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Research paper



The Effect of Inquiry-Based Independent Worksheet Using ICT Towards Science Learning to Embody the Student's Creativity and Characters

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Abstract

This research aimed to find the effect of inquiry-based independent worksheet toward the junior high school students' creativity, characters and concept understanding. Quasi-Experimental with a nonequivalent control group design was applied for this research. Creativity and characters data were obtained by using observation method while the concept knowledge was achieved by using test method. The result showed that the concept knowledge, creativity and character level of experiment class were higher than control class, which had confirmed through the t-test. The result of moment product correlation analysis showed that ICT gave the effect of 39.08% towards creativity level, 49.66% towards character level and 28.26% towards concept understanding in experiment class. The result showed that inquiry-based independent worksheet in science learning gave the influence towards concept understanding, creativity and character level of junior high school students. There are no reports on the advantages of an independent assignment sheet, inquiry-based learning and the use of ICT which come from different and separate researchers. Researchers had previously researched the application of science learning software development with inquiry-based cultural deviance solution to develop the character and creativity of learners.

Keywords: *inquiry; worksheet; creativity; character; concept understanding.*

1. Introduction

In Indonesia, the deterioration of students' behavior is a form cultural deviance which results from the forsaking of the value of Pancasila [the philosophical foundation of the Indonesian state] as the nation's cultural roots. This phenomenon can occur as a result of the reformation process in Indonesia, the influence of globalization, and the application of the principle of democracy is misguided because it has not been or is not strong confidence in the identity or the cultural identity of the nation [1]. To face this reality, teachers and lecturers must integrate the moral and character principles to the cognitive knowledge. It is important to build the proper moral and good character of learners so that they can have good values in public life.

A character can be described as a respond to circumstances in a morally good way [2]. According to the Indonesian Elementary Education Directorate character shows someone's behavior that acts based on values according to religious norms, legal/constitutional, cultural, customs, and aesthetics [3]. To have a good character in all aspects of life, the character education must be initiated with the characteristics of good habits and values of goodness [4]. To develop a good character on someone, it must be embodied and should be trained as early as possible in the stage of life [5].

In last recent years, the public's attention to weak character is marked by the increasing of anti-social behavior such as violence and criminal activity [6]. The moral education should ideally able to face the problems of this character education [7]. A displacement indicates some low moral and bad character in values of people, teenage pregnancies, violence among students, free sex lifestyle, and pornography and drug addiction, plagiarism, and corruption [8]. These phenomena are not only reached the low-society people but also increased to the high-society people such as community and nation leaders, scholars, educators, and political elite [9].

According to Curriculum of 2013, Science Learning implements the scientific approach; thus, it is expected that the learning could be based on inquiry. This learning model is supposed to be able to boost the creativity and strengthen the character of students. Creativity can be infused through technology-based learning or ICT so that the students can solve their problems quickly. Character installment can minimize the occurrence of culture deviation through the noble values of Pancasila, which are inserted during the learning activities. The emphasis of students' characters and creativities can be done through providing independent works which are based on inquiries by using ICT.

According to the observation result in junior high school, the content of opinion from the students tends not to be diverse and renewed; therefore, the students' creativity still is needed to be optimized. Some students do not pay attention to the teacher, some of them do not give opinions, and some others can not answer the questions provided by the teacher. This matter shows that the low characters of students promote the low students' ability to make the creativities in answering the questions. This matter can make the concept understanding of students can be less maximum. The use of inquiry-based independent worksheet by using ICT in the

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form of learning website s-cds.net is expected to be able to solve that problem.

