



## Interpersonal Communication: Learning Strategies With Exelearning Still Relevant

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### ABSTRACT

Student learning outcomes in geography are generally not maximal and satisfactory, presumably because the learning process does not support students' understanding, that is, too much memorization, and they are not equipped with field practices. This study aims to determine: (1) the learning outcomes of students who are taught inquiry learning strategies using online exe-learning media compared to students who are taught inquiry learning strategies using offline exe-learning media; (2) the learning outcomes of students who have open interpersonal communication compared to students who have closed interpersonal communication; and (3) interaction between learning strategies using exe-learning media and interpersonal communication on student learning outcomes. The research method is quasi-experimental. The results showed: (1) the learning outcomes of students who were taught using inquiry learning strategies using online exe-learning media were higher than the learning outcomes of students taught using inquiry learning strategies using offline exe-learning media with a large influence; (2) the science learning outcomes of students who have open interpersonal communication are higher than the science learning outcomes of students who have closed interpersonal communication with the magnitude of the influence; and (3) there is the interaction between inquiry learning strategies using exe-learning media and interpersonal communication on students' science learning outcomes.

**Keywords:** Inquiry, Media Exe-Learning Online And Offline, Interpersonal Communication

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### INTRODUCTION

Using appropriate learning strategies, one solution that can be used to overcome low student learning outcomes is to use interactive learning media with computers. According to Wahyu (2019) the reasons for using computers as learning media are: experience, motivation, improving student achievement, authentic teaching materials, broader, more personal interactions, not fixated on a single source, and global understanding. With computer media, students become motivated to learn, with high learning motivation will encourage students to try to understand a teaching material to completion and this will improve student learning outcomes.

The application of interactive learning with computers is one of the variations in the use of modern learning media that can improve student learning outcomes. Learning with a computer function well as communication in conveying subject matter. Research by Dori, Y.J., Barak, M. and Adir (2003) concluded that the learning outcomes of students who were taught with computer media were higher than students who received learning without computer media. The results of Butar-butur's (2017) concluded that students who were taught with a computer animation program had higher learning outcomes compared to students who were taught without using a computer animation program. Furthermore, the research results of Sadiman, A., Raharjo, R., Haryono (1996) concluded that the use of computer media increased student learning outcomes on the subject of atomic structure by 21.38%.

To increase students' interest in science subjects, learning media can be used in learning and packaged into interesting and easy-to-understand lessons. Learning media can be used to build understanding and mastery of learning concepts. Some learning media that are often used in the teaching and learning process include print media, electronics, models, sketches, maps and diagrams (Silalahi, 2019).

According to Rakhmat (2014), the communication skills of each individual will influence the processes, activities and learning outcomes concerned and shape their personality. This means that in the learning process at school, including learning physics, it is necessary to have good communication between educators and students as well as communication between fellow students. Furthermore, according to Felber (2007), there is no effort that is more important for achieving success and satisfying human relations than learning the art of communicating.

In practice, learning activities in the classroom will run well and smoothly if supported by good communication between teachers and students and between fellow students. Delivery of information and messages of study materials can also be communicated through the presence of learning media, if supported by appropriate learning methods. According to Arsyad (2015), the choice of one learning method will affect the appropriate type of learning media even though there are various other aspects.

There are several definitions of learning according to experts, Amrullah (2019) stated that learning is shown by a change in behavior as a result of experience. In this case it is meant that learning is a change in behavior as a result of experience. So that the more experience a person has, the behavior will also change. And according to Replace (2019) learning is the relationship between stimulus and response that is created through a process of behavior. A person is considered to have learned if he is able to show changes in behavior. According to Karimah (2019) learning is a change that occurs in human ability after continuous learning, and not only caused by a growth process. Meanwhile, according to Hamalik (2019) Learning is also a relatively permanent change in behavior as a result or from past experience. So that the processes that occur in students continuously will have an impact on changes in behavior based on the experiences that have been passed.

