Analysis Of Student Creativity Thinking Skills Through SWOT Analysis

Hikmat Zakky Almubaroq
Universitas Pertahanan
Jakarta, Indonesia
zakkyauri94@gmail.com

***Abstract*-This study aims to identify and analyze how creative thinking skills are one of the skills that must be possessed by students. This research was conducted within the scope of the department of education administration using a qualitative approach. Research data were obtained from interviews and questionnaires. Creative thinking skills possessed by Education Administration students are quite good, especially in indicators of Fluency and Flexibility. However, there are weaknesses shown in the indicators of novelty or novelty. In this case, students are less able to make an original answer that is completely different from other students' answers. Then out of ten participants who participated, there were only two participants who were able to make an original answer that was completely different from the other answers.**

Keywords— 4C, 21-st Century Learning, Creativity

INTRODUCTION

Science and technology continue to develop so that they can change the world, as the first industrial revolution that occurred in England in the 18th century was able to give birth to history when the steam engine used for the textile production process could increase the productivity of the industry. The workforce that originally depended on humans and animals was eventually replaced by these machines. With the existence of this first industrial revolution, the level of the economic life of the people at that time was able to increase drastically.

The history of the industrial revolution started from the industrial revolution of 1.0, 2.0, and 3.0 to the Industrial Revolution of 4.0. The industrial revolution phase is a real change from existing changes. Industry 1.0 is characterized by the mechanization of production to support the effectiveness and efficiency of human activities. Industry 2.0 is characterized by mass production and quality standardization, and Industry 3.0 is characterized by mass customization and Flexibility of automation and robot-based manufacturing. Industry 4.0 is further marked by cyber-physical and manufacturing collaboration [1].

The history of industrial development is a reflection that life is constantly developing and changing. Along with this, the Industrial Revolution 4.0, also known as the digital revolution, was born due to the proliferation of computers and technology automation in various fields. The Industrial Revolution 4.0 is said to be the era of technological disruption because automation and connectivity in a field will make the movement of the industrial world and work competition non-linear. This causes humans to live in uncertainty. Therefore humans must have the ability to predict a future that can change quickly [2]

Along with the development of technology, education in Indonesia is also changing. In its regulations, the education system in Indonesia continues to develop, starting from Law no. 4 of 1950 in conjunction with Law NO. 12 of 1954, concerning the Basics of Education and Teaching in Schools for All of Indonesia, then Law No. 2 of 1989 concerning the National Education System was born, where this Law substantially affirms the basis of national education, namely Pancasila and the 1945 Constitution. In subsequent developments as a form of the Government's commitment to improving education in Indonesia, and because Law No. 2/1989 was considered to be still less relevant, Law No. 2/1989 was replaced with Law No. 20 of 2003 concerning the National Education System [3].

The changes that occur will continue to follow the times so that education in Indonesia will be relevant to global conditions. In the current condition, which is filled with all the uncertainty (uncertainty) and the acceleration of information is unstoppable. Education is required to be able to adapt and continue to develop and produce human resources who are able to have competitiveness in the era of the industrial revolution 4.0.

Facing the changes that occurred in the 4.0 industrial revolution is not an easy thing, preparing things related to these changes is an obligation. One of the important elements that must be a concern to encourage economic growth and the nation's competitiveness in the era of the industrial revolution 4.0 is to prepare a more innovative learning system and apply 21st century skills learning. Because the trend in the 21st century is more focused on certain specializations, the goals of Indonesia's national education must be directed at efforts to shape the skills and attitudes of individuals in the 21st century [2].

