The Effectiveness Of Inquiry Learning Communication On Student Learning Outcomes At Smpn 2 Makassar

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Abstract

The transition from online to offline learning occurred during the covid-19 pandemic; this made students need time to adapt to the learning process. Therefore, innovation in learning is needed, especially in science subjects, where teachers can choose the suitable learning method; one method that can be used is the inquiry learning method. This study aims to: (1) analyze the effectiveness of inquiry learning communication on student learning outcomes in science subjects in public junior high school 2 Makassar, and (2) analyze the effect of inquiry learning communication on student learning outcomes in science subjects in secondary schools. The first is the land of 2 Makassar cities. The method used in this study is quantitative with a descriptive correlation approach. The sample in this study amounted to 144 class VIII students with the cluster random sampling technique. The data collection technique used a closed questionnaire with a Likert scale. The results showed that (1) the effectiveness of inquiry learning communication affected student learning outcomes in science subjects at public junior high school 2 Makassar. There is a change in student behavior due to the stimulus carried out by the teacher during the learning process, and (2) There is a positive and significant influence of inquiry learning communication on student learning outcomes. The simple linear regression analysis results show the R Square value of 0.380. This shows that the effect of variable X (effectiveness of inquiry learning communication) on variable Y (student learning outcomes) is 38.0%.

Efektivitas Komunikasi Pembelajaran Inkuiri Terhadap Hasil Belajar Siswa di SMPN 2 Makassar

Abstrak

Masa transisi pembelajaran daring menjadi luring terjadi saat pandemi covid-19, hal ini membuat peserta didik membutuhkan waktu untuk beradaptasi kembali dalam proses pembelajaran. Maka dari itu, dibutuhkan adanya inovasi dalam pembelajaran terutama pada pelajaran IPA (Ilmu pengetahuan Alam), dimana guru bisa memilih metode pembelajaran yang sesuai, salah satunya yaitu metode pembelajaran inkuiri. Adapun tujuan dari penelitian ini, yaitu untuk: (1) menganalisis efektivitas komunikasi pembelajaran inkuiri terhadap hasil belajar siswa pada pelajaran IPA di SMPN. 2 kota Makassar, dan (2) menganalisis pengaruh komunikasi pembelajaran inkuiri terhadap hasil belajar siswa pada pelajaran IPA di SMPN. 2 kota Makassar. Adapun Metode yang dapat digunakan dalam penelitian ini adalah kuantitatif dengan pendekatan penelitian deskriptif

correlation. Sampel penelitian ini berjumlah 144 siswa kelas VIII dengan teknik *cluster random sampling*. Teknik dalam mengumpulkan data menggunakan angket tertutup dengan skala *likert*. Hasil penelitian ini menunjukkan bahwa (1) Efektivitas komunikasi pembelajaran inkuiri berpengaruh terhadap hasil belajar siswa pada pelajaran IPA di SMPN 2 kota Makassar. Dapat dilihat bahwa terdapat perubahan perilaku peserta didik yang diakibatkan karena adanya stimulus yang dilakukan oleh komunikator (guru) pada proses pembelajaran yang berlangsung, dan (2) ada pengaruh positif dan signifikan komunikasi pembelajaran inkuiri terhadap hasil belajar siswa. Berdasarkan hasil uji analisis regresi linear sederhana menunjukkan bahwa nilai R Square adalah sebesar 0,380. Hal ini menunjukkan ada pengaruh efektivitas komunikasi pembelajaran inkuiri (Variabel X) terhadap hasil belajar siswa (variabel Y) dengan nilai sebesar 38,0%.

Kata-kata Kunci: *Komunikasi Pembelajaran, Efektivitas Pembelajaran, Pembelajaran Inkuiri, Hasil Belajar*

INTRODUCTION

Education is known to play pivotal roles in a country›s development. Being aware of education, individuals are likely to improve their educational quality. Efforts in improving education quality requires the improvement of teaching-learning activity, which could be done by enhancing the communication in the learning process.

In educational context, communication serves as a means to protect values and promote changes (Iriantara & Syaripudin, 2018:11). Educational communication refers to a communication process aiming primarily to deliver messages.