According to Kuntomo [10] the independent task is the students' activities which need to be done with full responsibility by the students to develop creativities and to increase the study achievement. The implementation of the independent task is by inquiry. According to Massialas, as quoted by Matthew [11], the inquiry method is a teaching method which allows students to be able to identify problems, to define hypothesis, to formulate problems, to collect data, to verify the result and to draw the conclusion. That opinion is confirmed by the research result done by Putri [12] which stated that inquiry method is also effective in increasing the learning effect and activities of students. The learning is also equipped with the use of ICT in the form of learning website. According to Asabere [13], ICT is a set of tools, facilities, process and equipment which are required in the environment through infrastructure and physical service for transmission, process, information storage, and distribution to become the voice, texts, data, graphics, and videos. It can be concluded that Inquiry-based independent worksheet by using ICT could be utilized as a media to infuse creativity and character of students. Hartanto [14] defined creativity as a process of thinking, which is a process of thinking various ideas to solve problems.

Inquiry-based independent tasks given to the students by using Information and Communication Technology [ICT] will make students more motivated to learn. Inquiry method can increase the activity of learners in the learning activity because it involves all the ability of students to locate and investigate the new knowledge [15]. The reason for using ICT in an independent assignment given to students for ICT has been recommended for the conceptualization of the material [16]. ICT can facilitate learners in the acquisition of basic skills, the repetition of the learning process and can reinforce understanding of the concept. According to Tinio as cited by Akhlis [16], the learning process which used ICT was also proven to increase the creativity of learners.

There are no reports on the advantages of an independent assignment sheet, inquiry-based learning and the use of ICT which come from different and separate researchers. Akhlis [16] had previously researched the application of science learning software development with inquiry-based cultural deviance solution to develop the character and creativity of learners. Research in its first year had successfully developed a learning tool sheet of inquiry-based independent tasks using ICT. The product of this research was needed to be implemented to determine the impact on the level of creativity and the character of students.

The aim of this study was to find the effect of inquiry-based independent worksheet toward the junior high school students' creativity, characters, and concept understanding. This research will seek answers to the following questions:

1. How does the self-inquiry-based assignment sheet using ICT affect the creativity of learners?
2. How does the self-inquiry-based assignment sheet using ICT affect the character of learners?
3. How does the self-inquiry-based assignment sheet using ICT affect the students' understanding of the concept?

2. Literature Review

2.1. Self-Task Sheet

Self-employment is a student activity that must be done outside the lesson, set in the structure of the lesson and must be done with full responsibility by the learners. The most important goal in the provision of independent tasks is the achievement of learning objectives so that teachers have a policy in determining the task to be given. The delivery of separate duties has a particular purpose that is: [1] to improve the learning achievement of learners; [2] to stimulate the spirit and motivation students to learn more intensively; and [3] to foster creativity of learners because they directly experience and feel what Which they are working on [10].

The independent tasks given to the students according to Kuntomo [10] have several advantages, namely: [1] learners will be easier to remember the knowledge gained from the self-learning [independent], [2] the students' memory of learning will take place Longer, [3] learners have the opportunity to foster development and courage in taking the initiative, responsible and stand-alone.

The independent tasks used in this study are sheet-shaped to be called self-sustaining worksheets [LTM]. This LTM has been developed by Akhlis [16] and declared valid by the validator without any improvement so it can be used. Akhlis [16] also lays out the notion of LTM as a guide for activities given to learners as a companion in utilizing learning website. Characteristics possessed by LTM used are having assessment guidelines, answer sheets and grids regarding conformity with learning objectives, completeness of questions and guidance. The instructions contained in LTM make it possible to assess the level of creativity of learners based on aspects of fluency, flexibility, and novelty. Inquiry-based learning activities applied during the use of LTM is also possible to assess the character of students based on the noble values of Pancasila. This factor makes LTM developed by Akhlis [16] also can be used to strengthen learners' understanding and to know the level of creativity and character of students.

2.2. Inquiry-Based Learning

The inquiry comes from English 'inquiry' which means investigation. According to Massialas, as quoted by Matthew [11], the method of inquiry is defined as a teaching method that enables learners to identify problems, define hypotheses, formulate problems, collect data, verify results, and draw conclusions. Inquiry-based learning exposes students to actual experiences so that students learn actively, where they are encouraged to take the initiative to make decisions, solve problems and develop research skills and train students to be lifelong learners. According to Alberta, as quoted by Sofiani [17], the inquiry learning model can develop student professionals, improve strategies and skills in learning and incorporate new information and curricula. According to Sudrajat, as quoted by Putri [12], inquiry learning is an activity that involves maximally all students' ability to search and investigate something systematically, critically, logically, analytically so that they can formulate their own His invention with confidence. Inquiry learning can also train students to find problems, collect, organize data, and solve problems based on the instructions given by teachers so that students find the concepts expected [18].

