



Bridging The Gender Gap: Investigating Disparities In Student Communication Skills In The Digital Education Era

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Abstract: *Communication skills are one of the primary skills that students need to have. Previous research indicates a tendency for differences in communication skills based on gender. For this reason, this research investigates how learning in the digital era can enhance communication skills in students aspiring to become prospective teachers and explores whether there are differences in communication skills based on gender. The research employs a comparative descriptive method to assess the level of student's communication skills, considering gender as one of the influencing factors. The sample consists of 19 male and 19 female students selected through quota sampling. Data analysis conducted using SPSS reveals that overall communication skills are 'good,' except multilingual skills, which are 'sufficient.' Surprisingly, digital technology, particularly translator apps, negatively impacts students' ability to communicate in foreign languages. Gender differences in communication skills were found insignificant when educational opportunities were equal, showing similar skill levels among both genders.*

Keywords: *communication skills, digital education era, gender*

Abstrak: Keterampilan komunikasi adalah salah satu keterampilan utama yang perlu dimiliki oleh siswa. Penelitian sebelumnya menunjukkan adanya kecenderungan perbedaan keterampilan komunikasi berdasarkan gender. Untuk itu, penelitian ini menyelidiki bagaimana pembelajaran di era digital dapat meningkatkan kemampuan komunikasi pada mahasiswa yang bercita-cita menjadi calon guru dan mengeksplorasi apakah terdapat perbedaan kemampuan komunikasi berdasarkan gender. Penelitian ini menggunakan metode deskriptif komparatif untuk menilai tingkat kemampuan komunikasi mahasiswa, dengan mempertimbangkan gender sebagai salah satu faktor yang mempengaruhi. Sampel terdiri dari 19 siswa laki-laki dan 19 siswa perempuan yang dipilih melalui quota sampling. Analisis data yang dilakukan dengan menggunakan SPSS menunjukkan bahwa secara keseluruhan kemampuan komunikasi siswa tergolong 'baik', kecuali kemampuan multibahasa yang tergolong 'cukup'. Yang mengejutkan, teknologi digital, khususnya aplikasi penerjemah, berdampak negatif pada kemampuan siswa untuk berkomunikasi dalam bahasa asing. Perbedaan gender dalam keterampilan komunikasi ditemukan tidak signifikan ketika kesempatan pendidikan setara, menunjukkan tingkat keterampilan yang sama di antara kedua jenis kelamin.

Kata kunci: keterampilan komunikasi, era pendidikan digital, gender

Introduction

In general learning activities, there is observed disparity in communication patterns, where some students are more active in participating and interacting with the learning material. In contrast, others tend to be passive or less engaged in classroom discussions. It is also evident that the communication patterns between students and teachers tend to differ, with some students more inclined to ask questions or express their opinions, while others prefer to remain silent or only provide brief responses (O'Connor et al., 2017; Yashima et al., 2016). These differences in communication patterns are assumed also to be influenced by gender factors (Allen, 2023; Hall & Sandler, 1982; Ruthotto et al., 2020). To begin with, communication derives from the Latin word 'communis,' which can be interpreted as 'together' (Hutagalung, 2007). In this context, communication



refers to the exchange of information collectively (Ginting, 2015). Conceptually, communication is disseminating knowledge, thoughts, values, and news with a specific purpose (Mahanal & Zubaidah, 2017; Mayani et al., 2023; Yeşil, 2010). The specific goals of communication may include expanding information distribution, inspiring participation, or reaching agreements on matters of common interest. In general, communication is closely related to Interaction.

Interaction/communication between teachers and students is crucial in learning (Ilie, 2015; Priadi, 2020; Šejtanić & Ilić, 2016). Communication skills involve students actively expressing thoughts, ideas, knowledge, or new information to construct new knowledge and achieve learning goals. A successful learning process includes effective communication between teachers and students and among students (Munna & Kalam, 2021; Šejtanić & Ilić, 2016; Xie & Derakhshan, 2021).

Students in the Tadris Physics study program are projected to become prospective teachers, emphasizing the need for solid communication skills. In the future, they will serve as facilitators, training and nurturing communication motives in the students they teach. Therefore, lecturers need to focus on training communication skills with students. Additionally, a LinkedIn survey of labor recruiters revealed that communication skills are the most needed soft skills by future workers (Bayu, 2023).