The communication during the learning process may form various conditions in which Teachers and learners are involved in a complex interaction (Ruhimat, 2017:131). This interaction may include speaking, listening, reading, and writing activities. The learning process is an interaction involving learners, teachers, and the learning literature within a certain place. In other words, interaction could not take place without communication.

Various forms of communication occurs during the learning process, such as interpersonal, intrapersonal, and group communications. The intrapersonal communication refers to use of messages to create meaning for one's self, and tend to occur within one's self. Meanwhile, the interpersonal communication involves two or more individuals to exchange information. The group communication refers to a communication among a group of individuals who share the same foundation, philosophy, goal, and rules that should be adhere to by each member of the group.

Despite the Covid-19 pandemic condition, the learning process have returned to offline, face-to-face settings. In its practice, the school where this study was conducted, i.e., State Junior High School 2 of Makassar City (SMPN 2 Kota Makassar) applies two shifts in which 50% students attend the morning schedule while the other 50% students attend to afternoon schedule while strictly implement the health protocol. Students still wear facemasks during the learning process. Students need time to adapt to the transitional process from online to offline settings. Therefore, it is necessary to have innovative learning process in which

teachers can select suitable learning model and methods.

The preliminary study was conducted by interviewing teachers in SMPN 2 Kota Makassar, and found that students' learning outcome in Natural Science subject significantly declined, which allegedly accounted for by the Suboptimal online learning process during the pandemic. During the online learning process, teachers mostly use lecturing method and only few question-answer session, leading to students' boredom and poor interaction.

The Natural Science subject is not only associated with the mastery of concept, fact, or principle but also deals with the discovery process. Natural science could be directed to implement the inquiry learning activity that highlights critical and analytical thinking skill to discover the answers to their own questions (Sanjaya, 2008:303). Through inquiry learning, students possibly obtain more in-depth understanding of their surrounding nature, as it provides students with

opportunities to play central roles in discovering the core of the learning process. (Heksa, 2020:14). In addition to mastering the subject materials, students are demanded to optimize their potentials and develop their thinking skills. .

وَجَعَلُوا۟ ٱلْمَلَـٰٓئِكَةَ ٱلَّذِينَ هُمْ عِبَـٰدُ ٱلرَّحْمَـٰنِ إِنَـٰثًا ۚ أَشَهِدُوا۟ خَلْقَهُمْ ۚ سَتُكْتَبُ شَهَـٰدَتُهُمْ وَيُسْـَٔلُونَ

They have made the angels—who are servants of the All-beneficent—females. Were they witness to their creation? Their testimony will be written down and they shall be questioned. (Az-Zukhruf-19)

The verse shows that it is necessary to make prove using sensory proposition, which could be done through experimenting in the inquiry learning activities, among others.

In the inquiry learning, students learn to master the natural science concept while researching and solving problems based on the discovered facts. Through the inquiry learning, students can improve their confidence and and creativity to find alternatives in solving learning problems.

The learning process is the core process to achieve the goal of education. The effectiveness of messages delivered during the learning process heavily depends on teachers' creativity. Thus, it is necessary to implement the form of communication during the learning process.

Based on the description above, the following research problems were formulated: (1) How effective is the inquiry learning communication in affecting students' learning outcome in Natural Science subject in SMPN 2 Makassar?. (2) What is the effect of the inquiry learning communication in improving students' learning outcome in Natural Subject in SMPN 2 Makassar?

In line with the formulated research problem, this study specifically aims to analyze the effect of inquiry learning communication on students' learning outcome, and to see its effectiveness in improving students' learning outcome in Natural Science subject in SMPN 2 Makassar.

LITERATURE REVIEW

The present study lies upon the previous work conducted by (Made Ayu

Suryantari et al., 2019), entitled the effect of guided inquiry learning model with concrete matter media on scientific attitude and learning outcomes in Natural Science Subject. The study reports that the guided inquiry learning model positively affects students' scientific attitude and learning outcomes in Natural Science subject. The difference between this study and the previous work lies in the participants and study location, while this study applied the same sampling technique, i.e., the cluster random sampling technique.