According to Sanjaya, as cited by Sofiani [17], the main characteristics of the inquiry learning model are [1] inquiry emphasizing the activities of learners as the subject of education. Learners not only act as the recipients of the lesson through verbal teacher explanations, but they play a role in finding the essence of the subject matter. [2] All activities are undertaken by learners directed to seek and find their answer from something in question, so hopefully can grow self-confidence [self-belief] in student self. Inquiry learning model puts the teacher not as a source of learning, but as a facilitator and motivator learners learn. [3] The purpose of using the inquiry learning model is to develop a precise, critical and logical skill of thinking or improve intellectual ability as a part of mental processes. The task of learners in the inquiry model of learning is not only required to master the subject matter but the way they can use their potential.

Guided inquiry-based learning has several advantages, including:

(1) According to Joyce & Weil, as quoted by Juliantine [19]. Guided inquiry-based learning has an instructional effect and the impact of the component, which raises the creative spirit of the learner.

(2) According to Bilgin, as quoted by Praptiwi [15] inquiry-based learning has a positive effect on academic success and develop process skills and scholarly attitude of learners.

(3) According to Andriani, as quoted by Praptiwi [15], inquiry-based learning enhances the enthusiasm of learners in carry-

ing out learning activities, and learners become the focus in the implementation of learning.

2.3. ICT [Information and Communication Technology]-Based Technology

According to Asabere [13], the notion of ICT is a set of tools, facilities, processes, and equipment needed in the environment through physical infrastructure and services for the transmission, processing, storage and dissemination of information into voice, text, data, graphics and video. The use of ICT in education is focused on the process of applying the equipment using principles, methods and appropriate techniques in teaching and learning [20].

The function of the use of ICT in science learning according to Mosvold, as quoted by Akhlis [16] are [1] visual tools that enable science to be explored in the standard room; [2] to provide variation during learning so that attention is not only to teachers, [3] representational, new infrastructure for science [changing what can be learned and for whom], [4] connectivity or opening new opportunities on sharing of construction knowledge, [5] facilitating solving and troubleshooting, and [6] helping teachers More exploring the environment.

According to Tinio, as quoted by Akhlis [16] the use of ICT in science learning can improve the quality of education in various ways, including:

[1]Increasing motivation of learners.

The use of ICT to provide content that is challenging and authentic that will involve learners in the learning process.

[2] Facilitating the acquisition of basic skills.

Learners will be easier to repeat the learning process because it can be done anytime and anywhere to understand the concept of learners more strengthened.

[3] Improve teacher training.

The use of ICT can make teachers more skilled in the mastery of teaching materials.

According to Alessi & Trollip, as quoted by Puteh [20], learning using ICT has many advantages such as learners can get learning materials wherever and whenever they are, learning materials can be integrated with additional resources in the world. Every learning material becomes accessible, as well as various communication media can be provided for the usefulness of learners and teachers. Another advantage of using technology in the learning process is to simplify and accelerate the work of students [efficient], fun because students interact with colors, pictures, sound, video, and something instant and able to evoke positive emotions in the learning process [21].

ICT utilization can be obtained through web-based learning. According to Rusman [22], web-based learning is one application of electronic learning [e-learning]. According to Siahaan, as quoted by Sutanta [23], the function of electronic learning is:

(1) Supplements [Supplementary]
This feature is optional, meaning it can be used or not, but learners will get additional knowledge when utilizing electronic learning materials.

(2) Complement [Complimentary]
Electronic learning materials used to supplement the learning materials and enrichment materials so that the mastery of the learning materials will be stronger.

(3) Substitution [Substitute]
This function is done when electronic learning is used to replace learning activities.