[4] stated that learning must be able to contribute to the world of work and society so that in learning there needs to be adjustments that equip students with 21st Century skills. Wagner (2010), said that there are 7 21st century skills which include: (1) critical and problem-solving skills, (2) collaboration and leadership, (3) adaptability and agility, (4) initiative and entrepreneurial spirit, (5) effective communication, (6) the ability to access and analyze information, and (7) curiosity and imagination. [5] classifies 21st century skills and attitudes as ways to thinking (knowledge, critical and creative thinking), ways to learning (literacy and soft skills), and ways to learning with other (personal, social, and civic responsibilities) . The US-based Partnership for 21st Century Skills (P21) identifies critical thinking skills (Critical Thinking Skills), creative thinking skills (Creative Thinking Skills), communication skills (Communication skills), and collaboration skills (Collaboration skills) as required competencies. in the 21st century. These four competencies are known as 4C competencies.

METHODE

The research method used in this research is descriptive method. Descriptive research is research on a certain phenomenon or condition obtained by researchers from the subject in the form of individual, organizational or other perspectives. The purpose of the descriptive method is to explain aspects that are relevant to the observed phenomena and explain the characteristics of the existing phenomena or problems. In general, descriptive research does not use hypotheses (non-hypotheses) so that in their research there is no need to formulate hypotheses [6].

the method of collecting data is through closed interviews conducted to 6th semester students. Data obtained from interviews and questionnaires are recorded in field notes which are then stored and entered into Nvivo 12 to then be sorted and analyzed for coding in NVivo 12.

Data reduction is a form of analysis to sharpen, direct, and discard irrelevant data. This process is carried out in the NVivo 12 software. This step includes the selection, focusing on simplification, transformation of the raw data emerging from the field notes. This step aims to determine information that is appropriate and not in accordance with the research problem

ng from the first participant to the tenth participant.

RESULT AND DISCUSSION

Creative thinking can also be said to be lateral/divergent thinking, namely the type of thinking that uses information not only for the sake of thinking but also for results and can use information that is irrelevant or may be wrong in several stages to reach the right solution. Creative or divergent thinking is also a type of thinking that comes out of various existing ideas and perceptions to find new ideas/ideas [7].

Based on the results of data collection, the findings related to Creative Thinking skills are as follows:

A. Self-Assessment of Creativity Thinking Skill

To analyze creative thinking skills possessed, researchers asked for participation to explain how the creative thinking skills possessed by the participants, this is to find out what indicators of critical thinking skills will emerge from their assessment. The indicators of critical thinking skills used in this study are based on The Torrance Test of Creative Thinking (TTCT) initiated by Silver. The three components used to assess creative thinking skills through TTCT are Fluency, Flexibility and novelty .

results of the questionnaire stated that there were two indicators of creative thinking skills that emerged from the participants' answers, including Fluency, Flexibility, then there were also several creative thinking skills which the researchers categorized themselves based on the answers from the participants. For more details, see the following image

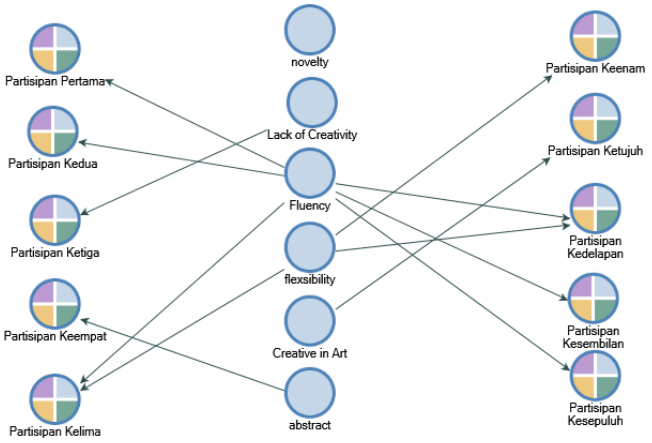

Figure 1. *Self-Assessment of Creativity Thinking Skill*

From the picture above we can see what indicators each participant raised. The explanation is as follows:

1) *Fluency* _

This indicator is illustrated in the number of ideas/answers given by someone to a problem. In the self-assessment, there are 6 participant answers that describe *Fluency* or Fluency, namely:

- The first participant, with the following answers:
  1. "1. Can formulate problems clearly and precisely to find the main problem.
  2. Collect and review relevant information
  3. Can make reasonable conclusions and solutions, and test them to verify or ensure that the right solution has been reached
  4. Keep an open mind to find other alternative solutions"
- The second participant, with the following answers: "developing an idea"
- Fifth participant, with the following answers:

  "The creative thinking skills that I have, for example, are when I'm working together on assignments with

other students in a group, I provide new ideas both in terms of content and support (aesthetics) so that the group's work is presented in an attractive way to the audience. and lecturers"

- The eighth participant, with the following answers:

  "I like to find out more about things that interest me, it can be in the form of small research or small research. Where later the results will bring up personal opinion from myself and form a new idea that I always write down with the hope that in the future I can make it happen "

- The ninth participant, with the following answers:

  "In my opinion, my thinking skills are quite creative, I am able to solve many problems, but in proposing new and different problems I think I am still lacking"

- Participant ten , with the following answers:

  "I am quite creative although sometimes I need some references first"

These six answers are included in Fluency because basically they think they have sufficient creativity to generate an idea or solve a problem.

2) *Flexibility* (Dexterity)

This indicator is reflected in the answers given by someone very different from other people , the person is able to provide answers from several points of view so that the variations in the answers vary and tend to be different from the others. There are three participant answers that reflect *Flexibility* , namely:

- Fifth participant, with answers:

  "The creative thinking skills that I have, for example, are when I'm working together on assignments with other students in a group, I provide new ideas both in terms of content and support (aesthetics) so that the group's work is presented in an attractive way to the audience. and lecturers"

- Sixth participant, with answers:

  "Able to provide innovative ideas for solving a problem"

- Eighth participle, with answers

  "I like to find out more about things that interest me, it can be in the form of small research or small research. Where later the results will bring up personal opinion from myself and form a new idea that I always write down with the hope that in the future I can make it happen "

These three answers are included in *Flexibility because* the answers from the three participants can reflect how participants solve a problem , such as innovative nature that can help participants assess and combine existing ideas into something new, have new ideas that can be applied as main ideas or become a supporting idea so that the solutions offered can be better, lastly I am happy to be doing a mini research which of course can produce answers that are different from the others.

3) *Creativity in Art* (creativity in Art)

One participant explained that skill his creative thinking is in Art, especially in imagination, as he explains as follows:

"I have the skills to think creatively in imagination, because my hobbies are in the fields of graphic design, photography/videography, and video editing, which should keep these skills honed"

4) *abstract* (abstract)

According to his own judgment, one of the creative thoughts possessed by participants is abstract thinking . This is in accordance with the participant's answer, namely "the creative thinking that I have is usually quite abstract and sometimes a bit difficult to apply". Participants felt that their creative thinking skills were abstract and sometimes a bit difficult to explain, so it was difficult to include these answers in one of the indicators of creative thinking skills, therefore based on why self - assessment , the answer is categorized as *abstract*

5) *Lack of Creativity* (less Creative)

One of the participants answered "I'm not very creative. Maybe because of the inadequate environment." Participants felt that they were not very creative so it was difficult to include these answers in one of the indicators of creative thinking skills, therefore based on why self - assessment , the answer is categorized into *lack of creativity*

B. Student Creative Thinking Skills

In analyzing students' creative thinking skills , researchers used the same case examples used in the analysis of critical thinking skills. In assessing critical thinking skills, the researcher gave directions to participants about the stages and what things should be done, but in the analysis of creative thinking skills, the researcher did not provide specific instructions or directions , but the researcher directly analyzed how students ' creative thinking skills were based on the answers given by participant. The data found are as follows:

1) Description of the thinking skills of the first participant

Based on the participants' answers, the participants' creative thinking skills were already visible, especially in determining the strategy to be carried out. Participants were able to provide various strategies that could be implemented to solve problems experienced by schools, such as increasing mastery of teacher ICT competencies , maximizing the advantages of existing infrastructure in schools, and improving quality management.