Another study on guided inquiry model conducted by (Putra et al., 2017) showed t-count = 3.35 > t-table = 1.99 with a significance value < 0,05, indicating that mindmap-assisted guided inquiry learning model significantly affected the 5th-grade students' learning outcome in Natural Science subject. Although sharing the same number of variables, the present study is, however, different from that study in terms of research design and sampling technique.

The study conducted by (Wayan Juniati & Wayan Widiana, 2017) on the implementation of inquiry model to improve the students' learning outcome in Natural Science found that during the first cycle, the mean score of students' learning outcome was 72.75% (categorized as moderate), and during the second cycle, the mean score of students' learning outcome was 80%, showing a 7.25% increase. The score improvement in the second cycle showed that the inquiry learning model could improve the 4th-grade students' learning outcome in Elementary School 5 Gulingan. Although having the same research purpose, i.e., to find out the learning outcome in Natural Science, the

present study is different from Juniati and Widiana's (2017) study in terms of subjects and the research approach.

Learning communication refers to message exchange and meaning-making process in an educational interaction found in any level of education (Iriantara, n.d. 2014:32). During the educational communication, three communication levels, i.e., interpersonal, public, and group communication occur. The learning communication is closely associated with human communication process and messages within the learning activities.

Among the communication model that may affect the learning communication is the Schramm model of Communication (Sanjaya, n.d.-b 2012:85), which contains several components of communication: (1) communicator, an individual that deliver messages, i.e., various information that becomes the learning content or materials. (2) Encoding, a process in which the communicator deliver messages in the form of symbols, such as written symbol, voice, gesture, and other symbols to the communicant. In the learning context, an educator can modify the contents of learning process into gesture, voice, and written symbols, (3) Channel and media, a container through which the symbols are delivered by the communicator to the communicant, (4) Decoding, a process in which communicants interpret the symbols to create meaning, (5) communicant, the receiver of messages, who serve as the target of communication process. In other words, any individual who receive messages or information is considered the communicant, (6) feedback, the response

expressed by the communicant to the communicator.

There are several principles of learning communication, including: (1) respect, referring to individuals' respectful attitude in delivering messages and information. In the educational context, teachers are demanded to respect their students. Developing respectful attitudes can establish a supportive collaboration between teachers and students, (2) empathy, referring to individuals' ability to place themselves in others' situation. In other words, teachers can understand and listen to the students' feelings. (3) Audible, referring to the messages delivered by communicators are understood by the communicant. Teachers are demanded to utilize learning media to allow students better understand the messages being presented. (4) Clarity, meaning that the delivered messages should be clear to avoid misinterpretation, and (5) Humility, Meaning that During a communication, and individual needs to be humble to make others feel comfortable during the communication process (Masdul, 2018:6).

Failures ins the learning process may be accounted for the poor is communication system A communication in the learning process is considered effective if students manage to capture the teachers' messages. Teachers, as the communicator, are expected to have adequate communication skill and develop an effective communication pattern. A number of requirements are known to have an effective communication: (1) The communication atmosphere should utilize an easy-to-understand language, (2) the messages delivered to the public could attract the interest and attention,

(3) the messages or information fits the the communicant's interest, and (4) the messages triggers respects to others (Naway, n.d, 2017:91).

During the learning process, the communication is deemed effective if students can capture the teachers' messages and deliver feedbacks. Therefore, it is necessary for teachers to have an adequate communication skills. In other words, the effective communication during the classroom activities may heavily depend on the teachers' role as the communicator.

There are five components of effective communication: comprehension, attraction, self-involvement; acceptability, and persuasion, and four of them (i.e., comprehension, attraction, self-involvement, and acceptability) are relatively easy to measure - (Betrand dalam Basori, 2017:40)

An effective teachers refer to those who are capable of finding methods to draw students' direct involvement during the learning process, building a sympathetic relations with students and creating a comfortable, motivating learning atmosphere for students. An effective communication is necessary in any subject, including the Natural Science subject.

Natural Science subject, as the name suggests, address the nature and its content, including the natural phenomena. By understanding natural science, students learn to master the concept, facts, and principles while undergoing the discovery process. Many methods are applicable for Natural Science subject, one of them is the inquiry learning method.