Learning website that is implemented in this research is learning website addressed s-cds. Net developed by Akhlis [16]. This website is used as a guide finding the subject matter of classification. Another function of the learning website is to conduct activities that can stimulate learners to be able to perform observation and experiments independently. The advantages of learning websites developed by Akhlis [16] can be reviewed from the ease of access and completeness of the content on the theme of classification.

2.1.4. Students' Creativity

According to Boast, as quoted by Sumayku [24], creativity is a human ability and owned by everyone in a particular level. Hartanto [14] also defines creativity as a process of thinking, that is the process of thinking through various ideas to solve a problem. According to Costa, as quoted by Jazuli [25], creativity and creative thinking are both conceptually related but not identical. Creativity is an umbrella idea in which there is creative thinking.

The existence of creativity in the learners has various ways to measure it. According to Munandar, as quoted by Juliantine [19], measuring the level of creativity of learners can be done through cognitive traits and affective features. Cognitive characteristics are called aptitude traits that have the characteristics of smooth, flexible, original, detailing and assessing thinking skills. Affective characteristic is called non-aptitude traits which are indicated by the presence of curiosity, imaginative attitude, feel challenged by plurality, the nature of risk-taking and the nature of respect.

Measurements of creativity based on cognitive prowess are also expressed by Costa, as cited by Jazuli [25], namely: [1] identifying problems and opportunities; [2] asking better and different questions; [3] judging relevant from irrelevant data; [4] separating productive problems and opportunities; [5] prioritize choice and information competition; [6] raising the idea of production [fluency]; [7] raising the production of different categories and kinds of ideas [flexibility]; [8] increasing the production of new ideas or ideas of originality; [9] looking at the relationship between options and alternatives; [10] to stop old patterns of thought and habit; [11] create a new connection; [12] detailing, developing or filtering ideas, situations or plans [elaboration]; [13] look carefully at the criteria; And [14] evaluate the options.

Based on the description of how to measure the level of creativity, this study uses 'The Torrance Tests of Creative Thinking [TTCT]' as a test for assessing creativity by cognition [26]. Assessment of the level of creativity of learners is based on any LTM answers provided by learners. Three aspects of creativity assessed include:

(1) Fluency.

This component refers to the number of ideas created in response to a given command.

(2) Flexibility [flexibility].

This component appears in the approach when responding to a given command.

(3) Novelty [novelty].

This component refers to the authenticity of an idea created in response to a given command.

Measuring the level of creativity of previous learners has also been done by Jazuli [25]. Indicators of students' creative thinking that includes fluency, flexibility and originality are linked to the mathematical communication skills of learners. Fluency communication means being able to express an idea by giving many examples. Flexibility means communication can express an idea in various ways. Communication that originality means to express an idea in its way. Originality can also be said as novelty or innovation because the notion given is original which comes from the way the learners themselves.

2.5. Students' Character

According to Mustaqim [27], the character is a good habit [habituation] to behave and act on the values that have become a personality. Baroroh [28] argues that the character is associated with character education that is part of the process of moral formation of the nation's children. The process of moral formation is hampered because of the globalization that attacked the younger generation. These factors will cause cultural deviance.

The central theory in the cultural deviance by Akhlis [16] are:

(1) Social disorganization.

The theory focuses on the development of the disintegration of traditional values caused by rapid industrialization, increased immigration and urbanization.

(2) Culture conflict theory.

This theory asserts that different groups learn new norms that may clash with old patterns.

(3) Differential association theory.

Theories that argue that people learn to commit a crime as a result of the relationship of values and antisocial attitudes and patterns of criminal behavior.

Cultural deviance events can be overcome if every human being, especially the Indonesian people realize that all the behavior of the Indonesian nation has been reflected in Pancasila. Pancasila is the most important culture in Indonesia that should be taught in every learning in school and outside school from an early age. Dewi [29] argue that the purpose of learning is not just to educate people to be well-informed but to know and master their culture and learn the science, intellectual development which means developer himself in the future.