Physics is one of the fields in Natural Sciences (IPA). Physics is a science that is born through the steps of observation, formulation of problems, preparation of hypotheses through experimentation, drawing conclusions and discovering theories and concepts. It can be said that the nature of physics is a science that studies phenomena through a series of processes known as scientific processes that are built on the basis of a scientific attitude and the results are realized as scientific products composed of the three most important components in the form of universally applicable concepts, principles and theories.

Farida (2018) defines learning strategies as all methods and procedures that focus on student activities in the teaching and learning process to achieve certain goals. In the context of learning strategies, the objectives to be achieved, the material to be studied, learning experiences and evaluation procedures are arranged.

Based on the various explanations above, it can be concluded that the learning strategy is a combination of the sequence of activities, methods, media and time used by teachers and students in a learning process to achieve predetermined results. In using learning strategies the main thing that must be considered is the characteristics of the learner. Elinawati (2019), states that student characteristics are aspects of the background of the learner's experience that influence the effectiveness of the learning process. Dick, W and Carey (2015), explained that the development of learning is very important considering the characteristics of students to choose an appropriate approach in learning activities.

The term media which is the plural form of medium literally means intermediary or introduction. But now the word is used in both the plural and the singular. Hendra (2019) defines media as all forms and channels for the process of transmitting information. Meanwhile, Arnas (2010) defines medium as a technology for presenting, recording, sharing and distributing symbols through certain sensory stimuli, accompanied by information structuring.

Educational media by the Commission on Instructional Technology (1970) is defined as media that was born as a result of the communication revolution that can be used for learning purposes besides teachers, textbooks, and blackboards. Gagne stated that educational media are various types of components in the student environment that can stimulate students to learn. Briggs stated that learning media is a means to provide stimulation for the learner so that the learning process occurs (Salminingsih, 2019).

The eXe program stands for elearning XHTML editor, which is a program used to create web-based teaching materials designed to make teaching materials easier and more interesting (Lindy, 2014). In the exelearning program, teachers can create web-based teaching materials without knowing HTML, even easier than web editors like Ms Frontpage. Another advantage of the exelearning program is WYSIWYG (what you see is

what you get), that is, what we design on the screen will produce the same results when published, it is free, is an open source application, e-learning standard (SCROM) and can be used in Microsoft Windows or linux (Devito, 2019). In the exelearning program, the teacher only opens the exelearning page, then fills it in with text, images, videos, then a table of contents is automatically formed which links to all pages (Mudjiono, 2016).

Exelearning learning media can be done online by connecting to the internet network. According to Wardiman (2001) online learning is an open and dispersed learning system using pedagogical tools (educational tools), made possible through the internet and network-based technologies to facilitate the formation of learning processes and knowledge through meaningful action and interaction. Online exe learning media can be interpreted as media that is equipped with a controller that can be operated by the user (user), so that the user (user) can control and access what the user needs, for example downloading resources for style material in science lessons. The advantage of using online learning media is that learning is independent and highly interactive, able to increase memory levels, provide more learning experiences, with text, audio, video and animation which are all used to convey information, and also make it easy to convey, update content, downloading, students can also send emails to other students, post comments on discussion forums, use chat rooms, to video conference links to communicate directly.

Akhmad (2018) said there are three components to online learning, namely: (a) learning models, (b) instructional and learning strategies, (c) online learning media. These three components form an interactive linkage, within which there is a learning model structured as a social process that informs the design of the online learning environment, leading to the specification of instructional and learning strategies that specifically enable learning to be facilitated through the use of learning technologies. In Figure 1 it can be seen that the three components are connected.

Devito (2019), states that interpersonal communication is "the process of sending and receiving messages between two persons, or among a small group of persons, with some effect and some immediate feedback" (the process of sending and receiving messages between two person or among a small group of people with some effect and some instantaneous feedback). Based on this definition, interpersonal communication can take place between two people who meet each other, for example between a student and a lecturer. Interpersonal communication is more effective if it runs dialogically, namely between two people who convey and give messages reciprocally.