The inquiry learning method emphasize the students' analytical and

critical thinking in order to find the answer for the problems being questioned.

Inquiry is important to make sure that students do not merely memorize the factual information but also implement facts to develop meaningful questions based on their understanding. The questioning approach is used during the inquiry learning process, allowing students to develop and find factual informations while capable of implementing their new knowledge in different fashions and methods.

Some features of inquiry learning include: (1) The inquiry learning emphasize the students' discovering activities. In this context, students are the subject of the learning activity. During the inquiry learning process, students play the central role to discover the core of the materials they are currently learning, (2) all students' activities are directed to discover the answer for their own question. The teachers play roles as the motivator and facilitator to direct the students to find the answer. (3) applying the inquiry learning, students are likely able to develop their logical, systematic, and critical thinking skills. Thus, students are expected to develop their potentials during the learning process (Al-Tabany, n.d, 2014:80)

The benefits of the inquiry learning have also been reported, such as: (1) strengthening students' mastery of relevant content while improving their understanding of the main concept, which may be accounted for by the students' curiosity that triggers the brain to store the information in the long-term memory. (2) Familiarizing students with the discovery process and curiosity, deepening the students' understanding of the learned concept, (3) Providing students with more in-depth content understanding, allowing them to see the subject as a concept instead of merely a rule, idea, and simple concept. Through this process, students will likely understand how an idea is developed and why a rule or formula is applied. When they can properly apply the rule, idea, or formula, they could become the owner of their learning process, (4) Helping students view the significance of the subject. Students will value the benefit of the subject when they gain it through the discovery process, and (5) developing students' initiatives to learn how to propose a question, investigate, collaborates, work together, and draw a conclusion. Such skills are useful for their next education level and the future work (Heksa, n.d, 2020:11).

The inquiry learning could be implemented through the following stages: (1) Orientation. Orientation is the first stage to create a more responsive learning environment. In this stage, teachers prepare students to engage in the learning activities. Teachers also stimulate the students to try solving a problem, the important point of this stage. The success of inquiry learning highly depends on the students' willingness to solve problems, and without problem-solving willingness and skill, the learning process could not be done as expected, (2) Problem Formulation. By formulating the problems, students can think about finding and solving the problems. In this process, students will likely obtain meaningful experience, (3) Hypothesis Formulation. The third step in inquiry learning is formulating hypothesis, the formulated hypothesis should also be confirmed

through the learning process. When students can confirm their hypothesis, they will likely have more advanced thinking skill, (4). Data Collection. In the fourth stage, students are required to collect accurate information to test their hypothesis. Teachers play important role in encouraging students to find data and information relevant to the problems being investigated, (5) Hypothesis Test. In this stage, the students hypothesis is confirmed based on the collected data/information. This process shows the degree of students' confidence with the hypothesis they propose, and (6) Drawing Conclusion. The final step in the inquiry learning is the conclusion drawing, in which students should describe their findings. In this final step, teachers should direct students to obtain relevant data in order to draw an accurate conclusion.

This study employed three theories relevant to the focus of the study. First, the behavioral learning theory (Stimulus-response theory). Following the behaviorism, learning is a process in establishing the relationship between the stimulus and response (Sanjaya, 2008: 237). This theory is known as the Stimulus-response theory. Learning activity is an effort to form a stimulus-response interaction.

Behaviorism believes that changes in observable behaviors could be measured, described, and predicted. Behaviorism suggest that behavioral changes are observable. Learning activity is a process of behavioral changes that occur in each individual due to the influence of the surroundings.

This theory views individuals as reactive creature, as they can respond to their surroundings. Individual experience can form a behavior through a learning process. Behaviorism views that individuals' behavior results from the communicator›s stimulus and their response, or in the learning context, teachers' stimulus and students' response.

Students are considered learning something when they can exhibit a behavioral change. For instance, a student is considered being able to read if he/she shows a significant improvement in reading behavior. Since stimulus and response are observable, anything teachers give to their students could be considered a stimulus, while anything exhibited by the students could be deemed a response to the stimulus.