The five precepts in Pancasila are the identity of the Indonesian nation because the essence contained in Pancasila is taken from the noble culture of the Indonesian nation. However, the most frequent criminal cases that occur mainly in the learner is a form of cultural deviation due to the lack of, or lack of confidence in the true national identity is a reflection of the values of Pancasila, the process of reform and the influence of globalization [1]. The way that can be done to overcome these problems is through the planting of characters on the soul of every person. Characters based on the noble values of Pancasila can be explained by Aqib [30], including:

1. *Belief in the One Supreme; This precept implies belief and acknowledgment expressed in the form of deeds against the Single Unity of the Unbalanced. The values that include the first precepts are religious and honest.*
2. *Just and civilized humanity; This precept contains the meaning of awareness of attitudes and behaviors that correspond to moral values in living together by the absolute demands of the conscience by treating things as they should. The value of life reflected in the second precepts is tolerance and curiosity.*
3. *Unity of Indonesia; This precept implies a united effort in the unanimity of the people to foster nationalism within the state. The value of life representing the third precept is shown through the value of peaceful and communicative love.*
4. *Democracy is led by the wisdom of knowledge in representation deliberation: The fourth character comes from the social philosophy that human wants a relationship, good cooperation and mutual respect with others so that in communication there will be no argument. The fourth precept is represented through the character of democracy and responsibility.*
5. *Social justice for all Indonesian people; this precept implies justice prevailing in society in all spheres of life both material and spiritual. The value of life that reflects the fifth precept is hard work and social care.*

The cultivation of learner characters based on the noble values of Pancasila in this research is done when science learning activities are underway with the help of education media website learning. According to Masrurri [31], the cultivation of the character of learners can be done through educational media used during learning. The best educational media can facilitate the planting of noble value into the soul of learners so that it can be utilized as a habit in everyday life. The results to be obtained are learners who have character strength based on the noble values of Pancasila.

3. Methodology/Materials

The population of this research class VII of junior high school while the samples of the investigation were taken from two classes by using cluster random sampling technique. This research belongs to the quasi-experimental research with the form of nonequivalent control group design, according to Sugiyono, which was quoted by Nurroeni [32]. The independent variable in this study was inquiry-based separate worksheet by using ICT while the dependent variables were students' creativity and character. There were three methods which were used to collect data for research. Documentation method was used to obtain initial data of students which would be used as samples of research. The test method, in the form of posttest only design, was used to collect data for students' concept understanding. Meanwhile, the data of students' creativity and characters were collected by using observation method.

This stage of research was started by conducting an observation of students' initial condition, arranging post-test questions, and then arranging instruments of research. This step was continued by doing an evaluation of post-test questions properness, doing normality and homogeneity test so that samples of class VIIF were obtained as the control class and class VIIG as the experiment class. Experimental class was provided a guided inquiry-based independent worksheet while control class was provided structured inquiry-based independent worksheet. This research was conducted in four times effective meetings, which were as much as eleven hours of lesson hours. Students were then evaluated by solving multiple-choice posttest questions. The final stage was analyzing the data of research result to be able to answer the hypothesis of the investigation. Differences in the level of creativity, character, and student learning outcomes between the experimental class and control class were analyzed using t-test statistical method. The influence between the sheets of inquiry-based independent tasks using ICT to creativity, character and student learning outcomes were calculated using the correlation and coefficient of determination.

4. Results and Findings

4.1. The Effect of independent worksheet towards creativity

The overall acquisition of creativity score for experiment class was 84 while for the control class was 78. This Eminence was accompanied by the achievement of every creative aspect of students of experiment class [Exp] that control class [Con]. The score recapitulation of every creative aspect is shown in Table 1.