Hendra (2019) defines interpersonal communication as a process of communication that takes place between two or more people face to face. Furthermore Sanjaya (2018) suggests interpersonal communication is the process of sending and receiving messages between two people or a small group of people with various effects and feedback. Furthermore Silalahi (2019) argues, interpersonal communication is the process of exchanging information between a person and at least one other person or usually between two people who can immediately know the feedback.

## METHOD

This research was conducted in class VIII of SMP Negeri 12 Padang City and SMP Negeri 13 Padang City, Indonesia. The population of this research is all class students. All samples have the same characteristics, meaning that each class does not have students who have never left a class, there are no superior classes, the average age of students is relatively the same, the average class scores are relatively the same based on the results of daily tests, using the same curriculum, so that all existing classes can be included as a population in the study.

The determination of the research sample was carried out in a random class (cluster random sampling), namely by drawing lots of classes from schools that would be sampled to carry out the treatment with a particular learning strategy. The results of the draw showed that class VIII-A as the first experimental class applied inquiry learning strategies using offline exe learning media, and class VIII-B as the second experimental class applied inquiry learning strategies using online exe learning media. Furthermore, from each class students are again grouped into two groups based on the interpersonal communication that students have, namely groups of students who have open interpersonal communication and groups of students who have closed interpersonal communication.

The method used in this study is a quasi-experimental method with a  $2 \times 2$  factorial design.

Data analysis techniques used in this study are descriptive analysis techniques and inferential analysis. Descriptive analysis techniques are intended to describe research data including the mean, standard deviation, highest score, lowest score, variance, median and mode. The data that has been obtained is then presented in the form of a frequency distribution table using Sturges' rule and in the form of a histogram.

Statistical inference analysis was performed to test the hypotheses. Before testing the hypothesis, a prerequisite test was first carried out on the data collected by using the normality and homogeneity tests. The normality test is intended to test whether the sample data obtained from the population has a normal distribution and the data normality test is carried out by the Lilliefors test. While the homogeneity test is intended to test whether the groups used as research samples come from the same population, meaning that their distribution in the population is homogeneous. Data homogeneity test was carried out by Fisher's test and Burlett's test.

After the prerequisites are met, the research hypothesis is tested using a two-way ANOVA technique with a factorial of  $2 \times 2$ . This is done to test the significance of one variable or a combination of two variables on the dependent variable. If the results of the calculated F statistic at the significance level  $\alpha = 5\%$  there is a difference in the average of the dependent variable of the two samples as a result of the independent variables, then the analysis will be continued with the Tukey's test.

To test the hypothesis, it is necessary to formulate the research hypothesis as follows:

1.  $H_0: \mu A1 \leq \mu A2$   
 $H_a: \mu A1 > \mu A2$
2.  $H_0: \mu B1 \leq \mu B2$   
 $H_a: \mu B1 > \mu B2$
3.  $H_0: \mu A >> \mu B = 0$   
 $H_0: \mu A >> \mu B \neq 0$

## RESULT AND DISCUSSION

### Finding

Table 2. Summary of Data Tabulation with  $2 \times 2$  Factorials

Interpersonal Communication	Strategies + Learning Media					
	Inquiry + Exelearning Online (A1)		Inquiry + Exelearning Offline (A2)		Total	
Open (B1)	$N_1$	= 18	$N_2$	= 23	$N_{B1}$	= 41
	$\Sigma X_1$	= 435	$\Sigma X_2$	= 506	$\Sigma X_{B1}$	= 941
	$\Sigma X^2_1$	= 10577	$\Sigma X^2_2$	= 11276	$\Sigma X^2_{B1}$	= 21853
	$\bar{x}_1$	= 24,17	$\bar{x}_2$	= 22,00	$\bar{x}_{B1}$	= 22,96
Close (B2)	$N_3$	= 21	$N_4$	= 16	$N_{B2}$	= 37
	$\Sigma X_3$	= 471	$\Sigma X_4$	= 323	$\Sigma X_{B2}$	= 794
	$\Sigma X^2_3$	= 10665	$\Sigma X^2_4$	= 6587	$\Sigma X^2_{B2}$	= 17252
	$\bar{x}_3$	= 22,43	$\bar{x}_4$	= 20,19	$\bar{x}_{B2}$	= 21,46
Total	$NA_1$	= 39	$NA_2$	= 39	$N_i$	= 78
	$\Sigma X_{A1}$	= 906	$\Sigma X_{A2}$	= 829	$\Sigma X_i$	= 1735
	$\Sigma X^2_{A1}$	= 21242	$\Sigma X^2_{A2}$	= 17863	$\Sigma X^2_i$	= 39105
	$\bar{x}_{A1}$	= 23,23	$\bar{x}_{A2}$	= 21,26	$\bar{x}_i$	= 22,24