Behaviorism also highlights the importance of measurement, as it allows teachers to observe behavioral changes. Behaviorism emphasizes training, learning outcome, and the acquired skills. Applying behavioral theory, the learning process may include: (1) motivation, (2) stimulus, (3) response, and (4) reinforcement.

Behaviorism consists of three theories, stimulus-response, conditioning, and reinforcement. These theories assume that an individual does not equipped with innate potentials. Instead, Their development is determined by the external factors such as school, community, and family environments.

The second theory is the theory of constructivist learning. The theory of constructivist learning is a theory that provides freedom to all individuals who are willing to learn. In other words, human

can find their needs through others' helps. This theory believes that learning process is not merely memorization, it is a process to construct knowledge through experiences. Knowledge is constructed, not a gift from other individuals.

During the learning process, students are demanded to actively engage with the activities, such as designing a concept, thinking, and making meaning about the topic they learn. In this context, students' willingness to learn significantly determine the learning process. Teachers play important role in assisting students' knowledge construction process.

The constructivism theory is developed by Jean Piaget, who believes that each child possess a cognitive structure (schema). The schema is formed based on one's experience, the schema is complemented through the process of accommodation and assimilation.

Assimilation is a process to complete individuals' scheme. It is a cognitive process in which students combine the concept, perception, and new experience and integrate them into the schema. The assimilation process can also result in changes and development. Thus, students can continuously develop the assimilation process. Meanwhile, the accommodation refers to a process done to change the existing schema in order to form the new schema. The accommodation process occurs because students face new experiences.

The third theory is the elaboration likelihood theory, a theory proposed by John T. Cacioppo and Richard E Pretty. This theory focuses on the persuasive communication. The elaboration likelihood refers to individual›s possibility in using

critical thinking skill to evaluate a message (Morissan, n.d, 2018:24). This theory relies on individuals' method in processing the received messages.

This theory believes that individuals have different, unique ways to obtain persuasive messages. Some studies believe that a message is received in a more complex fashion rather than critical thinking, while others argue that a message is received in simple manner without considering the underlying arguments. This viewpoint depends on how an individual processes the message.

There are two routes used to process messages and information: (1) the central and (2) peripheral routes. The central route is characterized by the use of big cognitive (Perloff dalam Eleazar & Irwandy, 2021:52). Applying the central route, information received by the individual is carefully evaluated and associated with their knowledge and values. Individuals using central route tend to think and consider the messages they received. The peripheral route is a channel where individuals process the messages and focus on simple signs to process a message. Individuals using peripheral route in processing an information tend to be less critical in thinking about the message. Individuals using peripheral routes tend to have low motivation and not to evaluate the messages they receive as they perceive its impact as insignificant. (a)Motivation. High motivation likely drives individuals to think critically through central routes, whereas individuals with low motivation tend to use peripheral routes. Individuals are capable of using their critical thinking skill If he/

she understand and has knowledge of the messages.

RESEARCH METHOD

This study applied quantitative correlational method to find out the relationship between the inquiry learning communication effectiveness and the students' learning outcome in Natural Science subject in SMPN 2 Makassar. This study also depicts the captured phenomena to draw conclusions of the study.

This study was conducted in SMPN 2 Kota Makassar because This school implemented the inquiry learning method. The study was conducted in one month, from January 2022 to February 2022.

The respondents were 144 8th-grade students, recruited using the cluster random sampling technique. Two types of data were collected: Primary and secondary data. The primary data were collected using questionnaire that consists of a number of statements. The use of questionnaire allows researchers to analyze attitudes, behavior, beliefs, and characteristics of individuals within an organization (Siregar, n.d.2019).

This study employed a close-ended questionnaire, a data collection technique using statement items with limited answer choice. (Kurniawan, n.d, 2016). The items of questionnaire were equipped with a 5-point Likert scale, from 5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), and 1 (strongly disagree). Each item was scored differently according to the given responses. The secondary data in this study were obtained from relevant literature, such as books, journals, and internet, among other sources.

