



Implementation of Guided Inquiry Learning Model Based Blended Learning to Train Creative Thinking Skill of Eleventh Grade Students in the Factors that Affect of Chemical Equilibrium

Firyal Nabilah Qurrotu Aini dan *Ismono

Jurusan Kimia, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Negeri Surabaya
Jl. Ketintang, Gedung D1, Surabaya 60231, Indonesia

*Corresponding e-mail: ismono@unesa.ac.id

Received: December 09th, 2020 Accepted: December 12th, 2020 Online Published: December 12nd, 2020

Abstract: Implementation of guided inquiry learning model based blended learning to train creative thinking skill of eleventh grade students in the factors that affect of chemical equilibrium. This study aims to improve students' creative thinking skill in the factor that effect of chemical equilibrium using student learning outcomes towards the implementation of learning model as an online learning solution, to know the implementation, student activities and to know student responses toward learning model. Collect the data methods used questionnaires, observation, and test methods. The results implementation of learning gets a percentage of 90% which is categorized as very good. Student activities when given a learning model to practice creative thinking skills get 24.4% in the Fluency, 26.9% in the Flexibility and 12.7% of the student activity time was used to practice Elaboration. Student creative thinking skill uses the One-Group Pretest-Posttest Design, the results obtained by students increase from the comparison of the pretest and posttest, and the results tested in gain score with an average result is ≥ 0.7 or high category. Students give a positive response of 95.3% to the guided inquiry learning model based on blended learning on the factors that affect chemical equilibrium.

Keywords: Blended Learning, Guided Inquiry, Creative Thinking Skill, Chemical Equilibrium.

Abstrak: Penerapan Model Pembelajaran Inkuiri Terbimbing berbasis Blended Learning untuk Melatihkan Kemampuan Berpikir Kreatif Siswa Kelas XI pada Materi Faktor-Faktor yang Mempengaruhi Keseimbangan Kimia. Penelitian ini bertujuan untuk meningkatkan berpikir kreatif siswa terhadap materi keseimbangan menggunakan hasil belajar siswa terhadap penerapan model pembelajaran inkuiri terbimbing berbasis blended learning sebagai solusi pembelajaran daring, untuk mengetahui keterlaksanaan pembelajaran, aktivitas siswa dalam proses pembelajaran yang diberikan dan untuk mengetahui respon siswa terhadap pembelajaran yang dilatihkan. Metode pengumpulan data yang digunakan yaitu metode angket, observasi, dan tes. Hasil penelitian pada keterlaksanaan pembelajaran mendapatkan presentase nilai diatas 90% yang dikategorikan sangat baik. Aktivitas siswa saat diberikan pembelajaran untuk berlatih berpikir kreatif mendapatkan nilai sebesar 24,4% pada komponen Fluency, 26,9 % pada komponen Flexibility, dan 12,7 % waktu aktivitas siswa digunakan untuk berlatih Elaborasi. Kemampuan berpikir kreatif siswa menggunakan rancangan One-Group Pretest-Posttest Design, hasil yang diperoleh siswa meningkat dari perbandingan hasil pretes dengan postes, analisis hasil pretes dan postes siswa diuji n-gain dengan hasil rata-rata $\geq 0,7$ atau katategori tinggi. Siswa memberikan respon positif sebesar 95,3 % terhadap model pembelajaran Inkuiri berbasis blended learning pada materi faktor-faktor yang mempengaruhi keseimbangan kimia,

Citation This Article:

Firman Nabilah Qurrotu Aini dan Ismono. 2020. *Implementation of Guided Inquiry Learning Model Based Blended Learning to Train Creative Thinking Skill of Elevent Grade Students in the factors that Affect of Chemical Equilibrium*, Vol 9 (3), 67-78. Doi :10.23960/jpk.v9.i3.202007

• **INTRODUCTION**

Education uses the curriculum 2013 which requires students to take an active role in the learning process or called the student center, while the teacher is a facilitator so the students can actively explore new knowledge. Era globalization requires to improve student's skills, especially in the 21st century to realize the field of technology to take the lessons that have creative thinking skills. This potential is certainly very beneficial in the competition of the 21st century (Cucinotta & Vanelli, 2020). Therefore, Guided Inquiry learning combined with Blended Learning, which is a combination of face-to-face learning with online learning because in the 21st century students are required to realize the field of technology. Blended learning is very useful because it is innovative, produces active learning, more personal, student centered learning, students can more attractive, and can improve student achievement (Sahni, 2019).

