



Proceeding SYMBION (Symposium on Biology Education)

<http://seminar.uad.ac.id/index.php/symbion>

2540-752X (print) | 2528-5726 (online)



Study of Communication Skills Analysis of SMK Students in Science Subjects with the Application of Problem-Based Learning Models

Melti Lorenza^{a, 1,} *; Dias Setyawan^{b, 2,} ; Ulfia Perdani^{c, 3,}

^a SMKS Muhammadiyah Cerenti, Kuantan Singingi, Indonesia

^b SMP IT Ibnu Hafidz, Subang, Indonesia

^c SMAN 1 Rakit Kulim, Indragiri Hulu, Indonesia

¹ meltiorenza99@gmail.com*; ² diasetyawan@gmail.com; ³ perdaniulfia@gmail.com

* Corresponding author

ARTICLE INFO

Article history

Submission Dec 10th, 2022

Revision May 10th, 2023

Accepted May 17th, 2023

Keyword

Communication Skills

Vocational Students

Problem-Based Learning

ABSTRACT

Communication is a skill needed by students to prepare for social life. This study aims to analyze the communication skills of Vocational High School students by implementing the Problem Based Learning model. This type of research is a classroom action research (CAR) consisting of two cycles. The research was conducted at one of the vocational schools in the Cerenti District, Kuantan Singingi Regency. The subjects of this study were 24 students, consisting of 20 female and 4 male students. Data collection technique using observation assisted by two observers. The results showed that there was an overall improvement in aspects of communication skills from cycle one to cycle two. Based on these results, applying the Problem Based Learning model can improve the communication skills of Vocational High School students.

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



Introduction

Some terms such as information, computing, automation, and communication can describe living conditions in the 21st century. The characteristics of the 21st century, according to the Ministry of Education and Culture, are the rapid development of information technology, the use of machines to handle various routine jobs automatically, and communication that can be done from anywhere and anytime. In short, the 21st century is a century of digitalization that brings various changes in every aspect of life. Human life in the 21st century has undergone many changes that demand an increase in the quality of human resources in order to compete globally. In the education sector, these changes are marked by a curriculum, learning models, media, and technology changes¹.

Communication is fundamental because every human being, both primitive and modern, communicates to maintain an agreement on various social rules². In the learning process, communication is useful as a process of distributing ideas or information to others, respecting the opinions of others, and listening to arguments presented by others³. Communication in

learning is a reciprocal relationship between teacher and student in a teaching system ⁴. Communication in learning is a reciprocal relationship between teacher and student in a teaching system. Therefore, the ability to communicate is an important requirement in the learning process to facilitate students expressing ideas and exchanging information with teachers or fellow students.

The Organisation for Economic Co-operation and Development (OECD) ⁵ explained that communication skills are the ability to express themselves both in written and oral form and understand the meaning of other people's statements orally or in writing. Communication skills become very important because everyone needs to express ideas, help structure thoughts, and are the basis for solving problems.

Communication skills have a role in the learning process and when students interact in society in the environment around the house. Practicing communication skills can be done at the time of classroom learning. Facilitating students so that they can practice communication skills is expected to provide a more meaningful learning experience. One of the learning models that can be used is Problem-based learning.

on the results of preliminary observations in class X of Accounting, it was found that most students were less actively involved in learning. During discussions, only a few students actively ask, answer, or express opinions. Students also seem less interested in following the lesson, so they ignore what the teacher says. Carried-out learning has an impact on the completeness of student learning outcomes.

Problem-based learning emphasizes problems so students can find solutions to problems given by the teacher. Expressing opinions regarding solutions and discussions is not only through written media. However, it can be modified by allowing students to convey their ideas directly. This study aimed to determine the effect of implementing the Problem-based learning model on students' communication skills.

Method

This research was carried out at one of the vocational schools in Cerenti District, Kuantan Singingi Regency, for the 2022/2023 academic year in the odd semester. The research was carried out in science subjects class X Accounting. The sample of this study was 24 students grouped into four groups. The research time was carried out in October-November 2022.

This study used a class action research design, which then quantitative data was analyzed by percentage analysis. Data collection techniques are carried out by assessing students' communication skills through observers in each cycle. The assessment of communication skills is carried out with two observers. The Observer scores a Likert scale of 1-4 on each communication skill. The communication skills measured are oral communication, receptive communication, communication strategy, differentiating intent, communicating for goals, and presentation skills. The percentage result on cycle one is compared to the second cycle result.