In this study, several data analysis technique was applied. The validity test was applied to find out the validity of the questionnaire, while reliability test was performed to see the consistency of the measurement result. An instrument is considered reliable if its α value is higher than 0.60 (Suryadi et al., n.d, 2019), (3) the normality test was performed to see whether or not the data were normally distributed, (4)Coefficient of Determination test refers to the test performed to see the strength of relationship between two or more variables, which determine the direction of each variable (r), and (5) Hypothesis test, performed to see whether the coefficient of regression is significant/ insignificant on each variable.

RESULT AND DISCUSSION

In order to see the communication effectiveness in the inquiry learning in SMPN 2 Makassar, three indicators were applied: attractiveness, acceptability, and self-involvement.

Table 1. Frequency of Response to the Indicator: attractiveness

Category	Frequency	Percentage
Strongly Disagree	25	17.4%
Disagree	17	11.8%
Neutral	18	12.5%
Agree	53	36.8%
Strongly Agree	31	21.5%
Total	144	100.0%

Source: Data processing, 2022.

As displayed in the table above, regarding the statement " Natural Science teachers are well speaking," 17.4% respondents (n=25) strongly disagreed, 11.8% respondents (n=17) disagreed, 12.5% respondents (n=18) were neutral, 36.8% respondents (n=53) agreed, and 21.5%

(n=31) strongly agreed with the statement.

Table 2. Frequency of Response to the Indicator: acceptability

Category	Frequency	Percentage
Strongly Disagree	12	8.3%
Disagree	18	12.5%
Neutral	30	20.8%
Agree	60	41.7%
Strongly Agree	24	16.7%
Total	144	100.0%

Source: Data processing, 2022.

As displayed in the table above, regarding the statement " The description and figure on the materials helps me understand the inquiry learning," 8.3% respondents (n=12) strongly disagreed, 12.5% respondents (n=18) disagreed, 20.8% respondents (n=30) were neutral, 41.7% respondents (n=60) agreed, and 16.7% (n=24) strongly agreed with the statement.

Table 3. Frequency of Response to the Indicator: involvement

Category	Frequency	Percentage
Strongly Disagree	12	8.3%
Disagree	17	11.8%
Neutral	23	16.0%
Agree	72	50.0%
Strongly Agree	20	13.9%
Total	144	100.0%

Source: Data processing, 2022.

As presented in the table above, regarding the statement " Natural science teachers deliver the materials well," 8.3% respondents (n=12) strongly disagreed, 11.8% respondents (n=17) disagreed, 16.0% respondents (n=23) were neutral, 50.0% respondents (n=72) agreed, and 13.9% (n=20) strongly agreed with the statement.

After describing the result, the next step was to analyze the data using SPSS. The test result is presented as follows:

Table 4. Validity Test on the inquiry learning communication effectiveness

Statement Variable X	Pearson Correlation value	Test Result
1	0.437	Valid
2	0.404	Valid
3	0.326	Valid
4	0.435	Valid
5	0.526	Valid
6	0.360	Valid
7	0.257	Valid
8	0.392	Valid
9	0.400	Valid
10	0.472	Valid
11	0.502	Valid
12	0.360	Valid
13	0.453	Valid
14	0.393	Valid
15	0.382	Valid

Source: Data processing, 2022.

Table 5. Validity Test on the students' learning outcome

Statement Variable X	Pearson Correlation value	Test Result
1	0.564	Valid
2	0.539	Valid
3	0.416	Valid
4	0.605	Valid
5	0.574	Valid
6	0.574	Valid
7	0.588	Valid

Source: Data processing, 2022.

The validity test result, as shown in tables 4 and 5 above, showed that the Pearson correlation value of each item was higher than the threshold value of r 0.1637, meaning that all items were considered valid as the data collection instrument.

A questionnaire is deemed reliable if the respondents' response to the questionnaire are consistent over time. The reliability of the questionnaire is determined by seeing the Cronbach's alpha value. The questionnaire is reliable if its Cronbach's alpha value is higher than 0.60.

The following table presents the reliability test result:

Table 4 Reliability Test Result

Variable	Prerequisite	Cronbach›s Alpha Value	Reliability Test Result
X	0.60	0.635	Reliable
Y	0.60	0.621	Reliable

Source: Data processing, 2022.