We live in the digital era, where the education sector implements digital technology. The rapid development of technology drives this shift (Sudibjo et al., 2019). Learning characteristics in the digital era include prioritizing digital learning resources, utilizing various digital applications and platforms, and incorporating digital tutoring services (Dewanti et al., 2022; Efendi, 2018; Retnaningsih, 2019). Given the distinct nature of digital-era learning compared to conventional methods, it is crucial to study how learning in the digital era shapes students' soft skills, particularly communication skills.

Another variable explored in this research is gender. Previous studies have shown differences in brain activity between men and women related to language processing. For instance, male brain activity focuses on the left hemisphere-frontal gyrus during a phonological task. In contrast, female neural activity spreads across both the inferior frontal gyrus, left and right. This difference in brain activity during phonological tasks suggests variations in language processing between men and women (Hairus, 2015; Yanti et al., 2019). Previous studies also have shown differences in perspectives on communication skills regarding gender factors. The research results of Yavuz, Serdar, Güzel, Ümmühan, entitled "Evaluation of Teachers' Perception of Effective Communication Skills According to Gender," indicate that both male and female teachers scored high on practical communication skills, with no significant difference found between the genders. However, according to the findings, female teachers scored slightly higher than male teachers. This underscores the importance of practical communication skills for teachers in facilitating learning in the classroom, regardless of gender differences (Yavuz & Güzel, 2020). On the other hand, another study conducted by Brenda Lovell, Raymond T. Lee, and Celeste M. Brotheridge, entitled "Gender differences in the application of communication skills, emotional labor, stress-coping, and well-being among physicians," shows that females used more process and perceptual skills and felt greater competency in non-verbal communications and handling culturally sensitive issues than males during patient interactions. These differences may be attributed to females favoring a psychosocial pattern of patient communication while males favoring a biomedical pattern (Lovell et al., 2009).

Therefore, because there are two perspectives on communication skills influenced by gender factors, this research is necessary to examine how the communication skills of prospective teacher students in the Physics Education Study Program at UIN Imam Bonjol Padang are influenced by gender factors while also considering the digital learning process they have undergone.

Method

This research employs a comparative descriptive method to assess students' communication skills and examine gender factors as influencers in the context of digital technology-based learning activities, particularly in the Physics Education Study Program. The sample was selected using the quota sampling method, resulting in a research sample of 19 male and 19 female students. The limited sample size is due to the focus of this research solely on physics education students at UIN Imam Bonjol Padang.

Data for the research were collected through a questionnaire instrument. The student communication skills questionnaire was developed based on seven indicators: 1) the ability to understand, manage, and create effective communication, including communication that utilizes technology; 2) confidence in expressing ideas; 3) language usage in line with content, context, and adapted to the audience; 4) demonstrating an honest and responsible attitude towards conveyed information, ideas, or thoughts; 5) listening and respecting others' opinions; 6) using logical and structured thought processes according to applicable rules, and 7) multilingual communication skills.

Furthermore, the student communication skills scores obtained from the questionnaire will be calculated and analyzed with the assistance of the SPSS application. The analysis using SPSS is conducted to test the hypotheses. The hypotheses in this research are as follows:

Hypothesis (Ho):

There is no significant difference between the average communication skills of male and female students

I have: $\mu_A = \mu_B$

Alternative hypothesis (Ha):

there is a significant difference between the average communication skills of male and female students

I have: $\mu_A \neq \mu_B$

An independent sample t-test was carried out to test the hypothesis above. However, the normality and homogeneity tests, which are prerequisite tests, must be conducted before the independent sample t-test.

Results and Discussion

1. Student Communication Skill Level

Students in the Tadris Physics study program are individuals whose primary graduate profile is geared toward becoming prospective Physics teachers. In addition to receiving instruction in various competencies related to the teaching profession, such as pedagogical, personality, social, and professional competencies, students are also equipped with various soft skills, including communication skills. This emphasis on communication skills is vital for educators, mainly when undertaking roles as facilitators, tutors, motivators, and learning engineers for students. The lecture process plays a pivotal role in honing these competencies and skills.