Learning Outcomes Between Groups of Students Taught Inquiry Learning Strategies Using Online Exelearning Media and Offline Exelearning Media

The first statistical hypothesis is denoted as follows:

$$H_0: \mu A1 \leq \mu A2$$

$$H_a: \mu A1 > \mu A2$$

The results of tabulation and data analysis, the learning outcomes of students taught with inquiry learning strategies using online exe learning media obtained an average score = 23.23 higher than the learning outcomes of students taught with inquiry learning strategies using offline exe learning media with an average score = 21,26.

Furthermore, from the calculation results in Table 3, for the variance between columns (learning strategy using exelearning media) the value of  $F_{count} > F_{table}$  is  $14.95 > 3.96$  at the level of  $\alpha = 0.05$ . Thus accept  $H_a$  or reject  $H_0$  so it can be concluded that the learning outcomes of students who are taught with inquiry learning

strategies using online exe learning media are higher than students who are taught with inquiry learning strategies using offline exe learning media.

Based on the average score obtained by the two sample groups, it shows that learning science using inquiry learning strategies using online exe-learning media has a 9.3% higher effect than inquiry learning strategies using offline exe-learning media on students' science learning outcomes.

Learning Outcomes of Students who Have Open Interpersonal Communication with Students who Have Closed Interpersonal Communication The second statistical hypothesis tested is:  $H_0: \mu B1 \leq \mu B2$   $H_a: \mu B1 > \mu B2$

The results of tabulation and data analysis showed that the score of the group of students who had open interpersonal communication on average = 22.95 was higher than the group of students who had closed interpersonal communication with an average score = 21.46.

The results of the calculations in Table 4.16, for the variance between lines (interpersonal communication) obtained the value of  $F_{count} > F_{table}$ , namely  $8.52 > 3.96$  at the level of  $\alpha = 0.05$ . Thus accept  $H_a$  or reject  $H_0$  so it is concluded that the learning outcomes of students who have open interpersonal communication are higher than students who have closed interpersonal communication.

Based on the average score obtained by the two sample groups, it shows that open interpersonal communication has a 6.9% higher effect than closed interpersonal communication on students' science learning outcomes

Interaction Between Learning Strategies Using Exelearning Media and Interpersonal Communication Against Student Physics Learning Outcomes

The third statistical hypothesis tested is:

$$H_0: \mu A >> \mu B = 0$$

$$H_a: \mu A >> \mu B \neq 0$$

The results of the calculations in Table 3, for the interaction variance between learning strategies using exe-learning media and interpersonal communication, the value of  $F_{count} < F_{table}$  is  $3.34 < 3.96$  at the level of  $\alpha = 0.05$ . Thus rejecting  $H_a$  or accepting  $H_0$  so that it is concluded that there is no interaction between learning strategies using exelearning media and student interpersonal communication on student learning outcomes.

The results of the third hypothesis test stated that there was no interaction between learning strategies using exe-learning media and interpersonal communication

on student learning outcomes, so there is no need to do further testing to find out which average score has a higher influence on student learning outcomes.

The results of the tabulation and data analysis of the average student learning outcomes based on the interaction between learning strategies using exelearning media and interpersonal communication can be seen in Table 4.

**Table 4.** Average Student Learning Outcomes The Interaction Between Learning Strategies and Student Interpersonal Communication.