Results and Discussion

This classroom action research was conducted at one of the Vocational High Schools in Cerenti District, Kuantan Singingi Regency. The research was carried out in class X of Accounting in science subjects, with 24 students. The implementation of learning in each cycle is carried out in the stages of planning, implementing, observing, and reflecting. Teachers carry out stages to obtain maximum learning results to achieve learning targets. The results of communication skills based on the implementation of two learning cycles in class X of science students have increased. Data on improving students' communication skills can be viewed based on each of the indicators of (a) oral communication, (b) receptive communication, (c)

communication strategies, (d) differentiating intentions, (e) communicating for a purpose and (f) presentation skills in Figure 1.

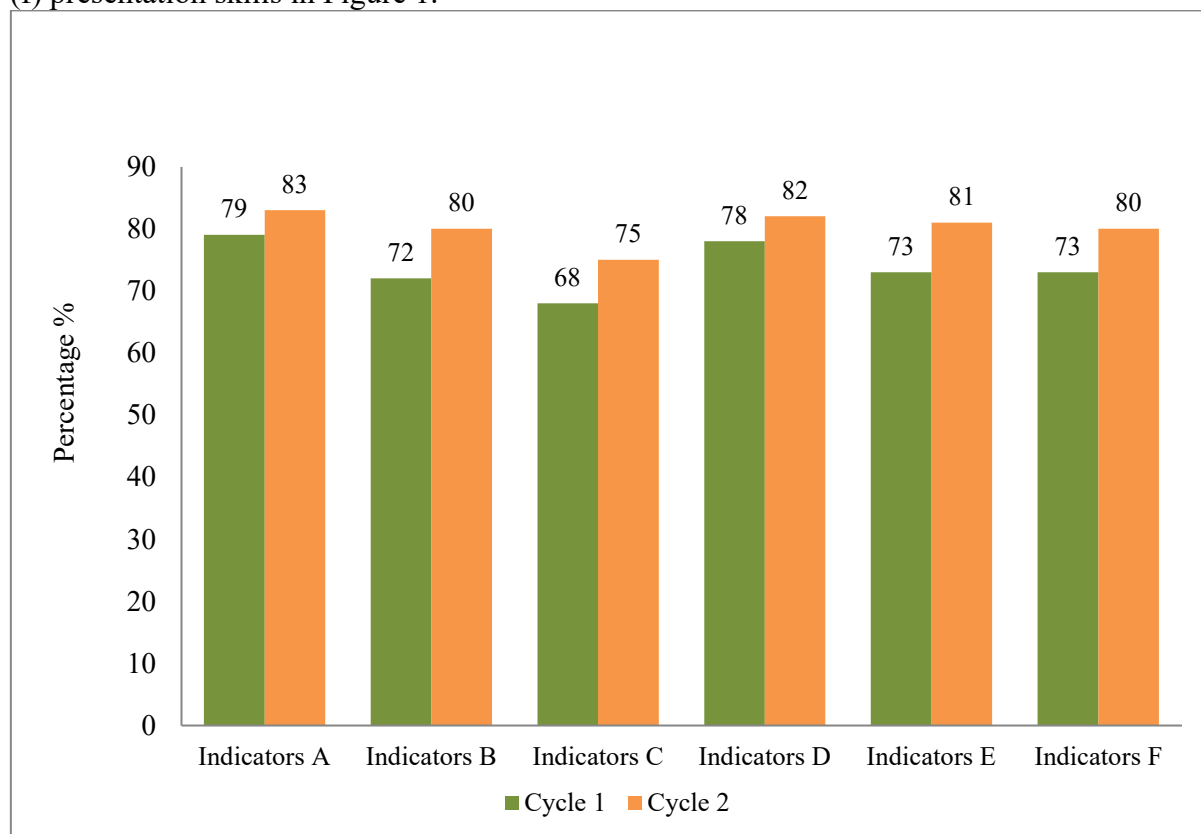


Fig. 1 Graph of improving communication skills of vocational high school students

Implementation of the Problem-based learning model with a classroom action research approach is a research process that emphasizes improving learning from the aspect of learning outcomes. The research involves a team of teachers as implementers, with observers who help observe students from the aspect of communication skills. The observer assists the teacher in observation, with the aim that the teacher can focus on conducting learning with the planned stages. The stages carried out in each cycle include planning, implementation, observation, and reflection. The purpose of doing all these stages is to help teachers design, record, and provide advice related to implementing learning in the classroom.

