum is used in all schools. Common central assessment and examinations at the end of the respective periods of schooling are also being practised. The national language, Malay, is the official language of instruction.

Based on Sharif & San (2001: 5) Malaysia has a 6-3-2-2 system of education, comprising six years of primary education, three and two years of lower and upper secondary education, followed by two years of post-secondary education. Technology-based education is first introduced at primary schools (years 4 to 6) and developed further at secondary schools (years 7 to 11). For this purpose, 'Living skills', a core subject which is compulsory for all students (years 4 to 9), has been mainly formulated together with elements of invention designed in it. Through this subject, students gain basic practical skills and knowledge founded on technology and entrepreneurship. The emphasis here is to develop students who are conversant with technology and economics, thus enabling them to adapt to the changing needs and demands of life. Thus, the DIY ('do-it-yourself') approach, coupled with elements of entrepreneurship and inventiveness,

has become an integral part of the teaching/learning process. Positive work attitudes such as self-reliance, confidence, creativity, initiative and productivity are infused into the learning activities. At Forms Four and Five (years 10 and 11), an array of technology subjects is available as electives for academic schools. From time to time, new technology subjects are formulated and offered for students' selection. Subjects like 'Invention' and 'Information technology' are the latest two additions to the list. Whilst elements of 'Invention' are added as a new topic to the 'Living skills' subject (years 4 to 9), the full subject is offered as an elective at upper secondary school (years 10 and 11).

### **2.7.1 Pre-school education**

Pre-school education is part of the National Education System under the Education Act, 1996. The aim of pre-school education is to provide a firm foundation for formal education. Pre-schools are run by government agencies, non-governmental organisations (NGO's) as well as private institutions. The major government agencies that are responsible for pre-school education are the Ministry of Education (MOE), the Ministry of Rural Development, and the Ministry of National Unity and Community Development. Children enrol between the ages of 4 and 6. All pre-schools have to abide the curriculum guidelines set by the Ministry of Education. The curriculum enables pre-school children to acquire sufficient basic communication, social and other positive skills in preparation for primary schooling. The learning components include language and communication, physical development, cognitive development, moral and

spiritual growth, socio-emotional development, aesthetic and creativity (Unesco, 1996: 5).

### **2.7.2 Primary Education (Year 1 to Year VI)**

Education at this level aims to provide the child with a firm foundation in the basic skills of reading, writing and arithmetic, as well as emphasising thinking skills and values across the curriculum. While education at this level is not compulsory more than 99 per cent of this age-group are enrolled in primary schools throughout the country. There are two types of schools at the primary level, i.e, the National Schools and the National-Type Schools. In the National Schools the medium of instruction is the Malay Language which is the National Language. The medium of instruction in the National Type Schools is either Chinese Language or Tamil Language. In both types of schools, the Malay Language is a compulsory subject. English is compulsory and is taught as a second language in all schools. Chinese, Tamil and indigenous languages are also offered as subjects in national schools. Primary education is divided into 2 phases. Phase I (Year 1-3) and Phase II (year 4-6) (Unesco, 1996: 6)..

### **2.7.3 Secondary school**

Secondary education is basically an extension of primary level education. Education at this level is general in nature and is divided into lower and upper secondary level, and a special year transition program known as 'Remove Class' for pupils from the National-Type Chinese and Tamil Primary Schools (Unesco, 1996: 6).

### **2.7.3.1 Remove Class**

Remove Class is a transition year for pupils from the Chinese and Tamil medium schools to acquire sufficient proficiency in the National Language to enable them to learn through this medium the following year. However, pupils who have performed well in the Primary Assessment Test (UPSR) are allowed to proceed directly to Form 1 (Unesco, 1996: 6).

### **2.7.3.2 Lower Secondary Level (Form I-Form III)**

This level covers a period of 3 years. Education at this level is general in nature. All subjects are core subjects and compulsory for all. Chinese Language, Tamil Language and Arabic Language (Communication) are offered as additional subjects. Upon completion pupils sit for a common examination, i.e. the Lower Secondary Assessment (PMR) (Unesco, 1996: 6).

