

CREATIVE THINKING SKILLS IN SUB MATERIAL FACTOR AFFECTING THE RATE OF REACTION WITH THE APPLICATION OF ONLINE-BASED WORKSHEETS ON GUIDED INQUIRY LEARNING

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Abstract

One of the skills that must be possessed in the 21st century is the ability to think creatively. This research aims to apply student worksheets (LKPD) to improve creative thinking skills through guided inquiry learning models. The research method used a quantitative descriptive method where only one class was used without a comparison class with a one-group pretest-posttest research design. The instruments used were observation sheets of guided inquiry implementation, student activities, knowledge test sheets, creative thinking skills test sheets, and student response questionnaires. The research results obtained data: (1) The implementation of guided inquiry learning models at the first and second meetings went well with a percentage of 97.72% and 98.71%. (2) The percentage of relevant activities is higher than in irrelevant activities. (3) The learning outcomes of the knowledge test and the creative thinking skills test increased as evidenced by the N-gain value on the knowledge test of 0.79 with the high category and the creative thinking skills test of 0.77 with high criteria (4) The results of the response of students showed a response positive as evidenced by the results of the classical questionnaire percentage of 87.3% with the very good category. This shows that learning by applying guided inquiry-based LKPD is effective for improving students' creative thinking skills on the sub-material factors that affect the rate of reaction.

Keywords: Creative thinking skills, guided inquiry, online learning, rate of reaction

Abstrak

Salah satu keterampilan yang harus dimiliki pada abad 21 ini adalah kemampuan berfikir kreatif. Penelitian ini bertujuan untuk menerapkan lembar kerja peserta didik (LKPD) guna meningkatkan keterampilan berfikir kreatif melalui model pembelajaran inkuiri terbimbing. Metode penelitian menggunakan metode deskriptif kuantitatif dimana hanya menggunakan satu kelas saja tanpa adanya kelas pembandingan dengan desain penelitian one group pretest-posttest. Instrumen yang digunakan adalah lembar pengamatan keterlaksanaan inkuiri terbimbing, aktivitas peserta didik, lembar tes pengetahuan, lembar tes keterampilan berfikir kreatif, dan angket respon peserta didik. Hasil penelitian didapatkan data: (1) Keterlaksanaan model pembelajaran inkuiri terbimbing pada pertemuan pertama dan kedua berjalan dengan baik dengan prosentase sebesar 97,72% dan 98,71%. (2) Prosentase aktivitas relevan lebih tinggi daripada aktivitas yang tidak relevan. (3) Hasil belajar uji pengetahuan dan uji keterampilan berfikir kreatif meningkat dibuktikan dengan nilai N-gain pada uji pengetahuan sebesar 0,79 dengan kategori tinggi dan uji keterampilan berfikir kreatif sebesar 0,77 dengan kriteria tinggi (4) Hasil respon peserta didik menunjukkan respon positif dibuktikan dengan hasil prosentase angket secara klasikal sebesar 87,3% dengan kategori sangat baik. Hal ini menunjukkan bahwa pembelajaran dengan menerapkan LKPD berbasis inkuiri terbimbing efektif untuk meningkatkan keterampilan berfikir kreatif peserta didik pada sub materi faktor-faktor yang mempengaruhi laju reaksi.

Kata Kunci : Keterampilan berfikir kreatif, inkuiri terbimbing, pembelajaran online, laju reaksi

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INTRODUCTION

The revised 2013 curriculum is a curriculum used to prepare Indonesians to become faithful, productive, creative, innovative, and effective citizens and to contribute and devote themselves to society, nation, state, and world civilization (Kemendikbud, 2013). One form of skill that must be possessed in the 21st century is the ability to think creatively in solving existing problems (Sandika et al, 2018). However, according to research that has been done, it states that the level of creative thinking skills of students, especially high school students, is in a low category, where students are still unable to find new ideas quickly in solving a problem (Sugiyanto et al, 2018). This shows that special attention is needed to improve students' creative thinking skills (Asriadi & Istiyono, 2020).

In addition, in the 21st century there is a COVID-19 pandemic. The coronavirus disease 19 (COVID-19) is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is emerging in Wuhan, China and spread around the world (Cortegiani et al, 2020; Handayani et al, 2020; Shereen et al, 2020). caused the learning process to be disrupted, where the learning process that was previously done face-to-face turned online. This is because of the danger of coronavirus and the increasing rate of transmission because it is easily spread contagiously (Mona, 2020). So it is not only the responsibility of the government but all elements of society must participate in order to prevent and reduce the level of transmission of the COVID-19 virus (Hamid, 2020). Evenly distributed the development of technology in certain regions and the difficulty of internet access makes the learning process become disrupted.

