

Development of Mind Mapping Teaching Materials in Introductory Education Courses

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Abstract- This research was conducted with the aim of compiling introductory education teaching materials by applying mind mapping. This research was conducted in an introductory course of education for new students in 1st semester. This research used Research and Development (R&D) method. This research was carried out in five stages. The validation test was carried out by four experts. Total mean score was 86 and included in excellent criteria, while the teaching materials were included in the feasible or usable category.

Index Terms- Teaching Materials, Introduction to Education, Mind Mapping

I. INTRODUCTION

Kampus merdeka: Merdeka Belajar, is the newest slogan for education of higher education level in Indonesia. It is in accordance with the President's direction, namely "Achieving the 2045 vision through economic transformation supported by downstream industry by utilizing human resources, infrastructure, simplifying regulations, and reforming the bureaucracy". This is kind of government's intention to improve and enhance the quality of Indonesian education. Education is regulated in Law Number 20 of 2003 as well as Law Number 12 of 2012 concerning Higher Education. Apart from the law, the legal basis for Indonesian education is also contained in the Presidential Decree, namely Presidential Decree No. 8 of 2012 on Indonesian National Qualifications Framework (INQF), and several ministerial regulations. In Law No. 20 of 2003, in article 1 paragraph 1, it is written that:

"Education is a conscious and planned effort to create a conducive learning atmosphere so that students are actively develop their potential to have religious spiritual strength, intelligence, noble morals, self-control and the abilities or soft skills they need to live independently, in society and for nation and state".

One of the improvement in the quality of education implemented by the government is the formulation of the INQF or the Indonesian National Qualifications Framework for education in higher education level. In Indonesia, there have been several curriculum changes for higher education, including the National Curriculum which was implemented in 1994 through the Ministerial Decree No. 056/U/1994. The main point in this curriculum was the arrangement of National Education with the existence of general courses, basic skills courses, and expertise courses. The next curriculum changing was carried out in 2000, namely KBK or Competency-Based Curriculum, with the legal basis of the Ministerial Decree No. 232/U/2000 and No. 045/U/2002. This curriculum was oriented towards global competencies, with the preparation of skills development courses, skills and scientific courses, work skills courses, work attitude courses, and social life courses. Next, curriculum changing were the Higher Education Curriculum which has been implemented since 2012 or known as KKNi and SNIKI. Where in this curriculum, the emphasis was on the competence of graduates based on learning outcomes. This curriculum changing has a legal basis for Law no. 12 of 2012, Presidential Decree No. 08 in 2012, Indonesian Ministry of Education and Culture Decree No. 73 in 2014 and Indonesian Ministry of Education and Culture Decree No. 49 in 2014. And the last curriculum changing or the one currently being discussed and trending is the *kampus merdeka: merdeka belajar*. The legal basis for this curriculum is Indonesian Ministry of Education and Culture Decree No. 03 in 2020 concerning National Higher Education Standards. Those curriculums changing are inseparable from the aspirations and hopes for the improvement of education in Indonesia, because Indonesian education is still very intelligence-oriented by the values or numbers on the students' transcript, where Indonesian education should begin to be oriented towards creativity, understanding and skills.

Introduction to education is one of the courses presented to new students in the first semester of Economic Education Study Program. This course has an INS code in 3 credits. For new students, courses in the first semester are a transitional phase from high school students' habits to higher education students' habits that should be independent, mature and more heterogeneous. In this transitional period, they are required to adapt or adjust to a new life style that will be very different. Adjustment that occurs during adolescence is a transitional period between childhood and adulthood and includes biological, cognitive, social and emotional periods, in the age range between 13-17 years is very difficult to do (Hurlock in Listyasari, 2013). Moreover, when the world is being hit by the Covid-19 pandemic, it requires them to carry out online courses they have never done before.

When a new student start their college, they will automatically be exposed to various kinds of changes and they are required to be able to adapt to their environment well (Spencer & Jeffrey in Listyasari, 2013). In addition, when new students start the college, they will be faced with different academic challenges from the previous period (Goodwin, 2008). New students are the group that is the easiest and most susceptible to stress (D'Zurilla & Sheedy in Fuad & Zarfiel, 2013). According to Tinto (in Nurfitriani, 2016) the first year of college is a very critical transition period, because this period is a period to build a foundation to be successful. If a person can adapt other people individually and in groups, and he/she can show good attitudes and behaviour, it can be interpreted that he/she has succeeded in adjusting to the new environment (Santrock in Listyasari, 2013).