### **2.7.3.3 Upper Secondary (Form 4-5)**

Education at this level covers a period of two years. Besides following the general education program, students begin to specialise in the science, arts, technical, vocational and religious discipline. Specific schools are designated for each discipline. These schools are academic schools, technical schools, vocational schools and religious schools. Upon completion, pupils sit for the Malaysian Certificate of Education examination /Sijil Pelajaran Malaysia (MCE/SPM) (Unesco, 1996: 7).

#### ***2.7.3.4 Secondary Technical Schools***

Secondary technical education is aimed at producing an adequate pool of qualified students who excel in mathematics and science, as well as in basic engineering subjects. Technically-biased education is provided by secondary technical schools. Students in secondary technical schools follow the same core subjects of upper secondary school curriculum and choose science and technical subjects as electives. Admission to these schools is through application based on the *PMR* results. Only students with strong background in Mathematics and Science are selected. These schools also provide courses at the sixth form level. Students from these schools are expected to continue their studies in science and technology related courses at the diploma and degree levels as well as in advanced skills (Unesco, 1996: 8).

#### ***2.7.3.5 Secondary Vocational Schools***

Secondary vocational schools provide courses in pre-employment skills as well general education. These schools offer courses in two streams, namely, the vocational education stream and the skills training stream. In the vocational education stream, emphasis is given to general and technical subjects in order to provide students with a good foundation for admission into polytechnics or other institutions of higher education. In the skills training stream emphasis is given to practical work to develop competency in trade skills required by related industries. Students are prepared for the National Vocational Training Certificate (NVTC) (Unesco, 1996: 8).

## 2.8 Indonesia Education System

The national education system consists of seven types of education: (a) general education focuses on the expansion of general knowledge and improvement of students skills; (b) vocational education prepares students for mastering a number of specific vocational skills needed for employment; (c) special education provides important skills and abilities for students with physical and/or mental disabilities; (d) in service education aims at increasing abilities required for job preparation as an official or a candidate for a government department or a non-departmental demands the mastery of religious knowledge and related subject; (f) academic education focuses primarily on improving the mastery of science; and (g) professional education prepares students primarily for specialized or job-related knowledge and skills. The non formal education system covers package-A (equivalent to primary school), Package-B (equivalent to junior secondary school), and Package-C (equivalent to senior secondary school) with emphasis on the acquisition of knowledge and functional skills (Unesco, 2010: 4).

### 2.8.1 Primary and secondary education

Pre-school education lasts between 1 and 3 years, and is not compulsory. It is followed by primary school (*Sekolah Dasar*) and junior secondary school, both of which are compulsory. Primary education lasts for 6 years and the medium of instruction is officially *Bahasa Indonesia*, although regional languages are also used during the first 3 years. Secondary education starts with 3 years of junior secondary school, upon completion of which students are awarded the certificate *Ijazah Sekolah Menengah Pertama* (SMP). Senior secondary school also lasts for

3 years, and is divided into a general track (*Sekolah Menengah Atas*, SMA) and a vocational track (*Sekolah Menengah Kejuruan*, SMK). From the second year onwards, students in the general track can choose between the following subject clusters: natural sciences, social sciences, and languages. Students participate in the school examination for a large amount of subjects including those belonging to the chosen subject cluster. Students must also sit a state examination (only for the subjects included in the chosen subject cluster), upon completion of which the *Surat Keterangan Hasil Ujian Nasional* certificate is issued. An average score of 6.0 (on a scale of 1-10) is required in order to pass the state examination, with a minimum score of 4.26 for each subject. The certificate of graduation of the senior secondary education is the *Ijazah Sekolah Menengah Atas* (*Ijazah SMA*) (Education System Indonesia, 2011: 6).