Creativity is a product of the ability to think creatively. Efforts to develop students' creative thinking skills are a necessity given the importance of the role of creativity in improving the thinking skills of students (Nursa'adah & Rosa, 2016; Sugiyanto et al, 2018). Creative thinking is a mental activity carried out to develop or find ideas. Original, aesthetic, constructive ideas that are directly related to conceptual views and emphasize the aspects of intuitive and rational thinking (Asriadi & Istiyono, 2020; Pada, et al, 2016; Wu et al, 2018). According to Guilford and Torrance, there are four characteristics of creative thinking which include originality, fluency, flexibility, and elaboration (Amtiningsih et al, 2016; Perdana et al, 2019; Sener & Tas, 2017; Türkmen & Sertkahya, 2015). Creative thinking skills are needed to be able to improve self-quality because in the future there is a demand for creative thinking to develop oneself to be able to create new ideas that can develop and be useful for society, nation, and state. Creative thinking skills are also defined as the application of imagination in dealing with a given problem, thinking systematically in expressing ideas and solving problems (Amtiningsih et al, 2016; Khoiri et al, 2019). Besides, many positive impacts are arising from the creative thinking process, this makes creative thinking skills important to be applied in schools to prepare better quality individuals (Hamruni, 2012; Roestiyah, 2012; Sanjaya, 2014). To improve students' creative thinking skills, it can not only be done in the classroom but learning outside the classroom with the surrounding environment is also able to encourage students' creative thinking skills (Davies et al, 2013; Sari et al, 2017).

There are several learning resources that students can use to help improve their understanding of the material being studied. One of the learning resources that can be used is the Student Worksheet which is a printed teaching material in the form of paper sheets containing material, summaries, and instructions for carrying out tasks that must be done by students in the learning process concerning basic competencies (KD) that must be achieved (Indriani et al, 2014; Praswoto, 2012). Therefore, the Student Worksheet can be used for understanding new concepts or understanding advanced concepts. According to research conducted to train students' creative thinking skills only up to the limited trial stage, so it is necessary to apply the learning process to be able to measure the level of effectiveness and train students' creative thinking skills (Mayasari, 2019).

One of the chemistry learning materials that can be used to train creative thinking skills is the reaction rate material, especially in the sub-material of the factors that affect the reaction rate. In this sub-material, students not only use their understanding but must use skills to improve their understanding of the material factors that affect the rate of reaction. In the sub material, the factors that affect the reaction rate of students must be able to analyze the facts to support their understanding of this material and teachers actively guide students to find answers to problems given and related to daily life in addition to creative thinking skills, especially in chemistry learning is still classified as low (Fatmawati et al. 2019; Kurniati et al, 2018; Sari et al. 2017).

Based on the results of a questionnaire that has been conducted at Senior High School of 16 Surabaya to find out students' initial creative thinking skills which include thinking skills of originality, fluency, and flexibility. In the results of the questionnaire analysis, the results of the students' ability to formulate problems with creative thinking skills in the form of originality, flexibility, and fluency were 31.25%, the ability of students to formulate hypotheses with creative thinking skills in the form of originality, flexibility, and fluency by 18, 75%, the ability of students in determining experimental variables with fluency and flexibility creative thinking skills of 28.125%, the ability of students to determine tools and materials and experimental steps with fluency and flexibility creative thinking skills of 18.75%, the ability of students to analyze Experimental data with original creative thinking skills and flexibility of 15.62%, the ability of students to make conclusions with originality, fluency and flexibility creative thinking skills of 21.87%. From these data, it shows that the creative thinking skills of students at Senior High School of 16 Surabaya are in a low category. So that to strengthen students' creative thinking skills, it is necessary to apply guided inquiry-based Student Worksheets.

Inquiry-based teaching is another instructional approach that has been developed to teach students how to think. Inquiry-based teaching mostly rests on the theoretical foundation of teaching concepts (Arends, 2015). Guided inquiry is an activity where students work to find answers to problems given by the teacher but are still under intensive guidance from the teacher. At this level students have a greater portion of control over the class than the teacher. The teacher only acts as a facilitator where it provokes students to solve a problem. So in this model teacher become a facilitator for student to resolve a problem. Its make a techears must have biggest creativity to help student get our creativity. The process of solving a problem remains under the guidance of the teacher in obtaining solutions to the problems given (Anam, 2015). The guided inquiry learning model is learner-centered. In the guided inquiry learning model students can find concepts independently but still under teacher guidance (Lukitasari & Yonata, 2015). The guided inquiry learning model has weaknesses and strengths, With this, to overcome the weaknesses in the guided inquiry learning model, the teacher must be able to provide varied questions by connecting questions through everyday life so that students are able to link the phenomena that occur in order to provide varied problem-solving solutions and from the phenommena student can make corelation between teory that they get in school. The teacher is only a facilitator but in guided inquiry learning the teacher still guides students to be able to find various solutions to the problems that have been given and teacher must can make student to be active for asking in the class and its will be become a class more active and teacher will be more easy to knowing student about teory that they get from school (Mayasari, 2019). Therefore, the guided inquiry learning model is effective for improving students' creative thinking skills through the application of Student Worksheets and more aplication that can make student more knowing about the teory (Hasan et al, 2019).