The lecture process within the Physics Study Program adheres to the curriculum's recommended student-centered approach (Muliarta, 2018; Wulandari et al., 2022). In this approach, lecturers guide students to construct their knowledge actively. This process, combined with integrating digital technology, helps students develop proficiency in communication.

As previously mentioned, research data were obtained by distributing questionnaires to active Physics Education Study Program students who had attended lectures utilizing digital technology. The following section (table 1) presents the findings obtained from the data collection process, specifically focusing on evaluating students' communication skills across seven distinct

indicators. These indicators have been analyzed using differentiation based on gender factors.

Table 1. Evaluation of Students' Communication Skills by Gender

No.	Indicator	A
		Mal
1	The ability to understand, manage, and create effective communication, including communication that utilizes technology,	3,5
2	Confidence in expressing ideas	3,4
3	Language usage in line with content context and adapted to the audience	3,4
4	Demonstrating an honest and responsible attitude towards conveyed information, ideas, or thoughts,	3,4
5	Listening and respecting others' opinions	3,1
6	Using logical and structured thought processes according to applicable rules	3,2
7	Multilingual communication skills.	2,6

The established indicators of communication skills serve as integral foundations in understanding and evaluating the quality of an individual's communication. Firstly, comprehending, managing, and creating effective communication, including utilizing technology, is a crucial cornerstone in today's digital era. Confidence in expressing ideas (the second indicator) demonstrates clarity and self-assurance and influences how messages are conveyed to recipients. Subsequently, using language appropriately aligned with content, context, and audience (the third indicator) underscores the importance of adaptation in communication to ensure messages are conveyed with intended meaning. Demonstrating an honest and responsible attitude toward conveyed information (the fourth indicator) is crucial to building trust and credibility in communication.

Additionally, the ability to listen to and respect others' opinions (the fifth indicator) reflects the capacity to foster healthy interpersonal relationships. Logical and structured thought processes (the sixth indicator) form the basis for crafting coherent and easily understandable messages. Finally, multilingual communication skills (the seventh indicator) are increasingly vital in today's global environment.

Based on Table 1, it is evident that students' communication skills, when examined per indicator, do not differ significantly between male and female students. Male students perform slightly better in demonstrating an honest and responsible attitude towards conveyed information, ideas, or thoughts. Meanwhile, female students excel in language usage in line with content and context, adapting to the audience, listening and respecting others' opinions, and using logical and structured thought processes according to applicable rules.

Furthermore, Figure 1 illustrates the data on the average communication skills of male students compared to female students. The average scores for communication skills are above 3 for both male and female students, precisely 3.28 for male students and 3.32 for female students.

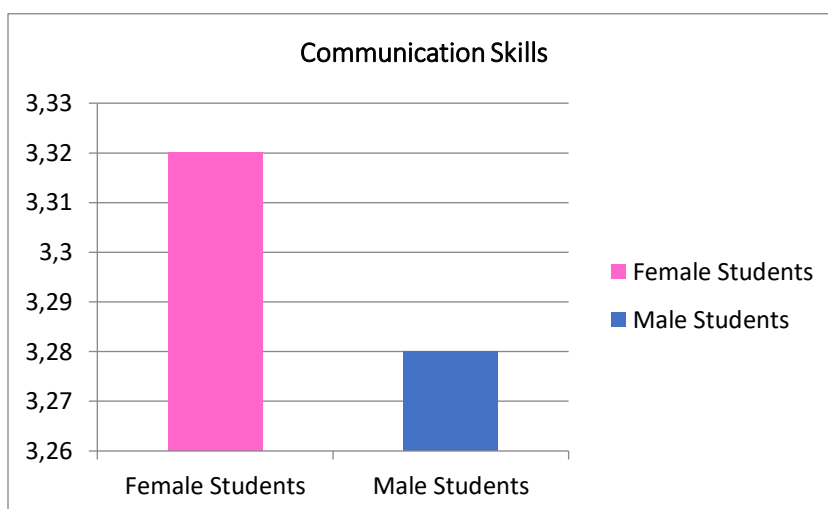


Figure 1. Communication Skills of Male and Female Students

The average scores for communication skills are above 3 for both male and female students, precisely 3.28 for male students and 3.32 for female students. Students affirm that the lecture process significantly enhances their communication skills.