Table 1: The score recapitulation of every creativity aspect

Description	Fluency		Flexibility		Renewal	
	Exp	Con	Exp	Con	Exp	Con
Highest Score	91	87	93	86	89	83
Lowest Score	75	75	76	72	72	63
Mean	85	82	84	78	82	74
Achievement [%]	85	82	84	78	82	74

The fluency aspect obtained the highest percentage among three creativity aspects. The guided inquiry-based independent worksheet contains orders which are designed to explore concept knowledge. By using this worksheet, the students were able to give as many answers they want to give. The high acquisition of fluency aspect was caused by the opinion of the junior high school students that the right answers were the plenty ones. The eminence of experiment class was also seen in the flexibility aspect which showed that guided inquiry-based independent worksheet was able to embody the aspect of diversity. This happens because the answers revelation did not accompany the independent worksheet report; therefore, the students were free to answer the orders in various ways. These results are supported by the research of Kuntomo [10] who stated that an independent task could foster the creativity of learners which directly experiencing and learning the knowledge.

In the renewal aspect, the experiment class obtained higher achievement score than the control class. This result was due to guide inquiry-based independent worksheet gave freedom to students to explore various answers from the content of the book as well as the given examples [33] [34]. The renewal aspect obtained the lowest percentage compared to the other aspects. Based on the opinion of junior high school students, the right answers were the

ones which are similar to the content of the book or the given examples.

The eminence of the creativity level of experiment class students in comparison with control class students was confirmed with the discrepancy test [t-test]. The result of the t-test of students' creativity level can be seen in Table 2.

Table 2: The result of T-Test of students' creativity level

Class	Mean	S	dk	α	t_{count}	t_{table}	Description
Experiment	84	2.84	58	5%	7.76	1.68	H_0 rejected
Control	78						

The result showed that the learning process using guided inquiry-based independent worksheet is more effective in infusing students' creativity. This is supported by the integration of ICT in the form of website which contains learning videos so that the students' creativity can be maximized. This factor makes the students can resolve the faced problems using their creativity. The creativity of learners can be acquired through learning media such as videos containing the visualization of knowledge that excite the imagination of learners [14].

This research discovers a strong relationship between guided inquiry-based independent worksheet towards the students' creativity of experiment class. The result of correlation analysis of independent worksheet towards students' creativity is presented in Table 3.

Table 3: The result of correlation analysis of independent worksheet towards creativity

Class	n	r	I [%]	dk	t_{count}	t_{table}	Description
Experiment	30	0.625	39.08	28	4.238	1.7	Strong and dependent Linear
Control	30	0.346	12.04	28	1.957	1.7	Low and dependent Linear

The amount of contribution given by guided inquiry-based independent worksheet to the students' creativity level of experiment class was 39.08% while other factors influenced the rest percentage. This strong correlation can happen because guided inquiry-based independent worksheet can make students experience and feel everything they do so that the answers given can be more diverse and it can trigger some renewals which are near to the correctness.

The result of this research showed that guided inquiry-based independent worksheet was a teaching material which combines learning model and media to simplify the infusion of students' creativity. The guided inquiry-based learning model has what is so-called inquiry stage which allows the development of students' creativity in solving a problem. This result was supported by the research of Joyce & Weil, which was quoted by Juliantine [19] which stated that the guided inquiry-based learning was able to create the spirit of creativity. The integration of website which contains learning videos is also able to develop creativity. This is due to the displayed knowledge visualization can make students answer the orders with more fluent, vary and original. Various results of this research show that guided inquiry-based independent worksheet which uses ICT can embody the creativity from the fluency, flexibility, and renewal aspect. This is the research conducted by Akhlis [16] which stated that inquiry-based independent worksheet which uses ICT could find the creativity level of the students.

4.2. The influence of independent worksheet toward the Character

The overall character score for experiment class was 94.5 while control class obtained 92.3. This Eminence was accompanied by the percentage acquisition of achievement level achieved by every character aspect of experiment class students. The score recapitulation of every student character aspect is shown in Table 4.

