

Collaborative learning to improve communication skills in information and communication technology subjects

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ABSTRACT

The process of learning and teaching in vocational schools must be standardized to the needs. Learning models, methods and media must support mastery of communication skills (Communication Skill). The aim of this research is to find out how effective the use of E-learning and Collaborative Learning is to improve Communication Skill on information and communication technology. Linearity test concluded that there is a significant linear relationship between each independent variable (Use of E-front and Collaborative Learning) with Improved Communication Skill. The normality test to get the results of the research data is not normally distributed, so the data is included in non-parametric statistics and uses the Mann-Whitney U test to get results that between the research class and the control class there are differences in learning outcomes in information and communication technology

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1. INTRODUCTION

One of the problems faced by our education world is the low quality of education both in terms of the ongoing educational process and the products of education itself (Maqbulin, 2020). From the educational process especially learning most of our teachers are more likely to instill subject matter that rests on one low-level cognitive aspect such as remembering, memorizing and accumulating information (Wahyudi, 2020).

H The low quality of educational products is a picture of the quality of the process of implementing an education system where there are many elements, but the teaching and learning process is the heart of education that must be taken into account because it is on these learning activities that the transformation of various concepts, values and educational materials are integrated (Setiawan, A., & Chandra, 2022).

In line with the development of science and technology, Communication Technology has experienced very rapid progress and has an effect on communication patterns in society (Daniati et al., 2022). Creation of communication technology instruments such as satellites, tv, radio, video-tape and computers gives its own meaning to the process of communication between people (Marfuah, 2017). As well as Technology in general, communication technology does not know the boundaries of regions, ideologies, religions and ethnic groups in the sense that technology has drastically reduced distance in time and space (Wahyudi et al., 2021).

The increasing demands of society for education and the advancement of science and technology, make it impossible for education to be managed only through traditional patterns,

besides this method is no longer in accordance with the needs and demands of society, Understanding how children learn, advances in communication media and so on give their own meaning to educational activities and these demands are also what make wisdom to utilize technological media and technological approaches in the management of education (Wardani et al., 2019). The use of communication technology, educational technology and educational media for educational activities is necessary in the framework of teaching and learning activities (Amelia Chandra et al., 2021). Because with a scientific, systematic and rational approach, as required by this educational technology as well, the purpose of education effective and efficient will be achieved (Yuliana, 2018).

In the present era, the development of educational technology has been rampant, Even the frequency of interaction between teachers and students is less due to the sophistication of educational technology (Widiatmika et al., 2019). One of the developments of Information Technology used in the world of education is computers and the Internet (Fitriyanti et al., 2021). Where the use of information technology is inseparable and must synergize so that it can be used to support learning activities (Pattipeilohy & Wijaya, 2020).

The use of ICT in education in Indonesia has a long history. The initiative to organize educational radio broadcasts and educational television as an effort to disseminate information on the unity of educational units spread throughout the archipelago, is a form of awareness to optimize the use of technology in helping the community education process (Sekarinasih, 2022).

Thus Technology in education can be interpreted as a systematic way of designing, implementing and assessing the entire teaching process in relation to specific goals that have been set (Daniati et al., 2022). Education in schools also requires ICT as a means of teaching and learning programs. Schools are places of learning provided in schools not only general science (science that is only for UNAS), but also special science (Sudarman, 2003).

Therefore, the presence of ICT in this school is very helpful for students in learning, especially in the use of ICT in this school is very lacking in computer mastery triggered by a lack of educators in the field of ICT and in this school teachers do not use computers when continuous learning in the classroom, computers in this school are only as subjects that are scheduled once a week for two class hours, so that students only listen to the teacher's explanation without media. In addition, students also lack mastery of computers and the internet (Pattipeilohy & Wijaya, 2020).

2. RESEARCH METHOD

(Wahyudi et al., 2022) Research includes providing definitions of problems, formulating hypotheses or interim answers, making conclusions and at least conducting careful testing of all conclusions to determine whether they fit the hypothesis.

1) Types of Research

Judging from the title of the research, the research used here is a type of quantitative research, that is, this approach departs from a theories, ideas of experts or developed into problems and along with its solutions that are proposed to obtain the truth in the form of supporting field empirical data and also require statistical analysis, namely by using numbers to achieve the truth of the hypothesis (Setiawan, A., & Chandra, 2022). The numbers here have a very important role in the creation, use and problem solving of the model Quantitative.