2) Description of the thinking skills of the second participant

Based on the answers given , participants can only provide two strategies out of the 4 available strategic options, these two strategies are the same as the strategies given by the first

respondent, namely increasing teacher ICT competence and maximizing the use of infrastructure owned by schools. In this case the Flexibility of participants in determining strategies and programs is only based on the two most common things, namely teacher ICT competence and maximizing existing infrastructure.

3) Description of the thinking skills of the third participant

Based on the answers given , participants could only provide two strategies out of the 4 available strategic options, the two strategies explained were increasing teacher ICT competence and collaboration with the environment around the school, namely the pencak silat hermitage and dance studios. But the interesting thing that was obtained from the third participant was that the participant was able to provide something different from the other participants, namely on the question of strength, the third participant answered by stating that the number of students was in accordance with national standards, among all the participants who were there were only the third participant who looked at it from the perspective of the applicable rules.

4) Description of the fourth participant's thinking skills

Based on the participants' answers, especially in determining strategies, participants were able to provide various strategies that could be applied to solve problems experienced by schools, the strategy used was to design HR performance evaluations, increase the role of public relations, then collaborate with the environment around the school, namely the pencak silat school and the studio dance. The selection of public relations performance improvement is something that deserves attention, because the strategy developed by the participants is not only based on the SWOT strategy, but the participants find another point of view, namely from increasing the role of public relations.

5) Description of the fifth participant's thinking skills

Based on the answers, participants were able to provide various alternative strategies to solve problems faced by schools, the strategies used were increasing teacher ICT competence , collaborating with the environment around the school, namely pencak silat schools and dance studios, school branding by participating in competitions and promotion to the community /candidates learners. In the activity program compiled by the fifth participant, there is a Healthy School Contest (LSS) program and making websites and advertisements as a form of school rebranding as well as socialization done for society. Of all the programs provided, LLS and website creation are the only new programs that were not mentioned by the other participants .

6) Description of the sixth participant's thinking skills

Based on the answers of the participants, especially in determining strategies, the Flexibility of the participants is able to provide various strategies that can be applied to solve problems experienced by schools, the strategies used are increasing recruitment selection, training existing teaching staff, working with the environment around the school, namely pencak silat schools and studios dance and Outreach to the community about the advantages of the school. One alternative strategy chosen is the selection of increased teaching staff . Participants did not only see the existing problems but also the source of the problem , namely the teacher selection raw input.

7) Description of the seventh participant's thinking skills (Reza Darmawan)

Based on the participants' answers, especially in determining the strategy, the strategy used is to improve infrastructure so that it becomes the hallmark of the institution, increase recruitment selection and work with the environment around the school, namely the pencak silat hermitage and dance studio and outreach to the community about school excellence. From this strategy, the participants saw other problems that the school had, because one of the problems was competitiveness, the participants had a strategy to improve infrastructure, so that highly qualified facilities could become the hallmark of the school and become a separate value in the eyes of society.

8) Participant thinking skill description Eight (Faza)

From the participants' answers, the strategy used was the same as the other participants, namely, increasing teacher ICT competence, maximizing the use of facilities infrastructure , and working with the environment around the school, namely the pencak silat hermitage and dance studios and outreach to the community about the advantages of the school. The creative side that can be shown is that participants are able to provide 4 different strategies to provide a strategy for solving the school's problems. Then the program provided is quite interesting, namely sending teachers to training institutions to improve their competence

9) Participant thinking skills description Nine

From the answers of the participants, the strategies used varied from the start

Making extracurriculars by collaborating with the environment around the school, increasing teacher ICT competence by involving teachers in training , holding events or activities involving residents around the school environment . Form a program evaluation team. From all these ideas, there are ideas that are different from the other participants, namely in the programs offered, the programs offered by the participants are as follows "Creating a Go Green Program, namely a greening and cleaning program in schools every weekend of learning, for example Friday or Saturday. Apart from beautifying the school and increasing the comfort of school residents, this program can also enable schools to take part in Adiwiyata school competitions which can increase student achievement."