Interpersonal Communication	Learning Strategies	
	Inquiry + Exelearning Online (A1)	Inquiry + Exelearning Offline (A2)
Open (B1)	24,17	22,00
Close (B2)	22,43	20,19

The average learning outcomes of groups of students who have open interpersonal communication are taught inquiry learning strategies using online exe learning media (24.17) higher than the learning outcomes of the other three groups of students namely students who have closed interpersonal communication are taught inquiry learning strategies using exe learning online media (22,43); students who have open interpersonal communication are taught inquiry learning strategies using offline exe learning media (22.0) and students who have closed interpersonal communication are taught inquiry learning strategies using offline exe learning media (20.19).

If seen from the average learning outcomes of students who have closed interpersonal communication taught inquiry learning strategies using online exe learning media (22.43) are not significantly different from the average learning outcomes of students who have open interpersonal communication taught inquiry learning strategies using exe learning media offline (22.0). This gives an indication that the group of students who have closed interpersonal communication even though they are taught with inquiry learning strategies using online exe learning media does not mean that the learning outcomes they get are higher than the group of students who have open interpersonal communication if taught inquiry learning strategies using offline exe learning media. While the learning outcomes of groups of students who have open interpersonal communication are taught with inquiry learning strategies using exe learning media offline (22.0) and groups of students who have closed interpersonal communication are taught inquiry learning strategies using online exe learning media (22.43) are higher than learning outcomes groups of students who have closed interpersonal communication are taught with inquiry learning strategies using offline exe learning media (20,19).

## Discussion

The conclusions from the results of this study, as well as supporting the results of Hidayat's research (2016), which concluded that the use of e-learning (online information delivery) in the learning process can increase student motivation so that it fosters student enthusiasm in participating in learning activities carried out and is able to encourage students to achieve higher learning outcomes. Furthermore, the results of Minarti's research (2001) concluded that the use of the internet as a source of student learning has a positive influence on improving the results of learning history for class XI students of the social studies program at SMA Negeri 1 Glagah Banyuwangi.

The conclusions from the results of this study are also reinforced by the opinion of who argue that online learning is an open and dispersed learning system using pedagogical devices (educational aids),

made possible through the internet and network-based technologies to facilitate the formation of learning and knowledge processes through meaningful action and interaction. Learning by using online learning media makes learning independent and highly interactive, able to increase memory levels, provide more learning experiences, with text, audio, video and animation which are all used to convey information, and also make it easy to convey, update content, download, students can also send emails to other students, post comments on discussion forums, use chat rooms, to video conference links to communicate directly.

During the learning process from the results of research monitoring, the overall learning process with inquiry learning strategies using online exe learning media makes students more active in learning activities, starting from formulating problems, formulating hypotheses and searching, finding and collecting data or information by accessing and downloading material from various sources via the internet to solve the problems that have been formulated. During the learning process students are also active in asking and working on random questions so that there is no opportunity for students to see each other or copy other students.

While the groups taught with inquiry learning strategies used offline exe learning media, students also seemed active in formulating problems, hypotheses and collecting data only from teacher information or information that already existed in the exe learning program, students could not access or download via the internet. Overall, students actively ask only about existing materials and work on the same questions for each student (not randomly assigned) so that there is a possibility for students to share information (cheat) to solve problems. Based on observations in the field, it appears that groups of students taught with inquiry learning strategies using online exe learning media appear to be more active and enthusiastic in solving learning problems given by the teacher compared to groups of students taught with inquiry learning strategies using offline exe learning media.

The conclusions from the results of this study are also supported by the opinion of Akhmad (2018), who argues that the communication skills of each individual will influence the processes, activities and learning outcomes concerned and shape their personality. This means that in various activities a person cannot be separated from communication activities. Interpersonal communication is communication that takes place between two people who have a steady and clear relationship, for example the teacher-student communication relationship and the student-student communication relationship. Someone who has open interpersonal

communication can carry out relationships and various activities including in learning, such as asking questions, answering questions, submitting opinions, respecting other people's ideas or opinions and so on.