As shown in the table above, the questionnaire was deemed reliable as its Crobach's Alpha value was higher than 0.60.

The normality test was performed to see whether or not the data were normally distributed, which could be done by performing One Sample Kolmogorov-Smirnov Test using SPSS. The asymp. *Sig(2-tailed) value of higher than 0.05 indicate normal distribution, while the asymp. Sig (2-tailed) value of lower than 0.05 indicate non-normal distribution.* The following table shows the SPSS output result

Table 7 Normality Test Result

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		144
Normal Parametersa,b	Mean	0.0000000
	Std. Deviation	3.24499106
Most Extreme Differences	Absolute	0,056
	Positive	0056
	Negative	-0030
Test Statistic		0,056
Asymp. Sig. (2-tailed)		.200c,d

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Source: Data processing, 2022.

The table above showed that the data were normally distributed, as the Asymp. *Sig.* (2-tailed) was 0.200 (> 0.05%).

The coefficient of correlation analysis was performed to see the degree of relationship stated by the coefficient of correlation(r). The direction or relationship between variables X and Y may be either negative or positive. According to Sinambela (2014:208), the criteria to interpret the coefficient is as follows:

Table 8 Coefficient of Correlation Interval

No.	Interval	Description
1	0.00-0.199	Very Low
2	0.20-0.399	Low
3	0.40-0.599	Moderate
4	0.60-0.799	Strong
5	0.80-1.000	Very Strong

Source: Sinambela (2014)

The following table shows the coefficient of correlation test result:

Table 9 Pearson Coefficient Test

R	R Square	Adjusted R Square	Std. Error of the Estimate
.617a	0380	0376	3256

Source: Data processing, 2022.

Table 9 above shows that the coefficient of correlation (R) was 0.617, indicating a strong relationship between variables X and Y. Based on the output, the coefficient of determination (R square) was 0.380, indicating that the communication effectiveness in inquiry learning affected the students learning outcome by 38.0%.

The simple linear regression result is presented below:

Table 10 Simple Linear Regression Test

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		

1	(Constant)	6024	2163		2785	.006
	Communication Effectiveness in Inquiry learning	.367	.039	.617	9334	.000

a. Dependent Variable: Learning outcome

The following regression equation is obtained:

Y= 6.024+ 0.367 X, which could be interpreted as follow:

(1) The constant value of 6.024 means that the value of learning outcome (variable X) was 0.624. (2) The regression coefficient of 0.367 means that every 1% increase in variable X will increase the value of learning outcome by 0.367. The regression coefficient value was positive, indicating that variable X positively affects the variable Y.

Table 4 T-Test Result

No.	Variable	t-value	Sig.
1	The Inquiry learning communication effectiveness (X)	9334	0000

Source: Data processing, 2022.

Table 11 above displays the effect of inquiry learning communication effectiveness on students' learning outcome in SMPN 2 Kota Makassar. The significance value of 0.000 (<0.05) indicates that the inquiry learning communication effectiveness affects the students' learning outcome. The tcount of 9.334 (> ttable of 0.1637) means that the inquiry learning communication effectiveness affects the students learning outcome.

Thus, the proposed hypothesis is supported. By applying inquiry learning method, students are required to discover the answers for their problems. The discovery process could be done through question and answer between students and teachers or among the students. Using this method, students play pivotal roles in determining the learning process. Students are expected to experience a behavioral changes based on experiences they obtain during the learning process.

The inquiry learning in this study was conducted by dividing the students into four group of 4. The students were asked to work together to solve problems and Explore the topic distributed by the teachers in student worksheet. Each group member contributed by expressing what they know and understand to the group in order to obtain the same perception.

Students' active involvement also plays important role to accomplish the task given by the teachers and to follow the stages of inquiry learning activities. During the learning process, all groups in Class VIII-1 were enthusiastic to engage with the topic and each group members asked different questions related to the problem orientation in the student worksheet.

Each group member write presented their understanding related to the problem orientation and work together to formulate the problem in the worksheet. After that, they proposed a hypothesis relevant to the problem focus, each group member proposed their hypothesis based on their understanding. In the next step, they collected the data in order to confirm the hypothesis, whether or not their hypotheses were supported. They collected

data to support the hypotheses and drew a conclusion based on the hypothesis test result.