RESEARCH METHOD

In this research, 36 students of grade XI Science at Senior High School of 16 Surabaya were conducted twice, namely on September 16 and 22, 2020. The type of research used was pre-experimental with quantitative descriptive methods, in this research only one class was used without any comparison class. Design used was one group pretest-posttest. It is a research design

in which students are given a pretest before being given treatment. Then after being given the treatment, to determine the success of the treatment given, students were given a posttest to find out and compare the conditions after treatment and before treatment, as follows:

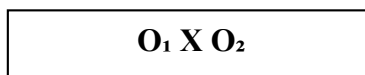


Figure 1. Design used was one group pretest-posttest

Information:

O₁ : students' creative thinking skills before inquiry learning

X : application of the inquiry learning model to the subject matter of reaction rates

O₂ : Students' creative thinking skills after learning inquiry

(Sugiyono, 2015).

Learning takes place in groups where the teacher divides students into 8 heterogeneous groups, where 1 group consists of 4-5 people. Before starting the learning process is given a pretest questionnaire that serves to know the initial ability of learners. Then followed by the process of teaching and learning online through WA group, Google Classroom and ZOOM. The completeness of learners' learning is assessed through Student Worksheets. During the learning process students are guided to work on student worksheets that have been given and that have been designed to be able to improve students' creative thinking skills. Starting with the process of explaining the material through ZOOM then continued with group discussions through WA groups and the collection of assignments or completion of Student Worksheets through Google Classroom. After that, it was continued with the provision of posttest questionnaires to find out the implementation of Student Worksheets with inquiry learning models guided to improve creative thinking skills and ended with the filling of student responses to find out the level of interest of students in learning and understanding the materials provided.

The instrument that used, namely: 1) syllabus, 2) lesson plans, 3) textbooks, 4) Student Worksheet. And research instruments in the form of a Learning implementation observation sheet, student activity observer sheet, knowledge, and skills test sheet, and student response questionnaire. The method of data collection using the method of observation, student activities, technical tests of knowledge and skills, and student response questionnaires. The observation method is used to determine the feasibility of learning according to the syntax of guided inquiry learning and the test method to measure students' creative thinking skills after being taught with a guided inquiry learning model which is said to have good criteria if it reaches a score of ≥ 2.1 (Riduwan 2015). Observation of student activities is used to determine the activities of the teaching and learning process that are taking place, with learning activities that are going well, students' understanding of the material provided by the teacher will also be well absorbed. This is shown by the creative thinking skills of students through the answers given when working on student worksheets where the teacher continues to guide students in answering questions on student worksheets. It is said to have achieved the goal if the N-gain value is ≥ 0.30 (Riduwan 2015). As well as student response questionnaires to find out students' responses to the learning that has been applied. It is said to have achieved the goal when the average score reaches ≥ 61 in the good category (Riduwan, 2015).

RESULTS AND DISCUSSION

Before the research, it is necessary to validate the research tools or instruments used. This aims to determine the level of validity of research data and the tools and research instruments used. In this research, the validation results were obtained from validators with an average result of 80% in the valid category. In the implementation of the guided inquiry learning model, it was observed by two observers through two online meetings through the zoom application. The results of the implementation of the guided inquiry learning model at each stage during two meetings can be seen in the following picture:

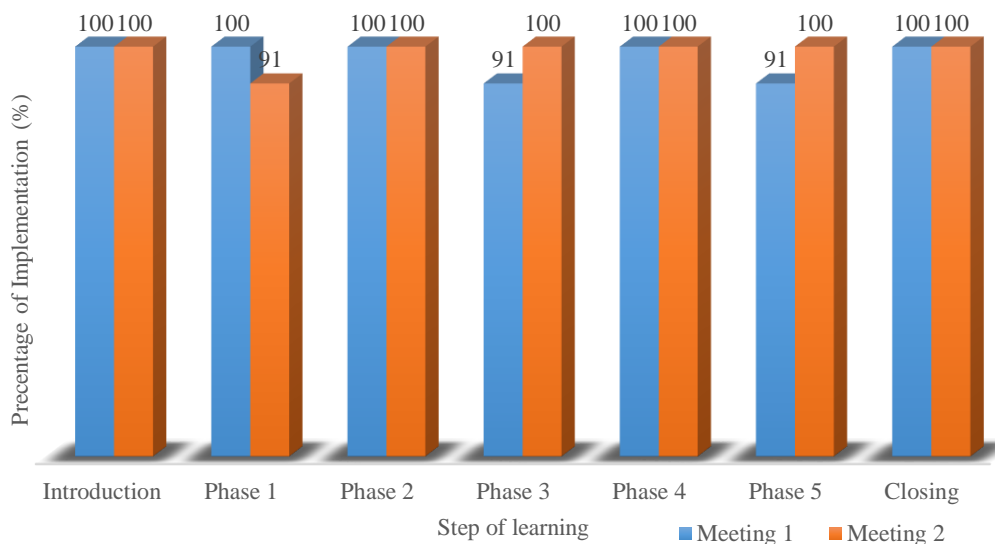


Figure 2. Learning Implementation Graph of Guided Inquiry Learning

Based on the data in Figure 2. It shows that the implementation of the guided inquiry learning model for two online meetings has been carried out well with an average of 97.72% implementation at the first meeting and 98.71% at the second meeting with a very good category (Riduwan, 2015). Chemistry as a process/method of investigation (discovery/inquiry) includes ways of thinking, attitudes, and steps for scientific activities to obtain chemical products, starting from finding problems, gathering facts related to problems, making assumptions, controlling variables, monitoring, Take measurements, inference, predict, calculate and process observation/measurement data, as well as summarize and communicate (Putri & Novita, 2016)

Introduction, namely the activity of appreciation and delivery of learning objectives through the Zoom application. Where it begins with the teacher sharing the student worksheet link so that students can download the LKPD file individually and share the Zoom link

Phase 1 presents a problem or phenomenon that is carried out through the Zoom application. Done by changing the video phenomenon of applying factors that affect reactions in everyday life and dividing students into 8 small groups, where each group consists of 3-4 people. And with different topics in groups 1 and 2 of the sub-material of the influence factor on the reaction rate, group 3 and 4 of the sub-material factor of the influence of the surface area on the reaction rate, groups 5 and 6 of the sub-material of the factor of the influence of temperature on the reaction rate and group 7 and 8 sub material factors of the effect of the catalyst on the reaction rate. The percentage of compliance in this phase was 100% and 91%.

Phase 2 is data and verification which is done through the WA group application. Where is the teacher who follows students to make a problem formulation and determine a hypothesis? Done by directing students to read the phenomena that have been given then given examples and the correct steps to determine the formulation of the problem and hypothesis properly and correctly. The percentage of compliance in this phase is 100% and 100%.

Phase 3 is stage data. At this stage, this is done through the WA group application where a group has been created according to the group. The group is used as a medium for discussion together with support from the teacher. Students read the phenomena contained in the student worksheets that have been given and then proceed with giving experimental videos of the factors that affect

the reaction rate. Where the results of the experimental video observation are used to answer the questions on the student worksheets. So that students get experimental data through videos that have been seen and observed. The percentage of implementation at this stage is 91% and 100%.

Phase 4 is formulating an explanation or message through the Zoom application so that students are redirected to follow the learning process through the Zoom application. In this phase students present the results of the discussion where the process of communicating the results is carried out in a representative manner on each sub material which is carried out for approximately 10 minutes and a question and answer session and discussion together to determine the correct answer and the results that have been presented and remain under guidance teacher. At this stage of implementation, it reaches 100% and 100%.

Phase 5 is reflecting problems and thinking processes that are carried out through the Zoom application. Teachers of students to link the questions with the phenomena given, work on questions that reflect the situation in the Student Worksheet, and continue by uploading the results of the LKPD answers through Google Classroom. With the percentage of implementation of 91% and 100%.

The closing is the last phase which is carried out by re-emphasizing important things that must be remembered and applied and ensuring that students understand the material that has been given so that the percentage of implementation is 100% and 100%.

Based on the Curriculum of 2013 is clear that the goal of learning more emphasis on the scientific approach and authentic assessment using the principle of assessment as part of learning. Besides, teachers are also required to be more creative and innovative in teaching and learning so that students can be motivated (Putri & Novita, 2016). Because of these demands, the student activity process can be used as a reference for developing skills that must be achieved by students. The assessment of students' activities is carried out during the learning process where the learning process is carried out in accordance with the guided inquiry learning syntax which is assessed through the process of students working on student worksheets. The activities of students were observed by 8 observers. Where every 1 observer observes 1 group. Observations were made every 3 minutes by observing the activities of the dominant students. The activities observed are activities that are relevant and activities that are not relevant in Figure 3.