Interpersonal communication plays a role in transferring messages/information from one person to another in the form of ideas, facts, thoughts and feelings. Therefore, interpersonal communication is a bridge for every individual including students, where they can share feelings, knowledge and strengthen relationships between individuals in their environment. Interpersonal communication also always creates mutual understanding or mutual influence between a person and another person.

Students with open interpersonal communication characteristics are those who are sociable, active, optimistic, passionate, lively, have high empathy, sympathy and persuasion. While the characteristics of closed interpersonal communication have characteristics that are difficult to get along with, happy to be alone, indifferent, pessimistic, passive, quiet and difficult to adapt to other people. The differences in the characteristics of interpersonal communication certainly have an influence on the achievement of student learning outcomes.

The results of the research that has been carried out reject (do not support) the results of previous research conducted by Hendra (2019), which concluded that there is an interaction between the use of interactive learning media and interpersonal communication in influencing student chemistry learning outcomes. The results of Hendra (2019), obtained that groups of students who have open interpersonal communication get higher chemistry learning outcomes when taught using online interactive learning media rather than using offline interactive learning media, while students who have closed interpersonal communication have higher learning outcomes if taught with offline interactive learning media instead of using online interactive learning media.

Based on Gestalt learning theory (insightful learning theory), learning is essentially the result of a process of interaction between individuals and their surroundings. Learning is not merely an attempt to respond to a stimulus. But more than that, learning is done through various activities such as experiencing, doing, and understanding through a process or learning by process (Sanjaya, 2018). Good learning can happen through a process. The learning process can take place well if it is done with good and proper planning. In planning a lesson, it requires the ability of a teacher to be able to understand the characteristics of students, the material being taught, the learning model to be used and the learning media that can support the learning process.

Based on the research findings and hypothesis testing, it shows that there is no interaction between inquiry learning strategies using exelearning media (online and offline) and interpersonal communication (open or closed) on student learning outcomes (Abct, 1987). However, by slightly ignoring the interaction factor in students' interpersonal communication, it shows that the use of inquiry learning strategies using online exe learning media has proven to have a higher and significant influence on student learning outcomes, compared to the use of inquiry learning strategies using offline exe learning media. Likewise, by slightly ignoring the interaction factor in the use of inquiry learning strategies using exelearning media, it shows that open interpersonal communication owned by students has a higher and significant influence on student learning outcomes compared to closed interpersonal communication owned by students (Akhmad, 2018).

Thus, from the results of research findings, hypothesis testing, theories and relevant research results it is evident that the use of inquiry learning strategies using exe-learning media (online and offline) and interpersonal communication (open or closed) owned by students, separately affects the results student learning, but interactively or simultaneously it is obtained that there is no interaction of the influence of inquiry learning strategies using exe-learning media and interpersonal communication owned by students on student learning outcomes (Indra, 2019).

## CONCLUSION

The learning outcomes of students who are taught with inquiry learning strategies using online exe-learning media are higher than the learning outcomes of students who are taught with inquiry learning strategies using offline exe-learning media. Inquiry learning strategies using online exe learning media have a higher effect than inquiry learning strategies using offline exe learning media on student learning outcomes. Even though this effect was not too big, the students' abilities after being taught inquiry learning strategies using online exe learning media in solving test questions were better than students' abilities after being taught with inquiry learning strategies using offline exe learning media. The learning outcomes of students who have open interpersonal

communication are higher than the learning outcomes of students who have closed interpersonal communication. Open interpersonal communication owned by students gives as much influence as compared to students who have closed interpersonal communication on students' science learning outcomes. Although the effect is not too big, students who have open interpersonal skills are able to complete the test well compared to students who have closed interpersonal communication. There is no interaction between inquiry learning strategies using exelearning media and interpersonal communication on student learning outcomes. This gives an indication that students who have open interpersonal communication when taught with inquiry learning strategies using offline exe learning media are not necessarily better than students who have closed interpersonal communication even though they are taught with inquiry learning strategies using online exe learning media.