The 21st century competency shows that students must have learning and innovation skills (critical and creative) to achieve global prowess in the way of thinking, realize of technology, and as global citizens are needed the education that requires learning to find out the potential of students (Imawanty & Fransiska, 2019; Ramdhani, 2017; Sudarsana, 2016). The ability to think creatively is one of the goals that must be achieved in learning at school. Chemistry learning is one of the processes of learning that requires the ability to think creatively (Nahadi et al., 2015). Creative thinking skills have four components, including: (1) fluency, is ability to provide many ideas; (2) Flexibility, is ability to provide various kinds of problem solving; (3) Originality, is ability to provide original ideas, which are rarely expressed by most people; (4) Elaboration, is the ability to detail the answer (Filsaime, 2008). However, this study used three components based on the results of pre-research students of MAN 2 Banyuwangi in class XII MIPA 1 because students realize the ability of the originality component as much as 62.5% of students, while the fluency component is 68.8%, flexibility is 56.3%, elaboration is 62.5% of students who still do not understand these components so need to be trained in the three components, this research based on Kristiani (2017) which trains the three components of creative thinking skill.

The results of this pre-research by interviews with the teacher that the learning was still centered on the teacher. The results of pre-research that had been carried out at MAN 2 Genteng Banyuwangi in class XII MIPA 1 as much as 87.5% of students stated that chemistry subjects not easy to understand. This is because many new vocabulary words are difficult to remember and understand, and there is a lot of formula use answer the questions so that students more often rote by the formula than understand them. The results of the observation show that chemistry learning based on teacher and students tend to be passive so that students looking for only one correct answer to the questions, especially on chemical equilibrium material. Chemical equilibrium is abstract material characteristics and it is included in the submicroscopic level. Chemical equilibrium material is closely related to everyday life. The chemistry learning process needs to be

trained creative thinking skills to solve the problems, so the students can solve the problems in everyday life creatively according to their skill.

Chemistry learning aims to train about the way of thinking to conclude, for example through investigation, exploration, experimentation, show the similarities and differences, consistency and inconsistency. Students complain that the learning problem requires the concept only so students remember the material by rote learning only. If students do exercise questions just looking for one correct answer result, it makes students not being trained to find the various possible solution to the problem. The students feel bored with the learning model in the class so students choose to be passive and simply accept a solution to the problem without processing, analyzing, evaluating, and creating their own solutions. These results caused the creative thinking skills of students is low. (Aftriani, 2018).

One of the lessons that can help students increase their creative thinking skills is guided inquiry learning based on blended learning. The results of some relevant research about the implementation of the guided inquiry learning model by Sukimarwati (2013) concluded that the use of Guided Inquiry learning has a significant effect on student achievement, creativity, and motivation to learn cognitive, affective, and psychomotor. Blended learning combined with the inquiry learning model can help students achieve in the 21st century (Suana et al, 2017) so can improve student achievement. Sousa (2015) and Deriina (2015) state that inquiry learning can increase student's opportunities to increase their analytical skills and thinking skills. Creative thinking skills can improved (Cremin et al, 2015; Liu et al., 2015; Thompson, 2017) by the implementation of inquiry learning , and also improved the student achievement (Jiang & McComas, 2015)

The characteristic of chemistry subjects very suitable to use the inquiry model, which is to teach students to find out the concept by themselves so that it becomes meaningful learning. Learning by doing find concept itself can train students to solve the problems with their creative thinking skills. (Sulastri et al, 2019). Based on this description, It's hoped that the Guided Inquiry learning model based on blended learning on chemical equilibrium material can train students to increase creative thinking skills so that students can be trained to build their own knowledge to find the concept of chemical equilibrium through scientific methods and it is hoped that students can solve problems in everyday life creatively. Therefore, it is necessary research "Implementation of Guided Inquiry Learning Model Based on Blended Learning to Train Creative Thinking Skill ff Eleventh Grade Students in the Factors that Affect of Chemical Equilibrium".

