

# **THE SKILL OF THINKING CREATIVELY-CRITICALLY IN THE LEARNING OF EARLY CHILDHOOD EDUCATION**

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## **Abstract**

The skill of thinking creatively and critically is one of the skills which must be given in the learning process of children because the skill of thinking creatively and critically will be very useful in the development of children psychology in the next level of development, so that it is expected that the creative and critical children can be more ready to face the changing and dynamic global world. The implementation of the skill of thinking creatively and critically can be done with the process of giving questions which are appropriate with the growth and development of children, namely mind mapping, problem based learning, and games.

Key words: The learning of early childhood education, creative, critical

## **INTRODUCTION**

Basically the process of learning is a transmission process of values, concepts, skills, and culture which is aimed to improve the quality of human beings. In a strategic plan of National Education Department (Departemen Pendidikan Nasional), it is stated that the future national education development will be based on the paradigm of full human beings development who are functions as subjects who have capacities to actualize the potential and dimension of humanity optimally, in which the dimension of humanity is divided into three most basic elements, namely:

1. Affective, which is reflected on the quality of faith and piety, etiquette and aesthetics, and noble character and noble moral,
2. Cognitive, which is reflected on the capacity of thinking and intellectual power to study knowledge and develop technology, and
3. Psychomotor, which is reflected on the ability to develop practical and technical skills.

The effort to realize the national development target is placed in the vision of National Education Department 2005–2009, namely “competitive and smart Indonesian individuals”, in which the effort to realize it is placed in its mission, namely “realizing an education which can build competitive and smart Indonesian individuals fairly, qualified and relevant with the needs of global society (strategic plan of National Education Department 2005–2009).

Indonesia as a country which wants to be a powerful and respectful country in the world must realize societies which possess intelligence and progressive attitude, namely societies which possess the power of change, visionary, innovative in knowledge, and master technology.

Campus as one of the centers of creation of smart and competitive Indonesian individuals becomes the front liner in its role to produce competitive students, qualified and relevant with the needs of global society.

Students, as outputs of learning process, must be equipped with hard skill and soft skill without ignoring the purpose of education itself, namely maximizes the owned potentials and has the attitude of always learning and teaching so that they can compete in the global world, as stated by Holt (1964) that we do not know what knowledge is needed in the future, therefore it is useless to teach it in the present. It is better if we help people to love and learn intensively so that they can learn everything when they need it.

The informal schools are the partners of school education in which both school systems complement and strengthen each other in the creation of smart and competitive individuals. The center of learning which also has big role is family, because family is the first school which will be experienced by a child before he can enter larger social community. Family becomes stakeholder which becomes the key of success in the development of qualified human resources, because according to a research, the age of 0-6 years old is a base of the next children's growth and development.

The early childhood education as one of departement which is connected with children directly has strategic role in producing a facilitator which has competence and capacity, and creative in teaching children, because the early childhood era is the golden age in which this era is a base for the next era of development. Informal schools which have a mission, to create students who have competence as administrators, with a competence as "PAUD" facilitator also must be supported. It is expected that through creative and critical learning, students can become creative and expert facilitator in educating the children who bring the nation hopes.

Therefore the students who receive the skill of thinking creatively-critically are expected to become creative and critical facilitator in educating and guiding the pre-school children who will become the next nation generation.

The process of learning will create creative atmosphere if they are guided and facilitated with knowledge which is acquired with field facts and data, finding and developing concepts and applying them in the daily life and increasing the relevance between concepts and field facts, besides they can sharpen the skill of thinking and strategy of thinking so that it is expected that they will be active, critical, creative, and productive human beings in solving various social problems in the societies.

### **THE SKILL OF THINKING CREATIVELY AND CRITICALLY**

Thinking is a mental process which is done by an individual when he combines his knowledge, skills, and attitudes to understand his environment. The skill of thinking is defined as a process of using brain and mental to find a meaning and comprehension of something. Expressing various ideas and opinions and making rational considerations in making decisions and solving problems, then reflecting and making metacognition toward the experienced process. A process of learning is considered as a process of training the skill of thinking if the

process of learning and teaching focuses the children as the center of learning (student-centered), in this process the teacher only facilitates and guiding the students to increase their interests and potentials so that the students are encouraged to think, to conceptualize, to solve problems and to make decisions based on data and facts, and to realize and understand the consequences of the decisions. An individual who thinks critically will value an idea systematically before he decides to accept or reject it. An individual who thinks critically has high imagination power, tries to run original and innovative ideas, and can change and develop products or logics.

The main components of the skill of thinking are thinking critically, thinking creatively, making decision, and solving problems. The skill of thinking critically is a process of skill and ability to use mind in valuing the legality and properness of an idea, researching the truth and weaknesses of an opinion and making logical consideration by using reasons and evidences. Creativity, according to Gede Raka (2005: 17), is an ability to think new ideas, ability to see a new viewpoint and problem to develop new ideas to solve problems, the flexibility of thinking and the ability to think laterally.