### 3.8.2 Senior secondary vocational education

Instead of continuing on in the general track after junior secondary school, pupils can take 3-year technical and vocational education programmes. The most common types of schools for senior vocational education are:

1. *Sekolah Teknik Menengah* (STM), offering a wide variety of programmes;
2. *Sekolah Menengah Ekonomi Atas* (SMEA), offering programmes in commercial sciences;
3. *Sekolah Menengah Kesejahteraan Keluarga* (SMKK), offering home economics programmes;

4. *Sekolah Menengah Teknologi Pertanian*, offering agricultural programmes.

At the end of secondary technical/vocational education, pupils are awarded the *Ijazah Sekolah Menengah Kejuruan*. Pupils also sit a state examination for this type of education, upon completion of which the *Surat Keterangan Hasil Ujian Nasional* certificate is awarded (Education System Indonesia, 2011: 7).

### **3.8.3 Admission to higher education**

The Senior Secondary School Certificate (*Ijazah Sekolah Menengah Atas*, SMA) and the state examination (*Surat Keterangan Hasil Ujian Nasional*) are both required for admission to higher education. State universities require students to pass an entrance examination (*Seleksi Nasional Masuk Perguruan Tinggi Negeri*), which tests mathematics, English, Indonesian and the subjects relevant to the student's chosen specialisation. Successful candidates may be admitted to the state universities, depending on the number of available places. The *Politeknik* and *Akademi* have their own admission requirements. In addition, private institutions also conduct their own admission examination (Education System Indonesia, 2011: 6).