In the learning process at Economic Education Study Program of IKIP Budi Utomo in first semester, the introductory education course is the first course taught to students, as a basis for the next educational courses. Thus, it is imperative for students to be able to master and understand in detail and well the materials in this course. On the Ministry of Education and Culture's website, namely <https://spada.kemdikbud.go.id/course/pengantar-ilmu-pendidikan>, it is explained that introductory education is a compulsory subject that students must take in order to equip students as prospective educators who have thoughts and abilities managing education with pedagogic abilities, social and professional personalities. The achievements in this course are:

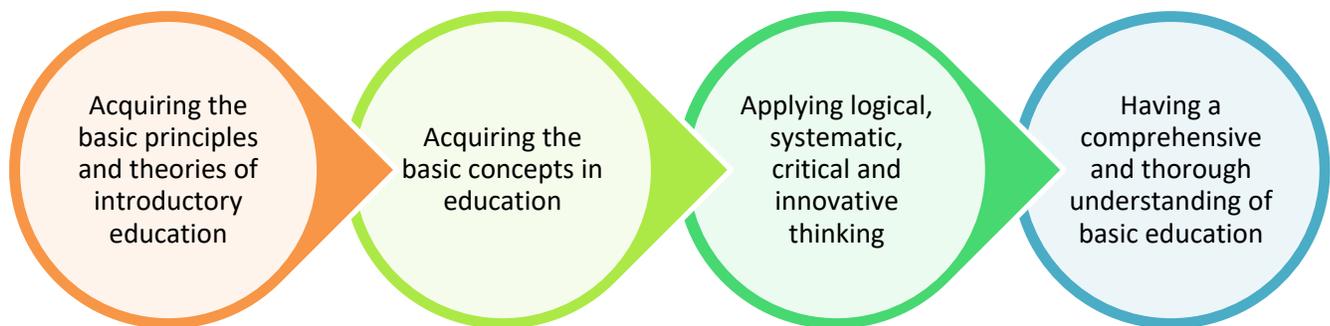


Figure 1. Introductory of Education's Lesson Objectives

The material discussed in this course includes the nature and development of humans, the meaning of education, elements in education, educational foundations and principles, schools of education, and problems that occur in the world of education. The teaching materials are arranged to make it easier for students to understand the material for this introductory education course, there are several CHAPTERS that are discussed, including:

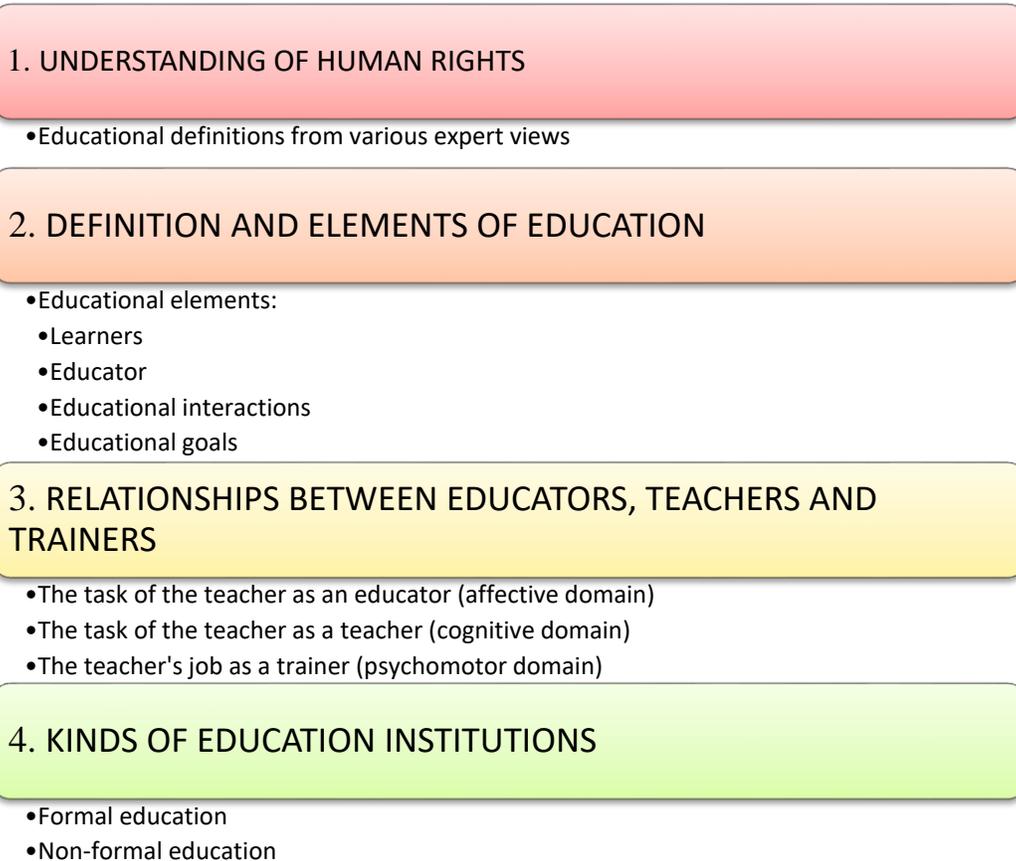


Figure 2. Introductory of Education's Teaching Material

The preparation of introductory educational teaching materials is manifested in mind mapping. Mind mapping is one of the most revolutionary learning methods or concepts in the world of education. Mapping is a technique that utilizes the entire brain by using visual imagery and other graphic infrastructure to form impressions (Swadarma, 2013). According to Buzan (2003), mind mapping is used to develop thinking ability which is initially one direction, into several directions, and can place various thoughts from various points of view. According to Joyce & Weil (1980), mind mapping is "a model of teaching is a plan or pattern that can be used to shape curriculums, to design instructional materials, and to guide instruction in the class room and other settings". According to Buzan (2003), the use of mind mapping will: 1) make it easier to remember numbers, facts and formulas, 2) make it easier to remember and memorize things, 3) increase concentration and motivation. Meanwhile, according to Swadarma (2013) in his book, he writes that there are several experts who play an important role in the development of mind mapping, including:



Figure 3. Father Founding History of Mind Mapping

II. RESEARCH METHOD

The method used in this research is Research and Development or R&D. The R&D method is carried out in several steps, and has several commonly used methods, including: descriptive, evaluation and experimental. Especially for the evaluation method, it is used to evaluate the trial process of developing research products. Development research generally has two objectives, namely to develop products and test the effectiveness of the product to achieve the final goal. According to Sugiyono (2010: 298) the R&D research method has 10 stages, but due to limitations experienced by researchers due to a pandemic which results in students being unable to perform offline learning, there are only 6 (six) stages, namely:

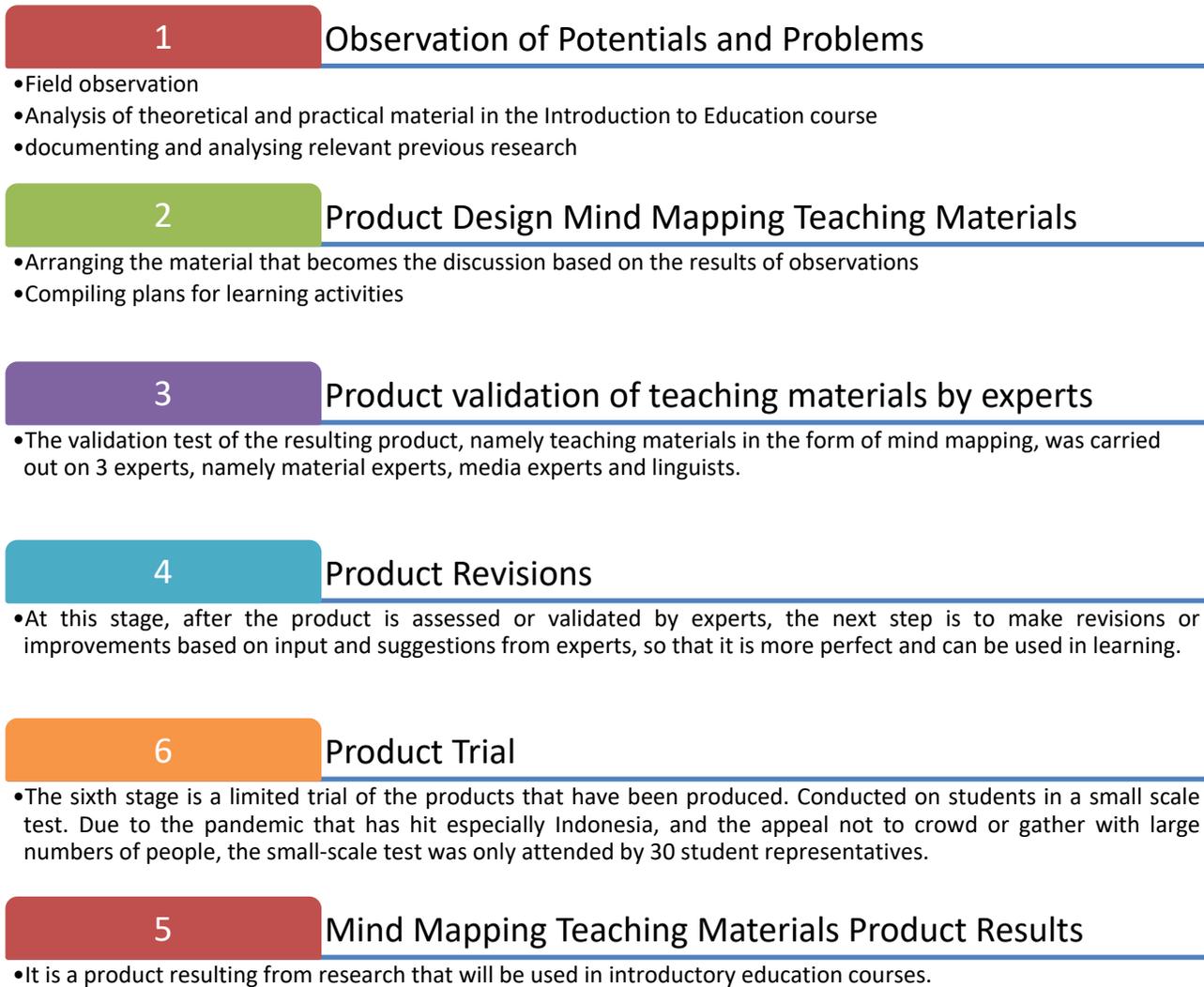


Figure 4. Research Stage

Sources of data of this research were from three sources, firstly from the results of the students' needs analysis during observations in introductory education courses, secondly from students' needs analysis in order to obtain mind mapping teaching materials that can help facilitate students' understanding of the material in the course, and third. derived from the results of tests that have been conducted by experts and small-scale tests conducted with 30 students. There are four research instruments used, namely: 1) open interviews with students to obtain initial data, 2) a questionnaire containing statements to obtain the substance of the needs for teaching materials development, 3) product validation test sheets for the three experts to obtain results validation to get research products that are valid and suitable for use, and 4) test instruments to determine the effectiveness of the products that have been produced, namely mind mapping teaching materials. Data collection techniques in this study were interviews, questionnaires and documentation. Interviews were conducted at the beginning of the observation with students to find out the need for developing teaching materials that could help students understand the material easily. The questionnaire technique used the substance of the development of teaching materials, and documentation techniques to document all activities or stages of this research. The analysis technique used in this research is descriptive qualitative which is used to analyze data and information that has been obtained from the results of interviews, questionnaires as well as test results by experts.

III. FINDINGS, DISCUSSION, AND CONCLUSION

The existence of teaching materials is very important to support teaching and learning process. Existing teaching materials must be in accordance with the needs of students, especially new students. There are several aspects that must be considered in order to prepare teaching materials according to your needs, namely:

- a. Content eligibility. The content or material in the teaching materials must be in accordance with the material required in the introductory education course. In this aspect, it consists of six points, namely: 1) material sources, 2) material coverage, 3) material types, 4) material characteristics, and 5) material content.
- b. Presentation of material. Presentation of material in teaching materials must pay attention to: 1) systematic presentation of material coherently, b) there are instructions for use, 3) there are illustrations that make it easier for readers to understand, 4) accompanied by case examples, 5) there is evaluation at the end of each discussion, 6) include explanation of terms and, 7) bibliography.
- c. Language. In teaching materials, you should use standard language or in accordance with good and correct Indonesian, communicative language and terms that are easy to understand.