▪ **METHOD**

This research uses descriptive quantitative research by describing a variable systematically, facts, and accurately (Sugiyono, 2011). The target of the research to be carried out by students of class XI MIPA in MAN 2 Banyuwangi. Techniques to collect data using observation methods, test methods and questionnaire methods.

The implementation of the guided inquiry learning model and student activities was measured with an observation sheet of inquiry learning implementation and student activities. Data from the observation sheet obtained were converted to the criteria refers in Table 1.

Table 1. Student Activity Criteria

Percentage Range	Criteria
0% - 20%	Very Less
21% - 40%	Less
41% - 60%	Enough
61% - 80%	Good
81% - 100%	Very Good

(Riduwan, 2015)

This research states that student activity can be considered as a good criteria if the percentage of relevant activities reaches $\geq 61\%$.

Creative thinking skills use the One group pretest-posttest design for the test method. One Group Pretest-Posttest use to measure the learning outcomes of creative thinking skills with a guided inquiry model

O1	X	O2
----	---	----

Information :

O1 = first test (test without the implementation of Guided Inquiry learning model)

X = treatment (treated by the implementation of Guided Inquiry learning model)

O2 = final test (test after give the treated with the implementation of Guided Inquiry learning model)

Analysis = calculating significance (O2 - O1)

Researchers identify the first conditions in a group of samples by doing a pretest (first test). Then do the treatment. At the end of the activity, the condition was measured by posttest (final test). The pretest results obtained will be compared with the posttest results. Then the results of the pretest and posttest have analyzed the increase of student learning outcomes use the calculation of the gain index value. This gain index calculation aims to know the increase in the learning outcomes of students. The formula for determining the gain index value is:

Table 2. Criteria for Gain value

Value Range	Category
$G \geq 0,7$	High
$0,3 \leq G < 0,7$	Medium
$G < 0,3$	Low

Students have an increase value of $0.3 < \text{Gain Score} < 0.7$ which is included in the medium criteria and when the gain value > 0.7 is included in the high criteria (Meltzer, 2002)

The questionnaire sheet use to analyze the results of the student responsible for the learning model. The results of the response were analyzed use the criteria from the Guttman scale. The completed questionnaires are calculated based on the criteria in Table 3.

Table 3. Criteria of Guttman Scale Assessment

Question	Answer	Value / score
Response	Yes	1
	No	0

(Riduwan, 2015)

The results of the response from students get positive results if the percentage obtained is $\geq 61\%$ (Riduwan, 2015).

• **RESULT AND DISCUSSION**

The results of the research and discussion obtained from research on the implementation of the guided inquiry learning model based on blended learning will be described as follows:

Implementation of Guided Inquiry Learning

The implementation of inquiry learning is carried out to determine the learning process by the teacher use the syntax of the guided inquiry learning model based on blended learning and to show that the teacher has trained creative thinking skills in learning. In the process of learning based on blended learning, there are three stages, namely pre-face-to-face, face to face, and post face to face. In the online pre-face-to-face, students are required to analyze phenomena through a video or image, formulate problems, make hypotheses and collect the data. When face-to-face sessions, students analyze data and make conclusions, and present the results that have been formulated of the problem to determine the correct concept. In the final stage, namely post face-to-face, students carried out closing learning activities by providing feedback, connecting the results of the data obtained with the concept. In the process of learning using Whatsapp Group and Google Meet to integrate various online technologies and teaching strategies into the classroom. It makes students more flexible time, a wider and more effective educational experience than face-to-face learning, and have an affects on better learning outcomes. (Tham, 2011).

During process learning activity, three observers were observed by filling out the observation sheet on the implementation of guided inquiry learning based on blended learning so that the following data were obtained:

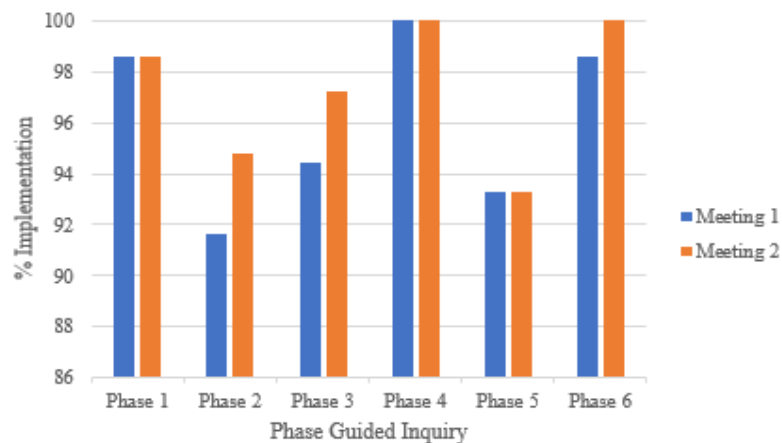


Figure 1. The implementation of guided inquiry learning model

Implementation of guided inquiry learning is carried out for two meetings, each meeting there are six phases of guided inquiry learning based on blended learning. Learning is carried out according to the syntax of guided inquiry, phase 1 gain attention and explain the inquiry learning, phase 2 present the inquiry problem or discrepant event, phase 3 has student formulate hypotheses to explain the problem or event, phase 4 is to encourage students to collect data to test the hypothesis, phase 5 is organizing and formulating explanations and/or conclusions, phase 6 is reflect on the problem situations and thinking processes use inquire into it (Arends, 2013)

Blended learning has three stages, namely the pre-face-to-face stage which is carried out in phase one to phase four, the face-to-face stage is carried out in phase five, and post-face-to-face stage is carried out in phase six. The percentage of learning model implementation is classified as a good criteria if it is $\geq 61\%$ (Riduwan, 2015). Implementation of the learning model can be said that implemented if the teacher's ability to manage the learning is good and very good criteria. Based on Figure 1, the data obtained show that the implementation of learning scores from phase one until phase six is more than 90% so it's mean that very good criteria for providing a guided inquiry learning model based on blended learning.

Student Activity

Student activity can be identified through the analysis of the activity observation sheet by three observers every three minutes of students activities. The purpose of the observation student activities has an important role because it can determine the process when creative thinking skills are trained to show the student activities related with students creative thinking skills during learning when trained guided inquiry learning model based on blended learning.

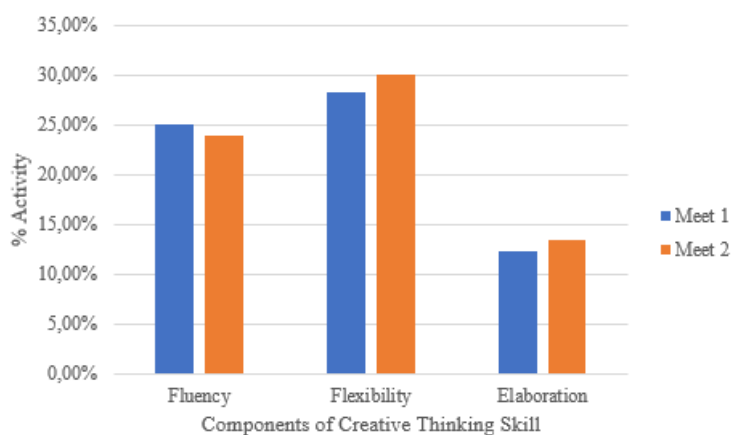


Figure 2. Percentage of student activities with creative thinking skill

Based on Figure 2 it can show that creative thinking skills have been implemented during learning. Then the results obtained from the activity in each component of creative thinking skills are 24.4% of student activity time used to practice Fluency, 26.9% of student activity time used to practice Flexibility, and 12.7% of student activity time used to practice Elaboration.