The planning stages include preparing learning implementation plans, preparing learning media that support classroom learning, and compiling observation sheets adapted from Greenstei⁶. At the implementation stage, the teacher will implement learning by applying the Problem-based learning model in the classroom according to what has been planned in the learning implementation plan. Observations were made by two observers who were in charge of assessing students' communication skills during the learning process. Reflection is carried out after all stages to evaluate the implementation of learning and other aspects to improve learning in each meeting.

Based on data from Figure 1, there is an increase in student communication in the implementation of learning using the Problem Based Learning model. Optimizing students' abilities in the form of communication, problem-solving, group work, and interpersonal skills can be facilitated by implementing the Problem-based learning model⁷. In the Problem Based Learning model learning, there are several activities so that some students' abilities can be optimal. Learning by emphasizing the presentation of problems will effectively encourage students to be active in the classroom⁸.

The stages of implementing applied learning begin with students being given problems according to the material taught. Students will be stimulated with a problem contextual to the surrounding environment. Giving problems will involve students, so it is hoped that participation can be carried out from the beginning of learning. Students are required to understand the problems given by the teacher. In the next stage, namely data collection and data processing, students conduct discussions in groups guided by the teacher so that the discussion can run by learning outcomes. In the verification stage, students can convey the results of the discussion in small groups in front of other students. On this occasion, students can give rebuttals, opinions, and opinions based on presentations from other groups. Student discussions went well because students exchanged opinions on the issues that were the topic of conversation. Students enthusiastically convey their ideas and opinions based on the results of group discussions that have been carried out. The last stage of the Problem Based Learning model is a generalization, where students can convey the conclusions of the learning process.

Problem Based Learning model is learning that can make the classroom atmosphere active based on problems with learning materials⁹. Learning will be focused on student activity based on discussion activities and exchanging ideas to find solutions¹⁰. The problem is based on a real and meaningful problem so that students together in their group will find a solution with scientific stages. Each student will build knowledge and problem-solving skills during this activity¹¹ and communication skills during this activity when conveying their ideas. Communication skills will be built by exchanging ideas and opinions with fellow friends aimed at solving problems¹².

Student activity in the learning process can be influenced by several factors: student motivation and interest in learning. Motivation in students is important because students will be brave in expressing their opinions and asking questions to teachers and other fellow students. Motivation can encourage a person to do something to achieve a goal¹³. Students' motivation and interest in learning can give students courage in terms of giving opinions during small group and class discussions and asking questions on material that students do not yet understand. During the learning process, teachers also try to build interaction with students. The efforts made by the teacher adjust to the learning syntax so that students are more interested and do not feel bored with learning. One of the virtues of the Problem Based Learning model is that students will get used to facing and solving problems¹⁴.

The learning carried out in the class students will be divided into four groups. Grouping aims for students to discuss and be active in such small groups. The Problem Based Learning model usually groups students at the time of its implementation so that students can discuss the problems given by the teacher¹⁵. Activities in the group room will increase students' confidence in expressing their opinions. Learning by forming groups provides a meaningful experience for students and can help students understand the concept of the material being studied¹⁶.

Student independence in learning is required in the implementation of the Problem Based Learning model because students will build the latest knowledge based on previous knowledge¹⁷. The search for information by students from various sources can be done during group discussions. Grouping information, collecting information, considering solutions, and group members will communicate with each other about the solution to the given problem¹⁸. Independent learning through groups will be built by discussing and developing solutions to problems given at the stages of the learning process¹⁹. Independent learning in groups will create effective communication²⁰. Communication skills can be used as an indicator of student success in learning because good classroom communication will impact the lesson's understanding¹⁶.

Conclusion

After conducting research and based on the study of the research results, it can be concluded that the communication skills of class XI Vocation High School students have increased from cycle one to cycle two. As measured from 6 indicators, indicators B and E, communication skills experienced the highest increase of 8%. Indicator B is receptive communication, and indicator E communicates for one purpose. Then the indicator that gets the highest average is indicator A, namely oral communication, with the value in cycle 2 reaching 83%.