During the lecture process, students often engage in discussions, which fosters the development of verbal and non-verbal communication skills. Cangara distinguishes between verbal and non-verbal codes in communication, with verbal code representing spoken language and non-verbal code encompassing supportive signals like facial expressions and intonation (Cangara, 2011). When participating in discussions, students articulate their opinions using verbal code, complemented by intonation, facial expressions, and even body movements, constituting non-verbal codes in communication.

Upon closer examination, students reported that these discussion activities effectively honed their verbal communication skills. This finding aligns with Ahmad Muslim's research, which asserted that participatory learning through focus group discussions significantly improved students' communication skills (Muslim, 2020). Additionally, the question-and-answer sessions within the discussions cultivate students' proficiency in active listening, respect for diverse opinions, and accountability for the ideas or information conveyed.

Not uncommonly, students must conduct small group discussions and write papers before engaging in more extensive discussions, producing informative scientific papers. This practice underscores that the lecture process enhances oral communication and cultivates practical written communication skills. Hikmawati et al. also asserted that the communication skills of prospective teacher students can improve through the analysis of scientific journal articles (Hikmawati et al., 2021). Hence, it is evident that the lecture activities at the Tadris Physics Study Program enhance students' communication skills.

As aspiring Physics teachers, students in the Physics Education Study Program are also trained to perform scientific communication related to scientific process skills, such as creating graphs and diagrams. This aligns with the findings of Nurlaelah's research, which suggests that skills such as reading, collecting, and presenting information in tables, diagrams, or graphs, interpreting data, compiling systematic reports, making conclusions, and identifying patterns from natural phenomena are integral to communication skills (Nurlaelah et al., 2020).

Regarding integrating digital technology in lecture activities to support

communication skills training, previous research indicates that familiarity with digital technology/digital literacy positively influences critical thinking, communication, collaboration, and creativity (Sujana & Rachmatin, 2019). Students corroborate this by stating that, in writing scientific papers, they commonly use digital technology to gather information, such as searching for scientific journal articles or obtaining data from reputable websites. The accessibility of digital technology significantly facilitates the composition of scientific papers.

In addition to expressing their ideas, students must be honest and responsible in their writing by providing proper citations and acknowledging sources. Digital technology simplifies the citation process with various citation applications such as EndNote and Mendeley (Dairoh et al., 2022; Mardin et al., 2020).

Furthermore, students are often tasked with creating PowerPoint presentations (PPTs) or videos for class discussion activities. With the advancement of technology, students can quickly generate engaging PowerPoint presentations or educational videos. As prospective teachers, becoming adept at producing PPTs or videos as discussion materials is highly beneficial for practicing communication skills and honing the ability to develop learning materials and media.

Examining the role of lecturers in digital technology-based lecture activities on student communication skills, research respondents stated that lecturers serve as effective facilitators. By guiding students through discussions, lecturers stimulate communication motives. Communication motives can be categorized as either conscious or subconscious. Motives from the conscious mind are generally proactive and planned, while those from the subconscious mind are reactive, unplanned, and can arise spontaneously (Vardiansyah, 2008). Lecturers explicitly convey that active participation in discussions, including asking questions, responding, and expressing opinions, is an assessed aspect, motivating students to communicate effectively.

At the conclusion of discussion activities, lecturers typically review the discussions undertaken. This may involve expressing appreciation to students who articulate opinions effectively or provide insights on the principles of effective communication. Lecturers consistently emphasize the essential elements of effective communication in discussions, including maintaining eye contact, speaking audibly and clearly, and adhering to proper grammar usage (Juniarti, 2023; Noriyana, 2024; Suyanto et al., 2023; Yuliana et al., 2023).

Another aspect of communication skills analyzed in this research is students' proficiency in multilingual communication. Findings indicate that the average student rates their multilingual communication skills as only 2.68. Among the 38 respondents, only 10 expressed confidence in actively and passively communicating in languages other than Indonesian. Despite lecturers often encouraging students to refer to articles in international journals that use English, students still perceive their multilingual communication skills to be at a basic level.