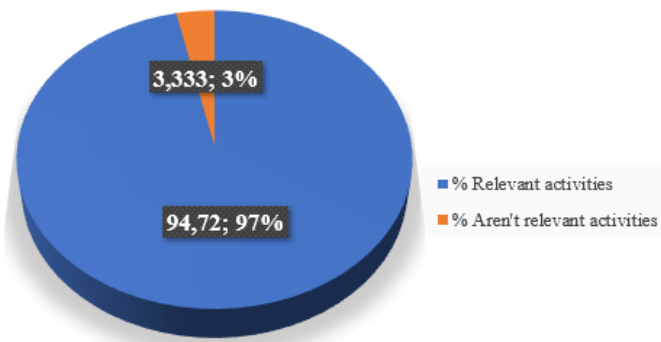


Figure 3. Student Activity

Student activity can be classified as a good criteria if the percentage of relevant activities reaches $\geq 61\%$ (Riduwan, 2015). The percentage of student activity can be classified as relevant learning when greater than irrelevant student activity which means that learning is carried out well and fluent learning. It can be seen from the observation that students activities when given blended learning can follow the learning so it means that students be able to changes in the digital era according to requirements in the 21st century. This is following the theory stated by Sahni (2019) that Blended learning is very useful because innovative, produce active learning, more personal learning, student centered and more attractive to students, and can improve student achievement. Increasing student activeness in the learning process using inquiry learning model improves students' critical and creative thinking skills (Susetyarini & Miharja, 2017). Therefore, blended learning is very suitable to improve students creative thinking skills with the guided inquiry learning model because the learning must student centered and has the skill to find concepts independently.

Creative Thinking Skill

Creative thinking skill students are tested using test sheets. The test of learning outcomes for creative thinking skills aims to measure the improvement of students creative thinking skills after being treated in learning. This test consists of a pretest given at the beginning of the lesson and posttest questions given at the end of the lesson. So it can be seen the pretest and posttest scores to be compared and analyzed with the gain interval from the test results. Assessment is measured based on aspects of students creative thinking, namely: fluency, flexibility, and elaboration. The assessment results of the students creative thinking skill are shown in Table 4.

Table 4. Creative Thinking Skill of Pretest Results

Total of students	Criteria
1	Quite creative
32	Less Creative

Based on Table 4 it can be interpreted that students need to be given learning to improve their creative thinking skills to adapt with 2013 curriculum learning and adapt learning skill to the 21st century that students are required to think creatively. The criteria for student creative thinking skill were obtained based on Table 5.

Table 5. Assessment Criteria of Creative Thinking Test Results

Range of value	Criteria
0% - 20%	Not Creative
21% – 40%	Less Creative
41% – 60%	Quite creative
61% – 80%	Creative
81% - 100%	Very Creative

(Riduwan, 2015)

Based on the table above, it can be concluded that students classified to be creative if the value is $\geq 61\%$. The treatment learning to improve creative thinking skills by giving Student Worksheets that have been adapted to the guided inquiry syntax and creative thinking skill components so that students can answers to a problem in divergent or exploring various possible answers to a problem. After being give treatment, the students doing the postest sheet to determine the increase in creative thinking skill.

Table 6. Posttest Results of Creative Thinking Skill

Total of students	Criteria
12	Creative
21	Very Creative

Based on Table 6, the post-test results of students creative thinking skill after given inquiry learning model based on blended learning can increase when compared to the results of the pretest scores. A total of 12 students were categorized in creative criteria and 21 students were categorized as very creative. Therefore, there is an increase in the creative thinking skill of all students in class XI MIPA 1. The characteristics of creative students are they hold fast to their stance and beliefs as well as dare to express them, high curiosity, independence in thinking, and giving consideration (Munandar, 2014). Then an analysis of the calculation of the gain index value is carried out which aims to determine the increase in the learning outcomes of students.

Table 7. Gain Value Results

No	Name	Pretest Score	Posttest Score	Gain score	Criteria
1	AKF	16	76	0,7	High
2	ATS	16	92	0,9	High
3	AS	16	72	0,6	Medium
4	ARI	20	92	0,9	High
5	APB	16	72	0,6	Medium
6	ADM	20	88	0,85	High
7	AL	20	88	0,85	High
8	ANN	16	72	0,6	Medium
9	CAD	16	76	0,7	High
10	CK	24	76	0,6	Medium
11	DAM	16	88	0,8	High
12	DBF	16	84	0,8	High
13	FYN	20	76	0,7	High
14	FHAF	24	92	0,8	High
15	FAM	24	96	0,9	High
16	IRM	36	92	0,8	High
17	IR	24	96	0,9	High
18	JM	36	92	0,8	High
19	LDR	24	84	0,7	High
20	LA	20	76	0,7	High
21	MAFF	20	80	0,7	High
22	MH	24	96	0,9	High
23	MUN	12	76	0,7	High
24	MDA	28	88	0,8	High
25	MWNM	40	92	0,8	High
26	NPZ	32	96	0,9	High
27	NFA	24	96	0,9	High
28	NFN	16	84	0,8	High
29	RWN	24	96	0,9	High
30	RR	16	88	0,8	High
31	RN	20	88	0,8	High
32	SDP	32	72	0,5	Medium
33	VDK	20	76	0,7	High

Based on Table 7, it can be compared between the results of the pretest and posttest, the students test result can show that increase in learning outcomes, then an analysis of the calculation gain index value is carried out and the category results of the gain value are obtained in Table 8.