2) Population and Sample

a. Population Determination Is the whole subject under study, whether in the form of objects, events, values, and things that happen. While the population is in This research is all students of SMP Swasta Kesuma Bangsa, Padang Lawas Regency.

b. Samples

The sample is a portion of the population to be studied or It can also be called a miniature population. In this study, researchers used sample research with sampling techniques, namely Purposive Sample, which is sampling based on a specific purpose. Samples in population this is Kesuma Bangsa Private Junior High School, Padang Lawas Regency.

3) Data Type

The Data Types used are:

- a. Qualitative Data Is Data that is not in the form of numbers or data that is related to certain categorizations, characteristics, or properties. In this case, it is about an overview of the object of research, namely an overview of class IX of Kesuma Bangsa Private Junior High School, Padang Lawas Regency.
 - b. Quantitative Data Is data related to numbers. In this case, data related to the ins and outs of the use and development of ICT and learning achievement of Class X Engineering students of Kesuma Bangsa Private Junior High School, Padang Lawas Regency.
- 4) Data Source
Data is as known or considered. Data by its nature can be classified into two. The data sources of this study are:
- a. Human beings, including: Principal, Class Teacher Student
 - b. Non-human, including: Books that are in accordance with the discussion as supporting data and Documents - documents that are in accordance with student personal data.
- 5) Data Collection Techniques
The necessary data collection efforts can be through several kinds of techniques. Among the techniques used include:
- a. Interviews
Namely Data collection by asking directly (face toface) with respondents. The target in this interview technique is the principal, ICT teachers and also class IX students Kesuma Bangsa Private Junior High School, Padang Lawas Regency.
 - b. Observation is a systematic observation and recording of the phenomena under investigation. In this observation, the author as an observer plays a complete role, where the observer becomes a full member of the group that observed, so that the observer can take the data clearly. This observation is intended for principals and ICT teachers at Kesuma Bangsa Private Junior High School, Padang Lawas Regency.
 - c. Documentation
Namely Data collection based on records, transkip, books, newspapers, magazines, inscriptions, meeting minutes, agendas and as an idology. This method of documentation is used by the author to obtain data on the state of students, teaching staff, school administration, school organizational structure, facilities and infrastructure, activities related to the application of ICT.
 - d. Questionnaire/Questionnaire Is a Method that uses a number of item questions, a number of written questions that are used to obtain information from respondents. In this method, those who were given the questionnaire were students of Kesuma Bangsa Private Junior High School class IX for know the application of ICT.
- 6) Data Analysis Techniques In analyzing data using descriptive methods that The data is from the questionnaire, where the questionnaire is distributed to students. After The questionnaire data is completed or collected again, so the next step is for researchers to concentrate each item into a table.

3. RESULTS AND DISCUSSIONS

- 1) Implementation of the Use of Information and Communication Technology
Data analysis regarding the application of ICT was taken from the results of the questionnaire which was distributed to 30 respondents (students). To obtain data on the Application of Information Technology and Communication (ICT) using a questionnaire of 10 items each with alternative answers. The techniques used to calculate the results of the questionnaire are:
- a. For answer A is given a grade of 3
 - b. For answer B is given a value of 2
 - c. For answer C is given a value of 1
- For more details, the author presents data on the results of the questionnaire that the author has distributed to 30 respondents (30 students).
The results of the questionnaire are: student number 1 with a total score of 24, student number 2 with a total score of 27, student number 3 with a total score of 20, student number 4 with a total score of 22, student number 5 with a total score of 25, student number 6 with a total score

of 23, student number 7 with a total score of 25, student number 8 with a total score of 26, Student number 9 with a total score of 23, student number 10 with a total score of 27, student number 11 with a total score of 24, student number 12 with a total score of 24, student number 13 with a total score of 28, student number 14 with a total score of 24, student number 15 with a total score of 22, student number 16 with a total score of 26, student number 17 with a total score of 25, student number 18 with a total score of 25, student number 19 with a total score of 25, student number 20 with a total score of 25, student number 21 with a total score of 25, student number 22 with a total score of 25, student number 23 with a total score of 25, student number 24 with a total score of 24, student number 25 with a total score of 26, student number 26 with a total score of 24, Student number 27 with a total score of 26, student number 28 with a total score of 25, student number 29 with a total score of 29, and student number 30 with a total score of 30.