References

1. Rahayu, R., Iskandar, S. & Abidin, Y. Inovasi Pembelajaran Abad 21 dan Penerapannya di Indonesia. *J. Basicedu* **6**, 2099–2104 (2022).
2. Sihotang, N. Eksplorasi komunikasi dakwah interpersonal dalam al-Quran surat Luqman. *J. Ilmu Dakwah dan Komun. Islam* **8**, 107–114 (2014).
3. Marfuah. Meningkatkan Keterampilan Komunikasi Peserta Didik melalui Model Pembelajaran Kooperatif Tipe Jigsaw. *J. Pendidik. Ilmu Sos.* **2**, 148–160 (2017).
4. Suryosubroto. *Proses Belajar Mengajar di Sekolah*. (Rineka Cipta, 2009).
5. Agustiniingsih, N. Melatih Keterampilan dan Kemandirian Belajar Siswa MA melalui Model Pengajaran Terbalik (Reiprocal Teaching) pada Topik Pertumbuhan dan Perkembangan Tumbuhan. *J. BIOEDUIN Progr. Stud. Pendidik. Biol.* **9**, 30–42 (2019).
6. Greenstein, L. *Assessing 21st Century Skills: a guide to evaluating mastery and authentic learning*. (Corwin, 2012).
7. Kodariyati, L. & Astuti, B. Pengaruh Model PBL Terhadap Kemampuan Komunikasi dan Pemecahan Masalah Matematika Siswa Kelas V SD. *J. Prima Edukasia* **4**, 93–106 (2016).
8. Arends, R. I. *Learning to Teach, Tenth Edition*. (McGraw-Hill Education, 2015).
9. Yanti, A. H. Penerapan Model Problem Based Learning (Pbl) Terhadap Kemampuan Komunikasi Dan Kemampuan Pemecahan Masalah Matematika Siswa Sekolah Menengah Pertama Lubuklinggau. *J. Pendidik. Mat. Raflesia* **2**, (2017).
10. Ariyanti, A. Penerapan Pendekatan Problem Based Learning Berbasis Scaffolding Untuk Meningkatkan Kemampuan Komunikasi Matematis Siswa Sekolah Dasar. in *Tunjuk Ajar: Jurnal Penelitian Ilmu Pendidikan* **3**, 33–45 (Lembaga Penelitian dan Pengabdian kepada Masyarakat Universitas Riau, 2020).
11. Dewi Hasanah, M., Alberida, H. & Laila Rahmi, Y. The Effect of Problem Based Learning Model on Critical Thinking Ability of Students on Additives and Addictive Substances Class VIII SMPN 12 Padang. *Bioeducation J.* **2**, 124–132 (2018).
12. Safitri, E. M., Sari, Y., Fironika, R. & Dewi, K. Pengaruh Model Pembelajaran Problem Based Learning terhadap Sikap Mandiri dan Kemampuan Komunikasi Matematika Siswa Kelas V SD Negeri Bakalrejo 1. *Sq. J. Math. Math. Educ.* **1**, 83–89 (2019).
13. Hanipah, H. & Sumartini, T. S. Perbandingan Kemampuan Komunikasi Matematis Siswa antara Problem Based Learning Dan Direct Instruction. *Plusminus J. Pendidik. Mat.* **1**, 83–96 (2021).
14. Nur, S., Pujiastuti, I. P. & Rahman, S. R. Efektivitas Model Problem Based Learning (Pbl) terhadap Hasil Belajar Mahasiswa Prodi Pendidikan Biologi Universitas Sulawesi Barat. *SAINTIFIK* **2**, 133–141 (2016).
15. Kilbane, C. R. & Milman, N. B. *Teaching Model, Designing Instruction for 21st Century*

Learners. (Pearson, 2014).

16. Wati, M. Y., Maulidia, I. A., Irnawat, I. & Supeno, S. Keterampilan Komunikasi Siswa Kelas VII SMPN 2 Jember dalam Pembelajaran IPA Dengan Model Problem Based Learning pada Materi Kalor dan Perubahannya. *J. PEMBELAJARAN Fis.* **8**, 275–280 (2019).
17. Awang, H. & Daud, Z. Improving a Communication Skill Through the Learning Approach Towards the Environment of Engineering Classroom. *Procedia - Soc. Behav. Sci.* **195**, 480–486 (2015).
18. Duch, B. J., Groh, S. E. & Allen, D. E. *The power of problem-based learning.* (Stylus, 2001).
19. Karpiak, C. P. Assessment of Problem-Based Learning in the Undergraduate Statistics Course. *Teach. Psychol.* **38**, 251–254 (2011).
20. Setyawan, D., Shofiyah, A., Dimlantika, T. I., Sakti, Y. T. & Susilo, H. Implementation of problem-based learning model through lesson study on student communication skills. *AIP Conf. Proc.* **2330**, 1–4 (2021).