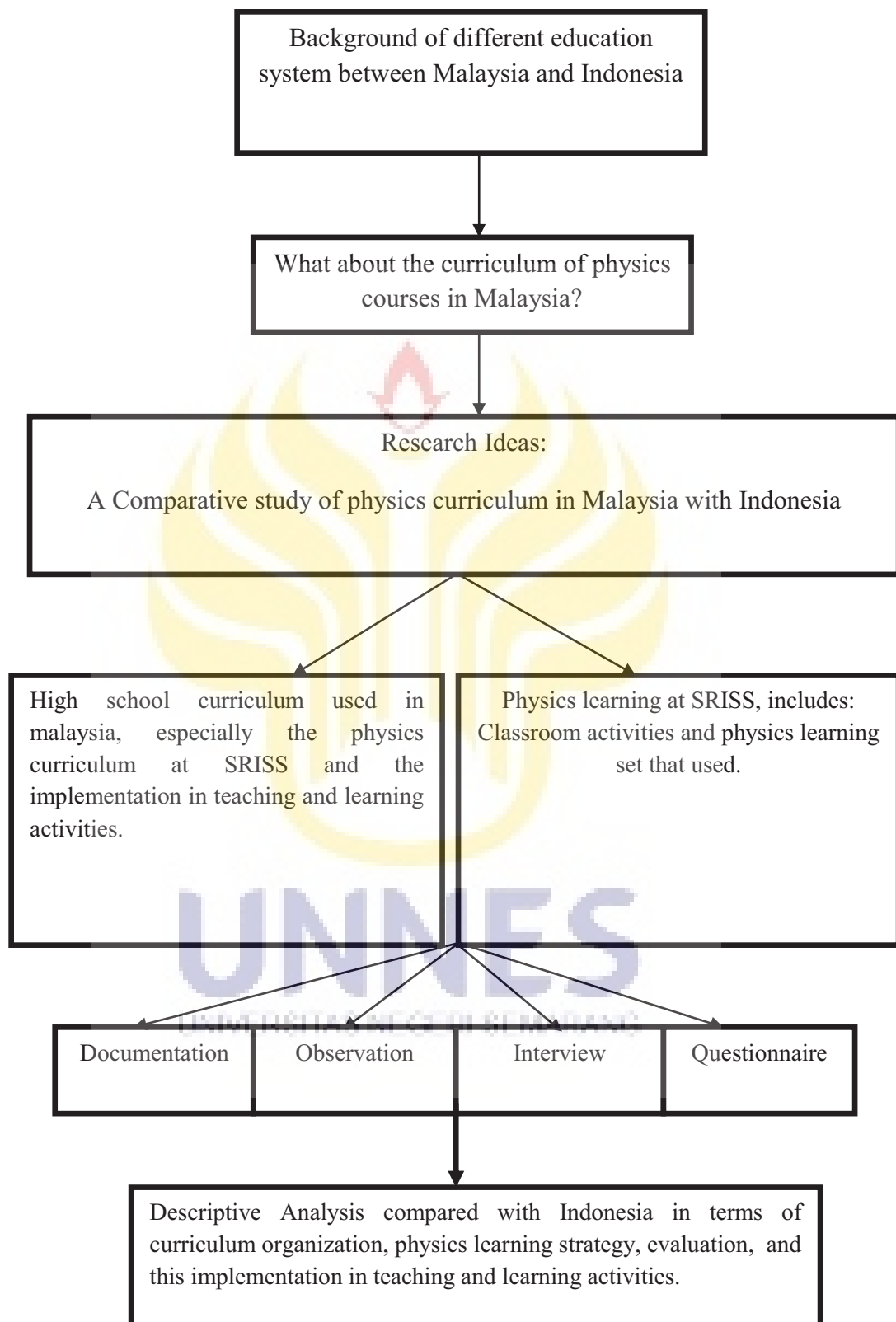


Figure 2.3 Thinking Framework Diagram

## CHAPTER 5

### CONCLUSION

#### 5.1 Conclusion

1. Curriculum of physics course in Slim River Islamic School (SRISS) is regulated in *Kurikulum Bersepadu Sekolah Menengah* (KBSM). Physics KBSM emphasizes inquiry approach, thinking strategy, and thinking learning in teaching-learning process. It is based on the topics. Every topic consists of some learning fields. Each learning field has one or more learning results. Learning result is reported based on cognitive hierarchy and affective domain.
2. The implementation of curriculum in SRISS is excellent, in the aspect of daily lesson plan's creation. It is based on syllabus, inserting patriotic values in learning, and high percentage of the role of teacher in learning. The analysis result of scale role of teacher in physics classroom is 89,058% which means excellent. The implementation of curriculum 2013 in Indonesia based on interview with sample of physics teachers in Indonesia showed that the implementation is good enough, in the aspect of daily lesson plan's creation, It is based on syllabus. Using scientific approach in teaching and learning activities, and using authentic assesment in evaluation.

3. In the aspect of organization, curriculum comparison in Malaysia and Indonesia discover that a must learn physics material in Malaysia is lighter than in Indonesia. The basic competences that should be mastered are also lighter. Teaching-learning strategic in physics curriculum both in Malaysia and Indonesia are mostly equal. Teachers do apperception as opening, use cooperative learning as main activity, and close the class by doing evaluation / reflection and affirmation activity. The strength of physics curriculum in Malaysia is the concise material with clear and understandable objective. In addition, the curriculum management is also nice. The weakness of KBSM is the lack of details. On the other hand, Indonesia's curriculum is very deep and detail. Even though we have a remarkable curriculum but there is no implementation, lack of stability, insufficient infrastructure, and bad management, we cannot say that the curriculum is appropriate.

## **5.2 Recommendation**

According to the research and conclusions, the author provides some suggestions below:

1. For teachers, they should be creative in using learning strategy so it can lead firm thinking and scientific skill. In order to achieve the basic competence optimally, the use of time in class should be effective.
2. For schools and government, they should provide better infrastructure for supporting learning strategy. Government should give previous

information related to curriculum when there is a plan to change the substance. They should prepare the supportive transformation infrastructure so that the transformation curriculum will be more ready.

3. For students, they should do further research which shows the sustainability factors of curriculum in Malaysia and Indonesia, and also the concept of curriculum development in Malaysia compared with Indonesia.
4. For educational university, they should produce professional teachers who can implement the curriculum that in demand appropriately.

The implementation of Kurikulum 2013 is the responsibility of all parties. We can take the benefits only if it is maximally implemented by all parties. A very well curriculum concept will not work unless it is implemented by all parties involved.

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