The behavioral theory views that behavioral changes occur as a result of interaction between stimulus given by the teachers and responses from the students. Thus, the learning process is a form of change that occurs in individuals as a result of interaction between stimulus and responses. The behavioral changes among students in Class VIII-1, VIII-2, VIII-3, and VIII-4 in SMPN 2 Kota Makassar may be accounted for by the stimulus given be teachers during the learning process. This finding is in line with (Slavin dalam Nahar, 2016:65) who state that learning process stems from the interaction between stimulus and response. Furthermore, the learning process may eventually generate changes in one's behavior. During the learning process, three elements are known to take place: (1) behavioral change, (2) experience, and (3) process (Gagne, 1984).

The observation result shows that students were actively engaged with the inquiry process in their group to finish the student worksheet. In measuring the communication effectiveness in inquiry learning process in SMPN 2 Kota Makassar, three indicators were applied: attraction, acceptability, and self-involvement.

The first indicator, i.e., attraction, refers to the students' interest in messages delivered by the teacher. The information was delivered using simple, easy-to-understand language. In this regard, 36.8% respondents agree that teachers use a good language to deliver the materials.

The second indicator, i.e., acceptability, refers to clarity of the messages delivered by the teachers visually, verbally, or in written. In its process, teachers distribute a student worksheet and a reference book to present the materials. 41.7% respondents agreed that the written and visual messages helped students understand the inquiry learning process.

The third indicator, i.e., self-involvement, denotes students' interest in messages delivered by teachers. The data showed that 50% respondents agreed that students present the materials in excellent manner. Thus students understand the materials.

The hypothesis test showed that the inquiry learning communication effectiveness positively and significantly affect the students' learning outcome, as indicated by the significance value of 0.000 (<0.05). The tcount value (9.334) was found to be higher than ttable (0.1637), indicating that the independent variable affects the dependent variable. Thus, the proposed hypothesis (H_a) was accepted.

This study is in line with the result reported by (Hikmah Ramadani, 2021), that the guided inquiry learning method positively and significantly affect the students' learning outcome. In the same vein (Putra et al., 2017) also report that the mindmap-assisted guided inquiry learning model significantly affect the students' learning outcome in Natural Science subject.

In this study, the implementation of inquiry learning method in Classes VIII-1, VIII-2, VIII-3, and VIII-4 of SMPN 2 Kota Makassar allowed students to directly engage with the learning process. According to Sanjaya (2008:306), the inquiry learning process includes several

stages including orientation, problem formulation, hypothesis development, data collection, hypothesis test, and drawing conclusion.

Students' direct involvement in the learning process is found to improve their critical thinking, as they are provided with opportunities to discover the answers to their problems. Students also proposed various answer based on their previous knowledge or experiences . From the constructivist perspective, students construct their knowledge based on their experience (Sugrah, 2019: 124).

When working on the student worksheet, some students gave their answer based on their experience related to sweat production, the topic of the student worksheet

In this regard, the learning process could be done through direct and indirect experience (Ruhimat et al., 2017:127). The former could be seen from students who conduct experiments, while the latter Could be seen from students who listen to teachers' explanation .

The inquiry learning method is proven to improve the students' learning outcome, As indicated by the students' test score that passed the minimum achievement criteria of ≥ 75. This result showed that the inquiry learning method is effective in improving students' learning outcome.

CONCLUSION

Teachers delivered the materials using an easy-to-understand language through effective interpersonal and group communication during the learning process. Students showed that they were interested in the material delivery, were enthusiastic in participating the learning process, the writing, figure, and the voice are sufficiently captured by the students.

The communication effectiveness in inquiry learning was found to affect the students' learning outcome in SMPN 2 Kota Makassar. Students' behavioral changes in this study were accounted for the teachers' stimulus during the learning process. In addition, students were highly enthusiastic in working on the student worksheet. The worksheet asked students to recall and write activities that produce sweat. This occurs because students possess experiences related to the excretion system.

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