While the presence of digital technology has been shown to enhance various communication skills in previous indicators, technology has not positively impacted multilingual communication skills. Students mentioned that the availability of Google Translate and other translation applications has led to complacency in learning English, creating a dependency on translation tools. This observation aligns with research by Endang Sholihatin et al., which highlights the influence of translator applications on students' motivation and independence in learning foreign languages (Setiawan & Munawaruzaman, 2023; Sholihatin et al., 2022) (Setiawan & Munawaruzaman, 2023; Shobayarin et al., 2022).

2. Student Communication Skills Viewed From a Gender Perspective

Previous research indicates differences in the neuropathological processes of various aspects of language from a gender perspective. Functional magnetic resonance imaging studies have shown that during phonological tasks, men primarily activate the left side of the brain, while women exhibit neural activity in both the left and right inferior frontal gyrus (Hairus, 2015; Yanti et al., 2019). In the book "Introduction to Language Studies," Hairus states that examining neuropathological process differences between men and women does not reveal significant disparities in language efficiency (Hairus, 2015).

However, historical evidence suggests variations in speaking styles between men and women. These differences may contribute to the observed patterns in communication skills, as shown by the research results that male students tend to perform slightly better in demonstrating an honest and responsible attitude towards conveyed information, ideas, or thoughts (with an average score of 3.42). In contrast, female students excel in language usage aligned with content context and adapted to the audience (with an average score of 3.63), as well as in listening and respecting others' opinions (average score of 3.26) and using logical and structured thought processes according to applicable rules (average score of 3.37).

Further investigations indicate that social factors, including education, influence these differences. More significant disparities in educational opportunities for boys and girls lead to more pronounced distinctions in their speaking styles (Hairus, 2015). In ancient times, women had fewer educational opportunities than men, reinforcing the perception that men held more power and prestige. Consequently, the words spoken by men were deemed more influential than those spoken by women. Additionally, cultural factors often placed women in subordinate roles, with men as leaders, maintaining dominance. Therefore, the words of males were considered more critical and heard more frequently (Darulhuda, 2017).

On the other hand, with equal educational opportunities, women tend to be more sensitive than men to language status norms (Hairus, 2015). This aligns with the findings of this study. A comparison of male and female students' average communication skill scores indicates that female students scored slightly higher on average. However, further analysis through an independent t-test yielded a two-tailed significance value of 0.763, greater than 0.05. This implies no significant difference between the average communication skills of male and female students.

Based on these research results, establishing an inclusive educational ecosystem without gender differentiation can foster gender equality, including equality in communication skills. These findings align with Cronin's assertion that building a fair and balanced educational ecosystem between genders is crucial (Cronin & Roger, 1999). The respondents in this study were students in the Physics Education Study Program who, during the lecture process, received equal treatment and learning opportunities through the use of digital technology. Therefore, when students receive equal educational opportunities, disregarding the notion that women are subordinates who must prioritize men's thoughts, women can exhibit communication skills as proficient as men.

Conclusion

The significant finding of this study is that the overall level of students' communication skills is generally categorized as 'good.' Proficient communication

skills are evident in oral expressions, such as opinions, questions, or participation in class discussions and written forms, including assignments or scientific papers. The advancement of communication skills is influenced by the learning process utilizing digital technology. When considering gender differences, there appears to be no significant distinction between the communication skills of male and female students. Men and women can develop communication skills at relatively similar levels when afforded the same educational opportunities.

This study contributes to scholarship by demonstrating that using digital technology in the learning process can enhance students' communication skills. Additionally, this research proves that, with equal education, gender differences do not affect communication skills. This finding can assist in designing more inclusive and effective learning strategies for developing communication skills in the digital era.

This study's limitation is its limited sample size, as it focuses on physics education students at UIN Imam Bonjol Padang. To obtain more reliable research results, further research can be conducted by taking a larger sample size and exercising more control over treatments in digital-era learning activities.

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Author Contribution Statement

AAZ was responsible for conceptualization, design, analysis, and writing. KA was responsible for data analysis, editing and reviewing the manuscript.