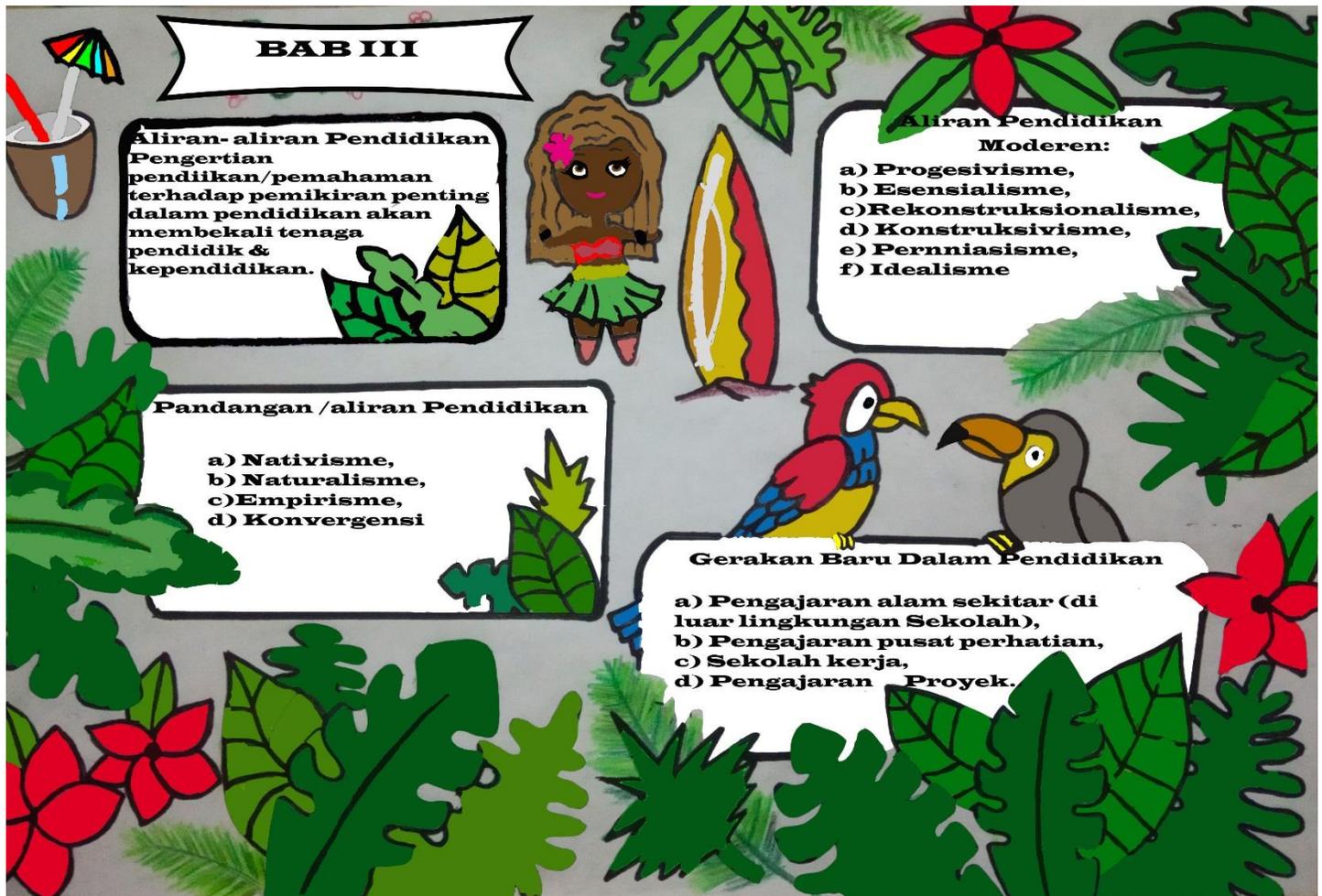


Figure 5. Mind Mapping of Teaching Material CHAPTER 3

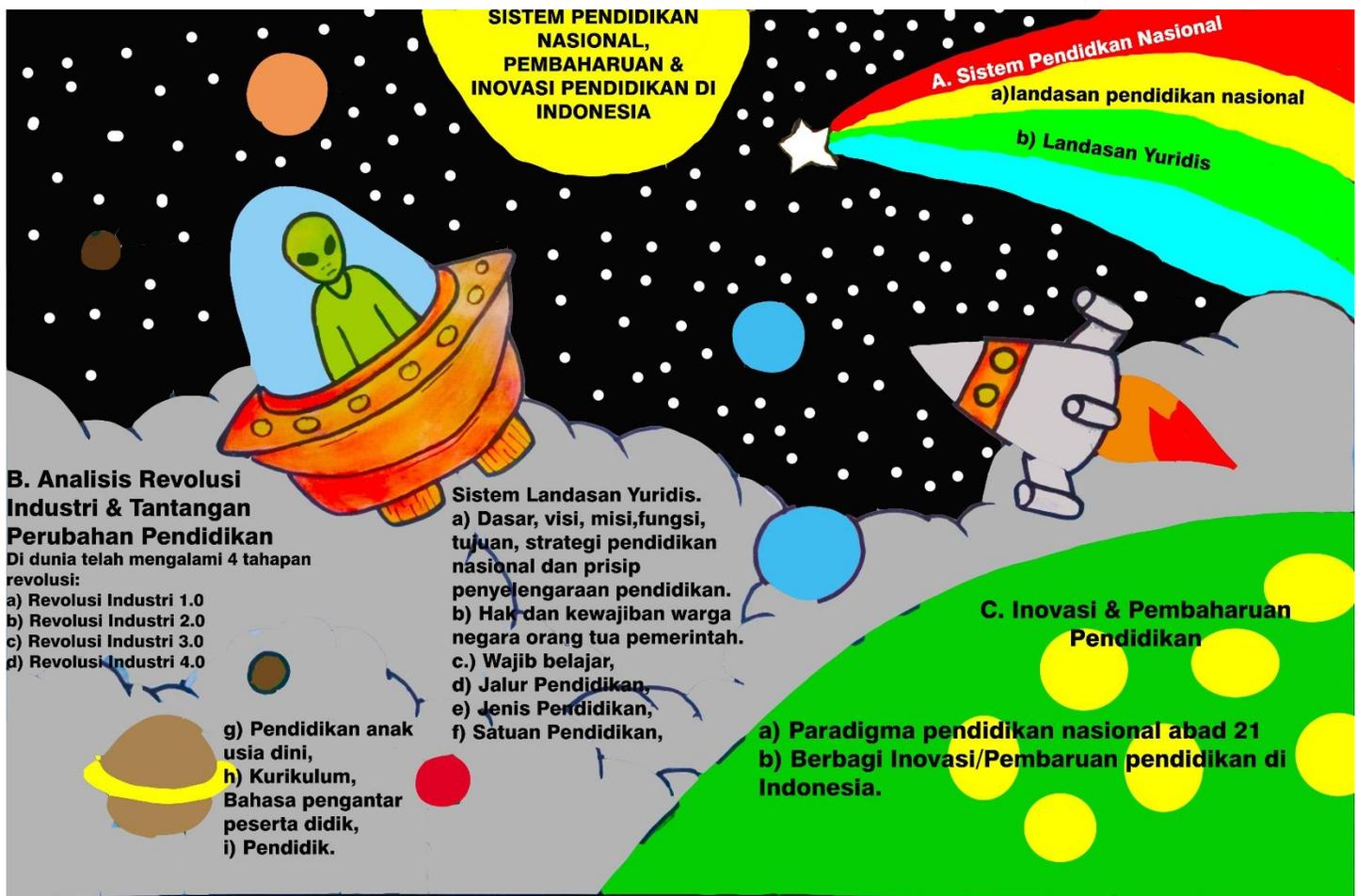


Figure 5. Mind Mapping of Teaching Material CHAPTER 6

The results of the validation test involving three experts in accordance with their fields, namely Dra. Suhartatik, M.Pd as a language expert, Wilyanti Agustina B., S.T, M.Pd as a media expert and Dr. Endang Sumarti, M.Pd as the first material expert, and the second material expert is Drs. Nur Rohman, M.M. of the four experts, the mean value is obtained:

Tabel 1. Nilai rerata validasi ahli

	Language Expert	Media Expert	Material Expert 1	Material Expert 2
Mean Score	84,5	86,2	87	86,3
Sum of Mean Score	86			
Criteria	Excellent			
Category	Feasible			

Small-scale trials were carried out on 30 students, based on the initial score as well as the final test score. In order to know the difference, a difference test was carried out by comparing the mean of a variable and using independent sample test data analysis and the value obtained was derived from the data on the results of the tests carried out, it was known that from the similarity of the values of the two variables obtained $F = 1,853$ and it was assumed that the two variables are different with the value of $t = 10.243$ with degrees of freedom ($df = 142$), and $sig = 0.177 = 17.7\% (> 5\%)$. It can be interpreted that the results of this study H_0 are accepted, which means that the two samples have the same variable. The next test used the Equal Variance Assumed test, and it was found that $sig=0,000 = 0\% < 5\%$. H_0 is rejected, which means that the two populations have different mean completeness values. From the test results above, it can be concluded that the mind mapping teaching material falls into the excellent criteria and it is feasible to be used.

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