Table 4: The achievement of every character aspect

Character Aspect	Achievement [%]	
	Exp	Con
Communicative	30.8	20.0
Social Care	79.2	78.3
Love of Peacefulness	95.8	93.6
Hardworking	98.6	98.6
Tolerance	99.4	99.4
Religious	99.7	98.6
Democrative	100.0	77.5
Honesty	100.0	100.0
Curiosity	100.0	100.0
Responsible	100.0	100.0

Independent worksheet is supported by a stage of guided inquiry-based learning. As the Stallions [35] that the character education as persistence can be formed through a process of investigation, experimentation, reflection, and demonstration. Also, each child essentially has the character of an honest and should be developed [36]. This stage makes the character with the noble value of Pancasila becomes easy to instill to the students. Students' habit of praying before and after a learning activity will ease the implant process of the religious character. Independent worksheet which is accompanied by learning videos can develop curiosity character so that students can also develop a hard working character when they do the independent worksheet. This learning can develop responsibility character in being capable of doing everything based on the subject they are learning. Kamaruddin [37] stated that responsibility for making someone discipline, and always do all things as good as possible. The process doing independent worksheet which demands whatever the result it is can embody the honest character to the students.

Tolerance character can be developed through recitation phase which the students to report their result of work. This character can trigger the love of peacefulness character so that it can make a class condition which is not full of commotion. The recitation phase during the handout of the independent worksheet can give space to students to develop a democratic character so that students can assess the equality of rights and obligation of every person. This democratic attitude can trigger experiment class students to have communicative characters or which is called talkative, easy to mingle and to cooperate.

Communicative character obtained the lowest percentage because students still do not have enough self-confidence to deliver their opinions, refusals or whatever questions they have in their mind. The handout of the guided inquiry-based independent worksheet can develop the communication ability of the students in a phase of inquiring, so that experiment class obtains a higher percentage compared with control class. The achievement of social care character, which is only about 70%, shows that guided inquiry-based independent worksheet has been able to create helpfulness attitude to other students who have difficulties.

The eminence of experiment class student's character level compared to the control class students can be confirmed through discrepancy test [t-test]. The result can be seen in Table 5.

Table 5: The result of character level t-Test

Class	Mean	S	dk	α	t_{count}	t_{table}	Description
Experiment	94	2.58	58	5%	3.32	1.68	H_0 Rejected
Control	92						

The guided inquiry-based independent worksheet was more effective in implanting character with a noble value of Pancasila to the students. The guided inquiry-based learning has stages which can develop characters which the students have. This result is supported by a statement of Joyce & Weil, which was quoted by Kebudayaan [38], which stated that some characters could be developed through guided inquiry-based learning.

Another result shows that there was a strong relationship between independent worksheet with the character stage of experiment class students. The result of correlation analysis can be seen in Table 6.

Table.6: The result of independent worksheet correlation analysis towards character

Class	n	r	I [%]	dk	t_{count}	t_{table}	Description
Experiment	30	0.704	49.66	28	5.255	1.7	Strong and dependent Linear
Control	30	0.486	23.64	28	2.944	1.7	Middle and dependent linear

The level of influence of guided inquiry-based independent worksheet towards character stage of experiment class students was 49.66% while other factors influence the rest of it. This strong correlation showed that guided inquiry-based independent worksheet using website could impact characters to the students. The characters embodying through educational media is expected to make the noble values of Pancasila become students' habitual values in their life [1].

The result of this research showed that guided inquiry-based independent worksheet was effective to embody the students' characters. Guided inquiry-based independent worksheet using ICT was a teaching material which combines learning media and model so that the implantation process of students' characters can be easier. The noble values of Pancasila, which is originated from the national culture could strengthen student's mentality [31]. This condition can establish students to become the nation's next generation which is free of cultural deviance.This research result is by research was done by Akhlis [16] which stated that the objectives of learning are not simply to educate human beings to be well-informed, but also to know and mastering their culture.

4.3 The influence of independent worksheet towards Concept Understanding

The difference of concept understanding between control class and experiment class is shown by the mean achievement of posttest, independent worksheet, quizzes and final score. This can be seen in Figure 1.