### References

- A, K. (2019). *Indonesian Language Learning Innovation with Image Media*, Bandar Lampung: Postgraduate in Educational Technology, Faculty of Teacher Training and Education.
- Abct. (1987). *Definition of Educational Technology: Definition and Termonology Task Force*.
- Akhmad, S. (2018). *Memahami pendekatan, Strategi, Metode, Teknik, Taktik, dan Model Pembelajaran*. [Http://Psb-Psma.Org/Content/Blog/Pemahaman-Strategi-Metode-Teknik-Tactics-and-Learning-Model](http://Psb-Psma.Org/Content/Blog/Pemahaman-Strategi-Metode-Teknik-Tactics-and-Learning-Model).
- Amrullah. (2019). *Utilization of Physics Games as Learning Media in an Effort to Overcome Low Motivation and Learning Outcomes of Physics for Class IX Students of SMP Negeri 2 Gelumbang on the Subject of Magnetism*.
- Arnas, A. (2010). *The Influence of Using Comic Media on Students' Motivation and Learning Outcomes of Class XI on the Subject of Atomic Structure and Periodic System of Elements*. Unpublished thesis.
- Arsyad, A. (2015). *PEMBELAJARAN Media*.
- Devito, J. . (2019). *Human Communication Fifth Edition*. Translated by Maulana, Agus,.
- Dick, W and Carey, L. (2015). *The Systematic Design Of Instruction Six Edition*.
- Dori, Y.J., Barak, M. and Adir, N. (2003). A W`eb-based chemistry course as a means to foster freshman learning. *Journal of Chemical Education*, 80(9), 1084–1092.
- Elinawati. (2019). *Pengaruh Strategi Pembelajaran dan Komunikasi Interpersonal Terhadap Hasil Belajar Pendidikan Agama Islam Di SMP Negeri 3 Rantau Utara Kabupaten Labuhan Batu*. Tesis.
- Felber, T. (2007). *Practical Communication Tips*.
- H, F. (2018). *Upaya Peningkatan Motivasi dan Hasil Belajar Mata Pelajaran Ekskresi Kelas XI IPA Melalui Metode Pembelajaran Kontekstual di Madrasah Aliyah Ma'Ahid Kudus Tahun Pelajaran 2007/2008 Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Surakarta*.
- Hamalik, O. (2019). *Teaching and Learning Process*.
- Hendra. (2019). *Penggunaan Media Pembelajaran Interaktif dan Komunikasi Interpersonal Terhadap Hasil Belajar Kimia*, *Jurnal Teknologi Pendidikan*.
- Indra, M. (2019). *Hasil Belajar Pengertian dan Pengertian*.
- Lindy, P. (2014). *How to Motivate Children to Learn*.
- Mudjiono, D. &. (2016). *Belajar dan belajar*.
- R, B.-B. (2017). *The Influence of the Use of Computer Animation Programs on the Motivation and Learning Outcomes of Chemistry Students of State Senior High Schools in Sibolga City*. Unpublished thesis.
- Rakhmat, J. (2014). *Communication Psychology*.
- Replace, M. . (2019). *The relationship between work motivation, emotional intelligence and interpersonal communication with the effectiveness of class management for vocational teachers in Simalungun Regency, Tabularasa*. *PPS Unimed Education Journal*.



- Sadiman, A., Raharjo, R., Haryono, A. and R. (1996). *Media Education Definition, Development, and Utilization*,.
- Salminingsih. (2019). *The Relationship between Knowledge and Use of ICT-Based Learning Media and Learning Effectiveness*, Unpublished thesis.
- Sanjaya, W. (2018). *Learning in Competency-Based Curriculum Implementation*.
- Silalahi, S. . (2019). *Concept Map Media in Teaching Reaction Rate in First Year Students of FPMIPA*.
- Wahyu, P. (2019). *No Title Overview of the use of eLearning XHTML editor*.
- Wardiman. (2001). *Strategic Plan for Vocational Secondary Education*.