Several activities which can encourage the skill of thinking creatively are: Firstly, making ideas which are connected with the discussed material. Connecting is making relationships in a condition or an event to find a structure or pattern. Secondly, making inferences or conclusions, namely an ability to make temporary inferences, which can be right or wrong, when viewing a problem. Thirdly, predicting, namely making predictions about an event based on observations, data, and experiences. Fourthly, making mental images or mind mapping an event, a concept or an idea. Fifthly, synthesizing, namely combining different elements to produce a picture or pattern in form of statement or other concrete forms. Sixthly, making hypothesis, namely making a general statement about the relationship between free variable and tied variable to explain an idea or problem, in which this hypothesis needs to be tested to test its validity. Finally, recreating, namely creating new things or changing ideas in solving problems ([www.members.tripod.com](http://www.members.tripod.com)).

Meanwhile the process of increasing the skill of thinking creatively, according to Petty (1997: 7), is an inspiration, namely how we generate students' opinions and ideas maximally, for example through the process of brainstorming, field observation, and media research. Distillation is checking the ideas and trying to decide the jobs which will be done. After deciding the ideas, the next stage is perspiration, namely conducting our best idea maximally. After our idea is conducted, then evaluation is a very important item in this cycle, because through the process of evaluation, we can know the weaknesses and strengths of the idea which is conducted so that we can fix it in the next process. The last stage is incubation. Incubation is leaving the job, although sometimes we still consider it, letting it on the surface of mind.

The skill of thinking critically is an ability to use mind to value a legality of an idea, researching the validity and weaknesses of an opinion or a theory and making logical consideration by using reasons and evidences which are based on facts and data. The examples of thinking critically are: Firstly, recognizing,

namely knowing the criterion or characters such as attributes, nature, quality, and elements of an object or a concept. For example, the students are brought to a field, divided into several play groups which use various methods and then they are asked to recognize which methods are the methods of *montessori*, *emilio region*, and other methods. Secondly, comparing and contrasting, namely the ability to find the similarities and differences, based on criterions such as attributes, nature, quality, and elements of an event, an object or a concept which are divided into small parts to get the meaning inside it. Fifthly, making opinions. Sixthly, valuing, namely making consideration about a matter by observing the strengths and weaknesses which are based on valid data and reasons. Finally, concluding, namely making a statement about something which is based on a deep research.

The aims of the skill of thinking creatively and critically are

1. Training the children to think critically and creatively in making decisions and solving problems wisely.
2. Applying knowledge, experiences, and skill of thinking practically and relevant with the field condition or society needs.
3. Generating innovative and creative ideas, concepts or theories.

### **THE IMPLEMENTATION OF THE SKILL OF THINKING CREATIVELY-CRITICALLY**

The skill of thinking creatively-critically can be conducted separately or together in the process of learning. In order to produce creative individuals, we need ability which is creative and flow smoothly, free and original, from our own minds. In the process of learning, tools which can be used as tools of thinking are:

#### **Questions**

Questions or works can encourage us to think deeper, wider, and comprehensively. In making questions, we have to pay attention to the questions, range, and focus. In estimating the depth of the questions, we can use *the Theory of Blooms*.

1. Cognitive Domain (Knowledge)
  - Knowledge: The ability of students to remember or memorize the learned materials.
  - Comprehension: The ability of students to comprehend and understand the meanings of the learned materials.
  - Application: The ability of students to apply the learned materials in a new concrete situation.
  - Analysis: The ability of students to describe the materials of training into various components and understand their structures.
  - Synthesis: The ability of students to combine separated parts into a new unity completely.
  - Evaluation: The ability of students to consider the values in the materials of training for a purpose.
  
2. Affective Domain (Attitudes)
  - Receiving: Realizing the existence of an idea or a process or a thing; the willingness to learn or try with special attitudes.
  - Responding: participating actively; responding obediently and then accepting satisfaction from the response.
  - Valuing: Accepting the values of trusted attitudes, values or dreams; expressing his preference interest; building commitment.
  - Organization: Conceptualizing various values; comparing, connecting, and organizing these values into a hierarchy.
  - Characterization: Following these values as a base to control or direct attitudes; integrating these values into the philosophy of life.
  
3. Psychomotor Domain (Skills)

- Perception: Realizing the existence of an action which must be taken through feeling.
- Set (Readiness): Ready to act mentally, physically, and emotionally.
- Guided Responses: Executing or conducting a certain action under supervision by imitating or experimenting; also involving practice.
- Mechanism: Executing a certain action ordinarily with certain level of trust; increasing efficiency.
- Complex Overt Response: Displaying an action automatically without fear and conducted with high skill.
- Adaptation: Able to modify or adapt a certain action and with certain skill to interact with a new situation.
- Origination: Creating the patterns of new movement or action to adapt a special situation or problem.