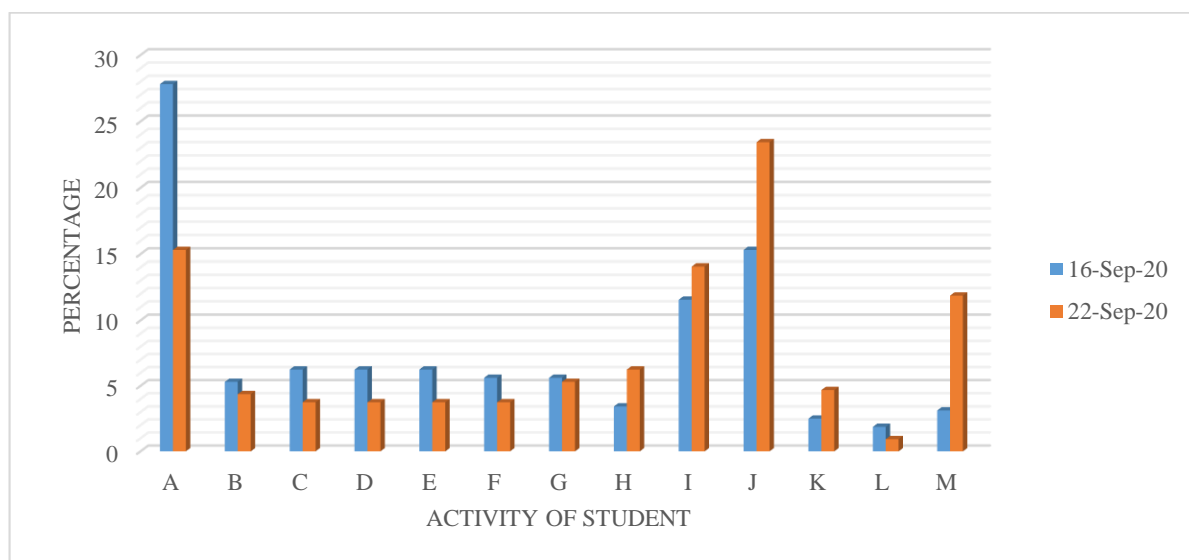


Figure 3. Student Activity Diagram

Based on the Figure 3, it shows that at the first meeting there was an increase in student activity 1 to 7 while at meeting 2 is decreased. And at the second meeting, activities 8 to 11 and 13 experienced an increase. It's just that the 12th activity has decreased. Relevant activities are shown in numbers 1 to 11 and numbers 13 while numbers 12 are irrelevant activities. The most dominant activity frequency at the first and second meetings is the activity of responding to teacher interactions and explanations, discussing to reflect on the situation by working on Student Worksheet and connecting with the phenomena that have been given, and presenting the results of the discussion. Meanwhile, the lowest activity is seen in irrelevant activities that are carried out during the learning process.

Chemistry lessons are subjects that have their characteristics so that they require skills in solving chemistry problems in the form of concepts, theories, laws, and facts. One of the objectives of learning chemistry in high school is that students can understand the concept of chemistry and its interrelation and its application both in everyday life and technology. In testing the learning outcomes of students, it is carried out in two stages, namely testing the knowledge and testing of students' creative thinking skills. This is because students must be able to understand the material first so that the process of increasing students' creative thinking skills becomes more effective.

The results of the knowledge test include the cognitive domain obtained through the pretest and posttest instrument question sheets. The pretest is used to test students' initial understanding of the material given because students have received similar material at previous meetings. Then students are given guided inquiry-based Student Worksheets for two online meetings through the Zoom application, Google Classroom, and the WA Group. At the end of the meeting, a posttest was given to determine the increase in understanding of the learning material. The pretest and posttest knowledge sheets were multiple-choice questions.