Table 8. Categories of Gain Score Results

Total of students	Categories
5	Medium
28	High

Based on Table 8, the increase of creative thinking skill is classified as a good criteria because it has a gain value with a high category or gets a value range of ≥ 0.7 . The results of the data obtained same with the statement of Wibowo (2015) that guided inquiry learning tools can improve creative thinking skills and work creatively with others. Smallhorn (2015), Sousa (2015) and Deriina (2015) also state that inquiry learning can increase students opportunities to engage in inquiry activities, develop analytical skills and thinking skills.

Student Response

The improvement of students creative thinking skills is very related and directly proportional to the student response to the learning process that has been carried out. Student responses can be seen from the response questionnaire sheets to the learning responses that have been given. A total of 33 students or obtained a percentage of 100% agreed that the learning provided was very fun, 100% of students agreed that learning could train to make problem formulations, observe the experiments for 94% of students, determine experimental variables 91% of students, make observation tables of 94% of students who agree, learning can train to analyze the results of the experimentation based on student responses by 100%, implementation learning can also make hypotheses 82% and make a conclusion 97% of the results by student responses, and students agree that learning can improve understanding of equilibrium material. The average student response results from all questions on the response questionnaire sheet obtained 95.3% of students responded positively with strong criteria (Riduwan, 2015). The results of the response state that students are happy with the given learning model and students can understand the material of chemical equilibrium.

CONCLUSION

The results of data analysis and discussion in this research conducted on class XI MIPA 1 students at MAN 2 Banyuwangi can show that the implementation of learning is carried out very well according to the inquiry syntax. Students carry out relevant activities during learning by showing an active attitude in learning and follow well when improving creative thinking skills, namely Fluency, Flexibility, and Elaboration. Students' creative thinking skills increased from the comparison of the pretest and posttest results, the analysis of the results of the pretest and posttest students was tested for gain score with an average result of ≥ 0.7 classified as a high category. Students give a positive response, which means that students are happy and agree with the guided inquiry learning model based on blended learning that can improve their creative thinking skills to understand the material factors that affect chemical equilibrium.

REFERENCES

- Aftriani, dkk. (2018). Pengaruh Pembelajaran Inkuiri Terbimbing Pada Pelajaran Kimia Terhadap Kemampuan Berpikir Kreatif Siswa Kelas XI IPA SMAN 2 Mataram. *Chemistry Education Practice*, 1 (2), 2018 – 2.
- Arends. R.I. (2013). *Learning to Teach 9th ed.* New York: Mc Graw Hill.
- Cremin, T., Glauert, E., Craft, A., Compton, A., & Styliandou, F. (2015). Creative little scientists: Exploring pedagogical synergies between inquiry-based and creative approaches in Early Years science. *Education 3-13: International Journal of Primary, Elementary and Early Years Education*, 43(4), 404–419.

- Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta Bio-Medica: Atenei Parmensis*, 91(1), 157–160.
- Deriina. (2015). *Implementation of Inquiry Training Model In Learning Physics to Improve Student Formal Thinking Ability*. Jurnal Pendidikan Fisika Indonesia Vol. 2.
- Filsaime, Dennis K. (2008). *Menguak Rahasia Berifkir Kritis dan Kreatif*. Jakarta: PT. Prestasi Pustakarya.
- Imawanty, I., & Fransiska, A. B. (2019). *Guru Bimbingan dan Konseling Berkualitas di Era Revolusi 4.0: Pembelajar, Kompeten, dan up to Date*. Prosiding Seminar Nasional Pendidikan FKIP, 2, 147–153.
- Jiang, F., & McComas, W. F. (2015). The effects of inquiry teaching on student science achievement and attitudes: evidence from propensity score analysis of PISA data. *International Journal of Science Education*, 37(3), 554–576.
- Kristiani. (2017). *Penerapan Model Pembelajaran Inkuiri Terbimbing Pada Materi Kesetimbangan Kimia Untuk Melatihkan Keterampilan Berpikir Kreatif Siswa Kelas XI SMA Negeri 12 Surabaya*. UNESA Journal of Chemical Education. Vol. 6, No.2 pp. 202-207. ISSN: 2252-9454.
- Liu, Z. K., He, J., & Li, B. (2015). Critical and creative thinking as learning processes at top-ranking Chinese middle schools: possibilities and required improvements. *High Ability Studies*. 26(1), 139–152.
- Meltzer, David E. (2002). “*The Relationship Between Mathematics Preparation and Conceptual Learning Gains in Physics: A Possible “Hidden Variable” in Diagnostic Pretest Score*”. *Am. J. Phys.* 70. 1259-12269.
- Munandar, Utami. (2014). *Pengembangan Kreativitas Anak Berbakat*. Jakarta: PT Rineka Cipta.
- Nahadi, Siswaningsih, W & Maliga, I. (2015). Pengembangan dan Analisis Tes Kimia Berbasis Open-Ended Problem untuk Mengukur Kemampuan Berpikir Kreatif Siswa. *Seminar Nasional Kimia dan Pendidikan Kimia VII*.
- Ramdhani, M. A. (2017). *Lingkungan Pendidikan dalam Implementasi Pendidikan Karakter*. Jurnal Pendidikan UNIGA, 8(1), 28–37.
- Riduwan. (2015). *Skala Pengukuran Variabel-Variabel Penelitian*. Bandung: Alfabeta.
- Sahni, J. (2019). *Does Blended Learning Enhance Student Engagement? Evidence from Higher Education*. *Journal of E-Learning and Higher Education*, 2019, 1–14.
- Smalhorn, M., Young, J., (2015). *Inquiry-Based Learning to Improve Student Engagement in Large First Year Topic*. Journal Student Success Vol 6.
- Sousa. C., (2016). *Inquiry Learning for Gender Equity Using History of Science in Life and Earth Sciences Learning Environment*. Journal for Education, Social and Technological Science Vol. 3.
- Suana, dkk. (2017). *Pengembangan Perangkat Blended Learning Berbasis Learning Management System (Lms) Dengan Model Pembelajaran Inkuiri Pada Materi Listrik Statis*. Prosiding Seminar Nasional Pendidikan FKIP UNTIRTA. ISBN 978-602-19411-2-6.
- Sudarsana, I. K. (2016). *Peningkatan Mutu Pendidikan Luar Sekolah dalam Upaya Pembangunan Sumber Daya Manusia*. Jurnal Penjaminan Mutu, 1(1), 1–14.
- Sugiyono. (2011). *Metode Penelitian Kuantitatif, Kualitatif dan R & D*. Bandung: Alfabeta.

- Sukimarwati, J. (2013). *Pembelajaran Biologi Dengan Guided Inquiry Model Menggunakan Lks Terbimbing Dan Lks Bebas Termodifikasi Ditinjau Dari Kreativitas Dan Motivasi Berprestasi Siswa*. *Jurnal Inkuiri*, 2(2): 154-162.
- Sulastri. (2019). *Pengaruh Penerapan Model Pembelajaran Inkuiri Terbimbing (Guided Inquiry) Berbantuan Lembar Kerja Siswa Terhadap Kemampuan Berpikir Kreatif Siswa Pada Materi Koloid*. ISSN : 2549-1679.
- Susetyarini, E., & Miharja, F. J. (2017). The implementantion of lesson study-learning community for prospective biology teachers. *International Journal of Advanced Research (IJAR)*, 5(10), 1228–1235.
- Tham, K. (2011). *Blended Learning-A Focus Study on Asia*. *International Journal of Computer Science Issues*, Vol. 8 No. 2: 136–142.
- Thompson, T. (2017). Teaching creativity through inquiry science. *Gifted Child Today*, 40(1), 29–42
- Wibowo dan Laksono. (2015). *Pengembangan dan Implementasi Perangkat Pembelajaran IPA Berbasis Inkuiri Terbimbing*. *Jurnal Inovasi Pendidikan IPA* Volume 1 Nomor 2