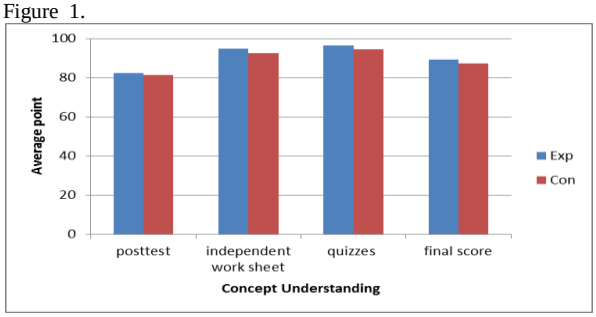


Fig. 1: The difference of concept understanding between experiment class and control class

This result appeared because the guided inquiry-based independent worksheet was adjusted to the objectives of learning. This resulted in the students to not only be able to do the independent worksheet, but also to be able to solve questions in the form of quiz or posttest. The positive achievement towards the learning result of experiment class is confirmed through discrepancy test [t-test]. The result of this analysis is shown in Table 7.

Table 7: t-test Result of Final Score Mean

Class	Mean	S	dk	α	t_{count}	t_{table}	Description
Experiment	89	2.46	58	5%	2.69	1.68	H_0 rejected
Control	87						

The mean of the experiment class students' final score was better than the control class students'. The answers in the independent worksheet were indeed designed as the material summary which was learned by the students. The inquiry-based learning which has been carried out can also be used as a media to maximize the students' conceptual understanding. Worksheets increased the students' achievement. Besides, students stated that they enjoyed the activity [39]. This influence is supported by the result of research done by Praptiwi [15] which states that the guided inquiry-based learning can give influence towards students' academical success.

The use of ICT in the form of the website containing learning videos is one of the independent worksheet positive achievement factors towards the students. This idea was supported by research done by Asabere [13] which stated that ICT could ease the solving and completion of problems so that the students' learning result could be increased optimally.

Another result was the middle correlation between guided inquiry-based independent worksheet with the conceptual understanding of experiment class students. This correlation analysis can be seen in Table 8.

Table 8: The result of independent worksheet correlation analysis towards concept understanding

Class	n	r	I [%]	dk	t_{count}	t_{table}	Description
Experiment	30	0.532	28.26	28	1.76	1.7	Middle and dependent linear
Control	30	0.246	6.09	28	1.34	1.7	Low and dependent linear

The influence given by the guided inquiry-based independent worksheet towards students' conceptual understanding was 28.26%. This correlation showed that guided inquiry-based independent worksheet is media which can maximize the conceptual understanding of experiment class students. The guided inquiry-based independent worksheet gave the spaces to the students to explore any knowledge they have. Activities students conduct experiments and discussions to make learning more meaningful for students to have a deeper portion to express its ideas [40]. This was also supported by their knowledge which they get from their surrounding environment which was packed with an accessible technology and has unlimited time for using it [41].

The overall result of this research showed that guided inquiry-based independent worksheet using ICT in the form of the website was not only able to implant creativity and characters, but it was also able to give a positive achievement towards the conceptual understanding. The independent worksheet report sheet which was not equipped with the answer keys could make the students have their freedom in answering every order in fluent, various and new ways. This way of learning developed the students' creativity level and also embodying the students' character through independent worksheet which was conducted with the stages of guided inquiry and the aid of learning website. This method could make the students' mind became easy to be embodied with the noble values of Pancasila. This type of mind can avoid students from the cultural deviance in this globalization era. The orders of the independent worksheet which were adjusted to the objectives of learning enhanced the students' ability to answer the questions in more varied ways. Their ability reflected their better concept understanding [29].

5. Conclusion

The result of moment product correlation analysis showed that ICT gave the effect of 39.08% towards creativity level, 49.66% towards character level and 28.26% towards concept understanding in experiment class. The result showed that inquiry-based independent worksheet in science learning with classification theme gave the positive influence towards concept understanding, creativity and character level of junior high school students.

Based on the results of this study, the use of an inquiry-based independent worksheet in science learning is recommended. Also, this research required a continuation to know the influence of guided inquiry-based independent worksheet using ICT towards students' creativity and character on the learning theme other than classification.

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