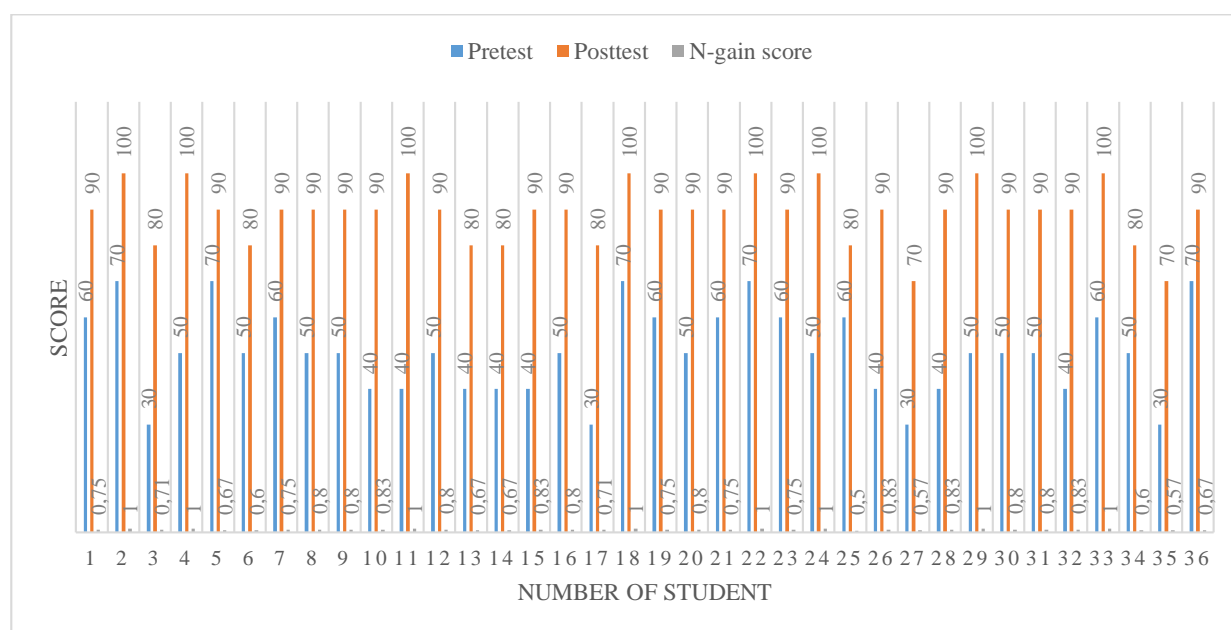


Figure 4. Percentage of Students' Knowledge Test (Pretest-Posttest)

In the Figure 4, there is an increase in knowledge seen from the increased pretest and posttest results. The mean score of the pretest and posttest results of knowledge increased in everyone. Besides, the increase can also be seen through the N-gain value. There were 9 students in the medium category and 28 students in the high category, this shows that classically the understanding of students has increased with an average N-gain score of 0.79 and is in the high category. And by using the t test, the data obtained the students who were involved in pretesting

by 67% and incomplete by 33% while in the complete posttest results of 75% were incomplete by 25%. With the completeness score $0.000 < 0.05$ and compare of t calculate and t table is $-23.150 < 2.04$. t table more high than t calculate which means there is a significant difference between the results of pretest and posttest that is experiencing an increase so that it can be said that the application of student worksheet-based guidance to improve creative thinking skills can be used to complete the learning completion of learners (Sugiyono, 2015).

The test of creative thinking skills includes the skills acquired through the pretest and posttest question sheet instruments. The pretest was carried out to measure the initial skills of students before the implementation of guided inquiry-based Student Worksheets. Then students were given treatment to improve students' creative thinking skills by being given Student Worksheet and carried out twice online through the Zoom application, Google Classroom, and WA Group. At the end of the meeting, a posttest was given to determine the increase in creative thinking skills. The pretest and posttest question sheets are in the form of descriptions of a phenomenon where students must be able to solve by relating the material to the phenomenon. Improvement of creative thinking skills is assessed based on three indicators, namely Originality, Fluency, and Flexibility.