### **Mind Map**

Mind mapping and memory, according to Drydan and Vos, is the mapping of mind which was stated by Tony Buzan who had introduced knowledge in a map which can be manifested in the form of tree, pattern or association (2002: 164). Mind mapping is very useful to know the extent of students' comprehension and control of the given materials and problems which are associated with materials. Several points which must be highlighted in mind mapping are:

1. The main theme which is located on the center.
2. There are main branches for every sub-theme.
3. Singular words are used for every concept.
4. Whenever possible, every concept has a picture.

### **Problem Based Learning**

This method of learning is aimed to make the students can know the problems and can comprehend them and then, in the next level, can give applicative solutions for problems. This method is not only can train the cognition, but also can train the students to cooperate and respect other students' ideas.

### **Games/Permainan**

Games can be used as tools or media of learning to remember or refresh the stressful students, and also they still can remember the given materials because based on a research which was conducted by Meier, every individual is happier to study in a fun condition (2002: 207).

In order to make the learning can build effective and optimal knowledge and creativity, Meier explains that there are several points that must be highlighted:

1. Learning involves all mind and body. Learning is not only uses "brain" (conscious, rational, verbal and left brain) but also involves all body and mind with all emotions, senses, and nerves.
2. Learning is creating, not consuming. Knowledge is not something which is absorbed by a learner, but it is something which is created by a

learner who combines new skill and knowledge into his own mind structure. Literally learning is creating new meanings, new tissues of nerves, and new electrochemical interaction patterns in the system of brain and body completely.

3. Cooperation can help the process of learning. All good efforts have social bases. We usually learn more things by interacting with friends compared with every thing which was learned by us, the competition among them slows the learning, but cooperation fastens it. A community of learning always has better results when compared with several individual who learn separately.
4. Learning occurs in many levels simultaneously. Learning is not only absorbs a small thing linearly, but absorbs many things at once. Good learning involves an individual in many levels simultaneously (consciously and unconsciously, mentally and physically) and uses all receptor nerves, senses, ways in his brain total system. However, brain is not a linear processor, but a parallel processor, and brain will develop faster if it is challenged to do many things at once.
5. Learning originates from doing something alone. Best learning is learning in context, the materials which are learned separately are harder to remember and easy to evaporate, true and concrete experience can be a teacher which is better than a hypothetical or abstract thing as long as there is a chance to participate in it directly and totally to get feedback, thinking, refreshing.
6. Positive emotion can help the process of learning. Feelings determine the quality and quantity of an individual learning. Negative feeling also can block critical and creative learning. Learning which is full of pressures, painful, and sad cannot defeat the atmosphere of peace, fun, and attractive learning.
7. The image-brain absorbs information directly and automatically. Human beings' systems of nerves are processors of images, not processors of words. The concrete pictures are easier to captured and retained than the verbal abstract. Translating the verbal abstract into various types of concrete pictures will make the verbal abstract faster and easier to learn (2002: 54-55).

The above stages are applied in the learning activities while considering the conditions and adapting with the students' abilities.

## **CONCLUSION**

Basically the process of learning is a process of transmission of values, concepts, and culture which is aimed to improve the quality of human beings. The model of skill of thinking creatively-critically is expected can develop the abilities of students in the global life. The main competence of informal schools students as the administrators of the learning programs must be supported with other competence which can strengthen their positions and roles in non-government organizations. The program of early childhood education is one of the programs

which become the supportive competence for students in running an education unity. The early childhood is the golden age to develop their full potentials so that we need creative facilitators to conduct creative approach for the children. Critical abilities are needed in valuing an idea, a concept or theory which will be used, so that our students are expected to approach the children correctly in accordance with their stages of growth and development.

The implementation process of the skill of thinking creatively-critically consists of the process of preparation or apperception, execution and training or evaluation. In order to make the skill of thinking creatively-critically run optimally, we have to design the process of learning by using various tools or media, such as questions or cases, mind mapping, data, games and field facts. The activities are giving many alternatives or choices to the learners, giving comprehension about the consequences of their choices, comparing, contrasting, collecting and grouping, attributing, analyzing, valuing, concluding, stating ideas, connecting, hypothesizing, synthesizing, analogizing, and creating. In order to make the process of learning run optimally, according to Meier (2002: 54), there are several things that must be highlighted, namely: Learning must involve all body; the process of learning is creating, not consuming; cooperation helps the process of learning, learning occurs simultaneously, learning originates from doing something alone with feedback, positive emotions can help in the learning, and, finally, the image-brain absorbs information directly and automatically.