From the results of the questionnaire on the application of Information and Communication Technology:

- a. The first answer can be known 63.3% of students answered very familiar with computers, 30% answered quite understanding and 6.7% answered no.
 - b. The second answer can be known 46.7% often use the Computer in teaching, 36.6% sometimes and 16.7% answer no.
 - c. The third answer 53.3% answered well in understanding ICT lessons, 40% sufficient and 6.7% less.
 - d. The fourth answer 56.7 % answered well that the teacher mastered the material presented, 33.3 % is sufficient and 10 % less.
 - e. The fifth answer 43.3 % answered both the material presented using ICT, 43.3 % sufficient and 13.4 % less.
 - f. The sixth answer is known that 63.3% answered yes always actively following ICT lessons, 23.3 % sometimes and 13.4 % no.
 - g. The seventh answer 60% answered yes comfortably as long as receiving ICT material, 26.6% is sufficient and 13.4% is not.
 - h. The eighth answer 86.7 answered understanding of the internet, 13.3% less and 0% answered not understanding.
 - i. Ninth answer 60% answered yes ICT as a support for the learning process, 30% ordinary and 10% no.
 - j. The tenth answer 66.7 % answered both the relationship of educators with learners, 26.7 % sufficient and 6.6 % less.
- 2) Data on the results of the Student Learning Achievement questionnaire
- a. The answer to the first question questionnaire is known to 53.3% of students often ask if they do not understand what is being explained, 26.7% sometimes and 20% do not.
 - b. The second answer 70% of students answered easily understand the lesson, 16.7% less and 13.3% no.
 - c. Third answer 53.3% of students answered increased learning achievement with ICT, 26.7% less, 20% no.
 - d. The fourth answer was 60% good about the activity of combining the material with the school environment, 26.7% sometimes and 13.3% not.
 - e. The fifth answer was 73.3% yes having difficulty in following the learning process with ICT, 16.7% sometimes, 10% no.
 - f. The sixth answer is 80% able to apply in everyday life, 10% is sufficient and 10% is not.
 - g. The seventh answer was 80% of students scored a test score above 85, 10% of students scored 65-84 and 10% of students scored 65.
 - h. The eighth answer was 80% of students scored UTS above 85, 10% of students scored 65-84 and 10% of students scored 65.
 - i. Answer to Nine 80% of students are always present on time, 10% sometimes and 10% of students are not.

- j. The tenth answer is 80% of the average report card score above 9, 13.3% average 8-9 and 6.7% average score below 8.
- 3) Data analysis from the Questionnaire Results.
- a. Data analysis from the results of the questionnaire on the application of Information and Communication Technology (ICT). To find out data on the application of information and communication technology, researchers use the percentage formula.

$$P = \frac{F}{N} \times 100 \%$$

$$P = \frac{63,3 + 46,7 + 53,3 + 56,7 + 43,3 + 63,3 + 60 + 86,7 + 60 + 66,7}{10} \times 100 \%$$

$$P = \frac{600}{10} \times 100 \%$$

$$P = 60,00\%$$

Such results are interpreted in accordance with the results of the standards occupying 60% position which means it's pretty good.

- b. Analysis of data from the results of the questionnaire on student understanding and achievement.

$$P = \frac{F}{N} \times 100 \%$$

$$P = \frac{53,3 + 70 + 53,3 + 60 + 73,3 + 80 + 80 + 80 + 80 + 80}{10} \times 100 \%$$

$$P = \frac{709,9}{10} \times 100 \%$$

$$P = 70,99\%$$

The percentage amount is 70.99% and the result is interpreted into a standard result that occupies a position of 56% - 75% which means it is quite good.

4. CONCLUSION

There is a difference in the value between the value of Application of Information and Communication Technology and student achievement scores after using ICT by occupying a position of 60%, which means quite good. From the statistical results, learning in class gets a better improvement than not using Information and Communication Technology with a total percentage of 70.99%, it is concluded that learning using ICT improves student achievement. Based on the conclusions above, then learning should be done carefully. Collaborative learning can be used as a pattern in designing learning. Enter for future learning lecturers and teachers who will teach are expected to be more varied in the use of learning models.

REFERENCES

Amelia Chandra, D., Santosa, F., Wahyudi, S., Teknologi Informasi, P., Rokania, S., Raya Pasir Pengaraian, J., Samo, R., & Rokan Hulu, K. (2021). Penerapan Metode Item Based Collaborative Filtering Berbasis