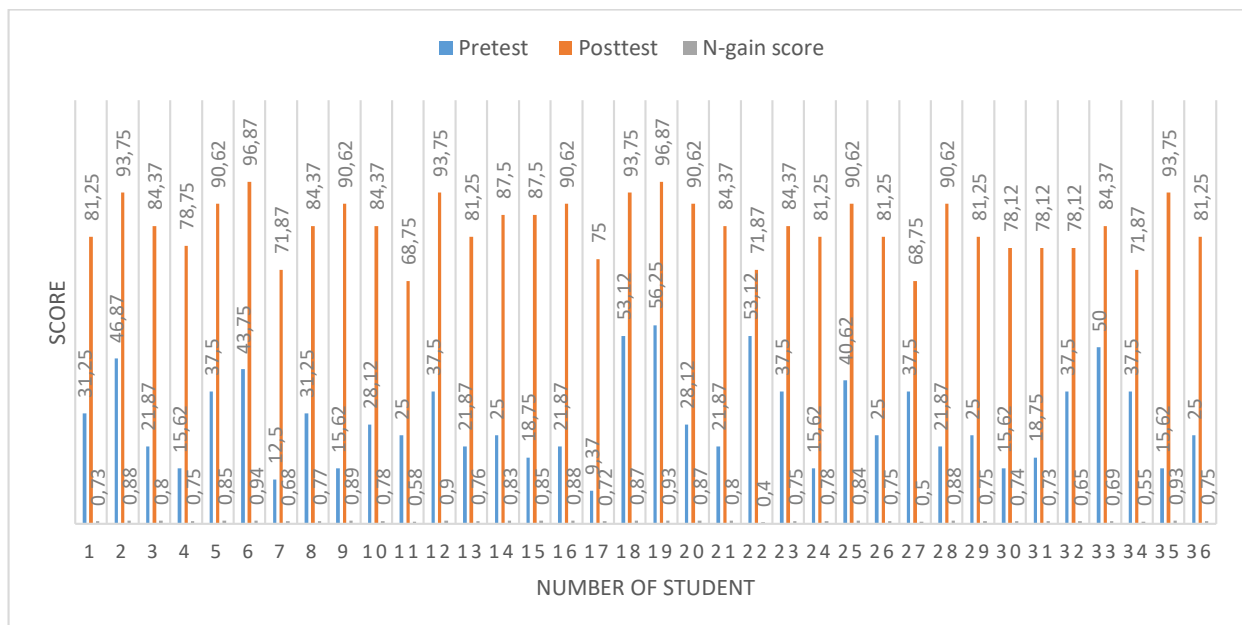


Figure 5. Percentage of Creative Thinking Skills Test (Pretest-Posttest)

Based on the data above, it shows that there is an increase in creative thinking skills before and after the implementation of the Student Worksheet. Judging from the results of the pretest and posttest which have increased. The mean pretest score increased for everyone. Besides, the increase can also be seen through the N-gain value. There were 7 students in the medium category and 29 students in the high category, this shows that classically there was an increase in students' creative thinking skills with an average N-gain score of 0.77 and the high category. The answers given by students are used as a reference for measuring the level of creative thinking skills where answers must be originality, fluency, and flexibility (Sener & Tas 2017; Türkmen & Sertkahya 2015; Wijayati et al, 2019).

Originality thinking skills in pretest and posttest questions are contained in the process of identifying problems, determining experiment variables, designing experiments, and presenting ideas. This is because students are required to be able to solve a problem by providing solutions to the problem. where the answers given by learners become the determinant of the results of originality thinking skills is supported by (Munandar, 2014). Which states that learners can reveal

new and unique things and combine them. Here are the results of the Originality thinking skills test:

Table 1. Score of Originality Thinking Skills Test

Components		Pretest (%)	Posttest (%)
1.	Identify the problem	48	77
2.	Specify experiment variables	21	72
3.	Designing experiments	5.55	74
4.	Present ideas	38	71

The Table 1 shows that classically learners have not reached the criteria of creative thinking skills at the pretest, but after the implementation of the worksheets of learners with guided unclerical learning models can improve the creative thinking skills of learners judging by the results of posttests that have improved and learners can think originality. The originality factor is one of the indicators where students can plan for something (Istiyono et al, 2018).

Flexibility thinking skills in pretest and posttest questions are contained in the process of formulating problems, analyzing data, making conclusions, and presenting ideas. This can be determined from the answers given by each learner is different because the different mindsets between each individual are supported by (Munandar, 2014). Which states that learners can see a problem from different points of view to be able to answer and produce different ideas and vary in determining problem-solving solutions. Here are the results of the flexibility thinking test:

Table 2. Score of Flexibility Thinking Test

Components		Pretest (%)	Posttest (%)
1.	Specify problem formulation	21.52	76
2.	Analyzing data	24	73
3.	Make conclusions	60.44	74.30
4.	Present ideas	38	71

The Table 2 shows that classically learners have not reached the criteria of creative thinking skills at the pretest, but after the implementation of the worksheets of learners with guided unclerical learning models can improve the creative thinking skills of learners judging by the results of posttests that have improved and learners can think flexibility. Flexibility is one aspect with lower difficulty by analyzing the given question (Asrul et al, 2018). Fluency thinking skills in pretest and posttest questions are contained in the process of determining hypotheses, analyzing data, and presenting ideas. The answers given by learners are said to be fluency when students can have a variety of ideas/ideas where each idea and idea is varied and able to give more than one answer (Munandar, 2014).

Table 3. Score Fluency Thinking Test

Components		Pretest (%)	Posttest (%)
1.	Determining hypotheses	19.44	76
2.	Analyzing data	60.41	74.30
3.	Present ideas	38	71

The Table 3 shows that classically learners have not reached the criteria of creative thinking skills at the pretest, but after the implementation of the worksheet of learners to with guided unclerical learning models can improve the creative thinking skills of learners judging by the results of posttests that have improved and learners can think fluency. Fluency is one of the lowest problem difficulties with sub indicator formulating answers (Istiyono et al, 2018).

The following is a table of the results of the N-gain value of classical creative thinking skills for each component.

Table 4. N-gain Value of Creative Thinking Skills for Each Component

Indicator of creative thinking skills	Score			
	Pretest	Posttest	N-gain	Category
1. Originality	20%	73,5%	0,7	High
2. Flexibility	36%	73%	0,6	Medium
3. Fluency	39%	74%	0,6	Medium

It shows that the average score of the components of students' creative thinking skills has increased from the pretest-posttest. Creative thinking skills for originality components are 0.7, output skills are 0.6, and fluency skills are 0.6. So that the average N-gain value is 0.6. With the classical pretest-posttest mean scores of 31.67% and 74%. The results showed that there was an increase in the creative thinking skills of students from the less creative to creative category. So, it can be said that the application of a guided inquiry-based Student Worksheet in the learning process can improve the thinking skills of students.