10) Description of participant thinking skills ten (Rezza F)

Finally the tenth participant, the participant is able to give some alternative solutions to existing problems, namely, ICT socialization and education for educators in schools, optimizing available facilities and increasing school branding. Meanwhile, the program activities carried out are still focused on improving the quality of teachers and increasing the image or popularity of schools. Even though the participants could not fill out the fourth strategy , the programs compiled by the participants were quite different from other people, it can be seen that the skills in viewing information broadly so that the completion can also be done in various ways.

To find out the word with the highest frequency of occurrence, the researcher describes it using the Word Cloud method. This method was chosen because it is more informative and easy to understand and the description of the frequency of words can be displayed in an interesting way In the NVivo QSR there is a tool that can make creating a Word Cloud , so making it is not as difficult as it seems, while the results of creating a word cloud are as shown below:

Figure 2 Word Cloud Program Participants

Figure 3 Word Cloud Strategy of the Participants

We can see that the words performance, ICT, martial arts, extracurriculars, training, training, evaluation, and Art are the words most often expressed by the participants. This means that the things related to the word are standards for each respondent to determine indicators of Skills and creative thinking possessed by each participant.

The results obtained by the word cloud found the strategies and programs most frequently used by the participants. The strategy is in the form of collaboration with the environment around the school, namely dance studios and Pencak silat in extracurricular programs, and improves the competence of human resources through training programs, evaluations, or workshops.

After knowing the general description of the answers from the participants, the next researcher analyzed how the creative thinking skills possessed by the participants. To smell analyze skill indicators students think creatively, researchers use Nvivo so that the visualization of the data obtained is more informative and easy to understand. After being analyzed and processed using NVivo , the data visualization is obtained as follows:

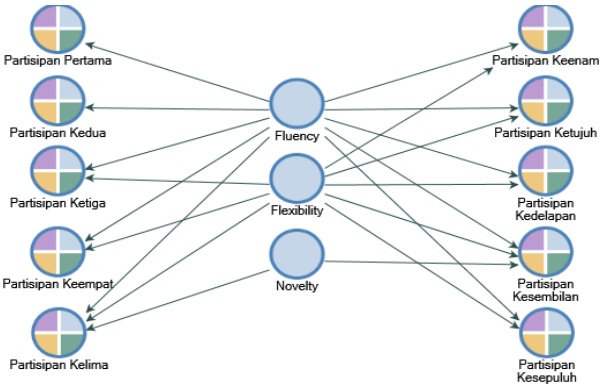

Figure 4 Indicators of Student Thinking Skills

As previously explained, the indicators of critical thinking skills used in this study are the 3 critical thinking skills expressed by Silver [8], namely Fluency , Flexibility and Novelty . Based on Figure 4.45, all respondents have Fluency, that is, respondents can convey various ideas, this is evidenced by several strategies and programs provided by participants. Furthermore, the eight participants were able to demonstrate Fluency and Flexibility in conveying their strategies and programs. The Flexibility that emerged was assessed from the answers given other than the answer that has been used as a standard is increasing human resource competence and collaboration with institutions around the school. Final Participants who were able to demonstrate Fluency, Flexibility and novelty were as many as two people. This novelty was assessed from answers that were really different from the others and only these two people were able to provide different solutions to the problems given.

CONCLUSION

As one part of the 4C skills, of course, creative thinking skills must be possessed by everyone, based on the results of the analysis it can be concluded that the creative thinking skills

possessed by Educational Administration students are quite good, especially in indicators of Fluency and Flexibility, in this case students are able to provide various answers. and diverse ideas and can see a problem from various points of view so as to produce various alternative answers. However, there are weaknesses shown in the indicators of novelty or novelty. In this case, students are less able to make an original answer that is really different from other students' answers, then out of ten participants who participated there were only two participants who were able to make an original answer that was completely different from the other answers.

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