- Web Pada Recommender System Laptop. *Engineering And Technology International Journal Juli*, 3(2), 2714–2755. <https://doi.org/10.55642/eatij.v3i02>
- Daniati, S., Saputri, N., & Gatrimananda, Z. (2022). Efektivitas Model Pembelajaran Collaborative Teamwork Learning (CTL) Berbasis Praktikum pada Mata Kuliah Rias Fantasi untuk Meningkatkan Softskill Mahasiswa. *TEKNOBUGA: Jurnal Teknologi Busana Dan Boga*, 10(2), 140–149. <https://doi.org/10.15294/teknobuga.v10i2.37277>
- Fitriyanti, F., Laras, I. S., Khasanah, K., Anita, I. D., & Rahmawati, F. (2021). Implementasi Metode Collaborative Learning Dalam Pembelajaran Statistika Untuk Meningkatkan Keterampilan 4C (Critical And Problem Solving Skills, Collaboration Skills, Communication Skills, And Creativity And Innovation Skills) Pada Siswa Kelas XI. *Edunesia: Jurnal Ilmiah Pendidikan*, 2(1), 249–259. <https://doi.org/10.51276/edu.v2i1.115>
- Maqbulin, A. (2020). The Use of Information and Communication Technology (ICT) in English Teaching for Islamic Senior High Schools in Nganjuk. *Inovasi-Jurnal Diklat Keagamaan*, 14(3), 170–179. <https://doi.org/10.52048/inovasi.v14i3.163>
- Marfuah, M. (2017). Improving Students' Communications Skills Through Cooperative Learning Models Type Jigsaw. *Jurnal Pendidikan Ilmu Sosial*, 26(2), 148. <https://doi.org/10.17509/jpis.v26i2.8313>
- Pattipeilohy, V., & Wijaya, F. (2020). Implementasi Model Collaborative Learning: Sebagai Landasan Untuk Membangun Keterampilan Sosial Dan Keaktifan Mahasiswa. *Maneksi*, 9(1), 283–289.
- Sekarinasih, A. (2022). Implementasi Metode Collaborative Learning untuk Meningkatkan Keterampilan Interpersonal Mahasiswa. *Quality*, 10(1), 1. <https://doi.org/10.21043/quality.v10i1.13830>
- Setiawan, A., & Chandra, D. A. (2022). Study Program Selection Modeling With Simple Additive Weight (SAW) Method. *Engineering And Technology International Journal*, 4(1), 8–15. <https://doi.org/10.55642/eatij.v4i01.160>
- Sudarman. (2003). Penerapan Metode Collaborative Learning untuk Meningkatkan Pemahaman Materi Mata Kuliah Metodologi Penelitian. *Journal of Social Sciences*, 3(1), 94–100. <https://jurnaljpi.files.wordpress.com/2009/09/vol-3-no-2-sudarman.pdf>
- Wahyudi, S. (2020). Pengembangan Sistem Informasi Klinik Berbasis Web (Studi Kasus : Klinik Surya Medika Pasir Pengaraian). *Riau Journal OfComputer Science*, 06(01), 50–57.
- Wahyudi, S., Astuti, A., & Harahap, Y. M. (2021). Pengaruh Pemanfaatan Video Pembelajaran Terhadap Hasil Belajar Siswa SMK Negeri 1 Rambah Samo Dalam Mata Pelajaran Sistem Komputer Kelas X Teknik Komputer Dan Jaringan. *Journal of Ict Applications and System*, 1(1), 14–22. <https://doi.org/10.56313/jictas.v1i1.11>
- Wahyudi, S., Efendi, Amelia Chandra, D., & Lubis, A. (2022). Creating Interactive Learning Media On The Adobe Animate 2021 Application As A Means Of Learning Graphic Design At SMA Negeri 3 Tambusai Utara. *Journal of Ict Applications and System*, 1(2), 86–90. <https://doi.org/10.56313/jictas.v1i2.194>
- Wardani, D. T. K., Azizurrohman, M., & Tanthowy, A. H. (2019). the Effect of Information and Communication Technology (Ict) on Indonesian Bilateral Trade With Asean Countries. *Buletin Ilmiah Litbang Perdagangan*, 13(2), 187–210. <https://doi.org/10.30908/bilp.v13i2.421>
- Widiatmika, I. M., Suharta, I. G. P., & Pasek Suryawan, I. P. (2019). Meningkatkan Kemampuan Komunikasi Matematis Siswa Melalui Penerapan Creative Problem Solving. *Jurnal Pendidikan Matematika Undiksha*, 10(2), 1. <https://doi.org/10.23887/jjpm.v10i2.19905>
- Yuliana, N. (2018). PENGGUNAAN MODEL PEMBELAJARAN DISCOVERY LEARNING DALAM PENINGKATAN HASIL BELAJAR SISWA DI SEKOLAH DASAR. *PPs Universitas Pendidikan Ganesha JIPP*, 2.