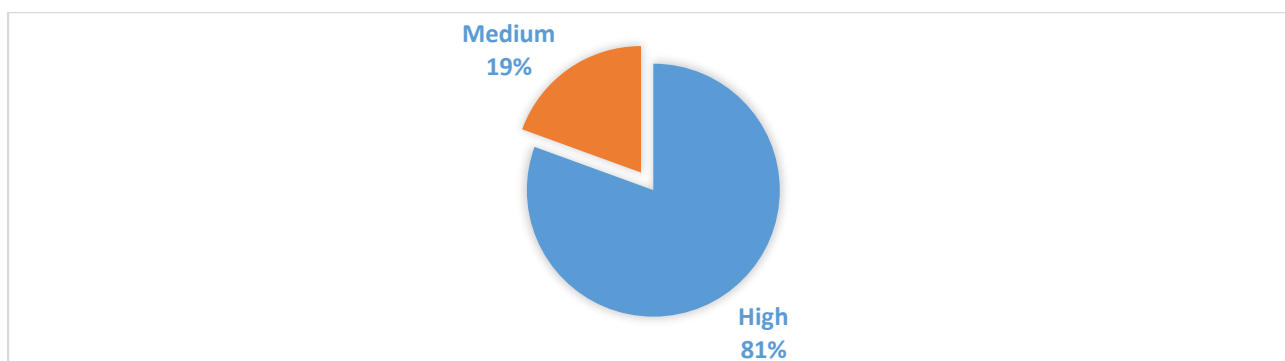


Figure 6. Score Diagram of Creative Thinking Skills Gain

The diagram above shows that the N-gain value test shows that 81% of students obtained high criteria creative thinking skills and 19% of students obtained moderate criteria creative thinking skills. This shows that with the application of guided inquiry-based Student Worksheet on the sub-material the factors that influence reaction projection are classically in the high category. And by using the t test, the data obtained the student's who completed the pretest by 42% and the incomplete by 58% while in the complete posttest results of 56% who were incomplete by 44%. The number of students who experienced completion at the time of pretest is lower than the complete thing because at the time of pretest it is done to know the initial ability of the student where the student has also got a little opening material from the teacher but the student has not been able to apply the material optimally. With the completion score $0.000 < 0.05$ and compare of t calculate and t table is $-25.10 < 2.04$. t table more high than t calculate which means there is a significant difference between the results of pretest and posttest that is experiencing an increase so that it can be said that the application of student worksheet-based inquiry guided to improve creative thinking skills can be used to complete the learning completion of (Sugiyono, 2015).

Student response questionnaires are used to determine students' responses to the application of a guided inquiry-based Student Worksheet to improve creative thinking skills on the sub-material factors that affect the rate of reaction. The questionnaire was given at the last meeting after the learning process was complete. Student response questionnaires are also used by the teacher as a reflection of the learning process being carried out. Student response can be said to be good if it reaches a percentage of $\geq 61\%$ (Riduwan, 2015). In research that has been

conducted, students give a positive response seen from the results of a questionnaire which shows the average percentage of positive responses classically is 87.3% and is in the very good category. With this, it shows that the teacher is successful in applying a guided inquiry-based Student Worksheet to improve the thinking skills of students.

CONCLUSION

The implementation of the guided inquiry learning model that has been applied for 2 meetings classically reaches 97.72% and 98.71% with very good criteria. The dominant activity of students is responding to teacher interactions and explanations, discussing to reflect on the situation by working on Student Worksheet and connecting with the phenomena that have been given, and presenting the results of the discussion. The percentage of relevant activities is higher than irrelevant activities, this shows that the application of guided inquiry-based Student Worksheet can improve creative thinking skills. Learning outcomes of creative skills in the test of knowledge and skills increase. Evidenced by the N-gain score on the classical knowledge test of 0.79 with high criteria and the classical creative thinking skills test of students with an N-gain value of 0.77 with high criteria. Student responses to the application of guided inquiry-based Student Worksheet to improve creative thinking skills received a very strong response with a percentage of 87.3% with very good criteria. This implication only use of 3 component into creative thinking and for the component fluency and flexibility still low so it's need continuous research. And this research was conducted in the pandemic online so that it can be done offline to find out the level of effectiveness of student worksheets. In addition, data collection is done in urban high schools where students' thinking patterns are open minded, advanced researchers can apply this research to students in the village area to be able to know the comparison between the two so that effectiveness can be determined.

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