References

- Allen, B. J. (2023). *Difference matters: Communicating social identity*. Waveland Press.
<https://books.google.com/books?hl=en&lr=&id=nV2mEAAQBAJ&oi=fnd&pg=PR1&dq=These+differences+in+communication+patterns+are+assumed+to+also+be+influenced+by+gender+factors&ots=a3BfEqQ8pX&sig=pdD7RWXITdgYez80iL9lpBo0e-s>
- Bayu, D. (2023). *Ini Soft Skill yang Paling Dibutuhkan Pekerja di Masa Depan*. <https://dataindonesia.id/tenaga-kerja/detail/ini-soft-skill-yang-paling-dibutuhkan-pekerja-di-masa-depan>
- Cronin, C., and A. Roger. (1999). Theorizing progress: Women in science, engineering, and technology in higher education. *Journal of Research in Science Teaching*, 36(6), 637–661.
- Dairoh, D., Handayani, S. F., Pratiwi, R. W., Afidah, D. I., Bakti, V. K., Sari, S. N., & Akbar, I. (2022). Peningkatan Pengetahuan Tentang Aplikasi Penggunaan Referensi Dalam Publikasi Karya Ilmiah. *CARADDE: Jurnal Pengabdian Kepada Masyarakat*, 5(1), 98–104.
- Darulhuda, D. (2017). *Perbedaan Bahasa Laki-laki dan Perempuan di English Zone Pekanbaru* [PhD Thesis, Universitas Negeri Padang]. http://repository.unp.ac.id/13501/1/A_02_DARULHUDA_51928_6619_2017.pdf
- Dewanti, P., Santiari, N. P. L., & Vedamurthi, K. V. (2022). Analisis efektivitas implementasi digital learning pada masa pandemik Covid-19. *IKRA-ITH*

HUMANIORA: Jurnal Sosial Dan Humaniora, 6(1), 11–19.

- Efendi, N. M. (2018). Revolusi pembelajaran berbasis digital (Penggunaan animasi digital pada start up sebagai metode pembelajaran siswa belajar aktif). *Habitus: Jurnal Pendidikan, Sosiologi, & Antropologi*, 2(2), 173–182.
- Ginting, D. (2015). *Komunikasi Cerdas*. Elex Media Komputindo. <https://books.google.com/books?hl=en&lr=&id=9E5JDwAAQBAJ&oi=fnd&pg=PP1&dq=komunikasi+cerdas&ots=a8c5jwED52&sig=XodOVWWu4OUzqJfV6GzilOZDM1Q>
- Hairus, S. (2015). *Pengantar Kajian Bahasa: Sosiolinguistik*. <https://repository.unej.ac.id/handle/123456789/82919>
- Hall, R. M., & Sandler, B. R. (1982). *The Classroom Climate: A Chilly One for Women?* <https://eric.ed.gov/?id=ED215628>
- Hikmawati, H., Sahidu, H., Ayub, S., & Kosim, K. (2021). Peningkatan Keterampilan Komunikasi Mahasiswa Calon Guru Melalui Kegiatan Analisis Artikel Ilmiah Dari Jurnal Nasional. *Unram Journal of Community Service*, 2(2), 33–37.
- Hutagalung, I. (2007). Pengembangan kepribadian. *PT Indeks, Jakarta*.
- Ilie, V. (2015). Communication between teachers and students. *CLAUDIU MARIAN BUNĂIAȘU ELENA RODICA OPRAN DAN VALERIU VOINEA*, 287.
- Juniarti, C. E. (2023). *PENTINGNYA KOMUNIKASI EFEKTIF DALAM PENGELOLAAN KELAS YANG SUKSES*. <https://osf.io/pf6wu/download>
- Lovell, B., R. T. Lee, & Brotheridge, C. M. (2009). Gender differences in applying communication skills, emotional labor, stress-coping, and well-being among physicians. *Archives: The International Journal of Medicine*, 2(3), 273–279.
- Mahanal, S., & Zubaidah, S. (2017). Model pembelajaran Ricosre yang berpotensi memberdayakan keterampilan berpikir kreatif. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 2(5), 676–685.
- Mardin, H., Baharuddin, B., & Nane, L. (2020). Pelatihan Cara Menulis Sitasi Dan Daftar Pustaka Jurnal Format Apa StyleMenggunakan Aplikasi Mendeley. *Jurnal Abdidas*, 1(3), 137–143.
- Mayani, C., Maknun, D., & Ubaidillah, M. (2023). Analisis keterampilan komunikasi ilmiah pada pembelajaran biologi. *SENDJA (Science Education and Development Journal Archives)*, 1(1), 13–28.
- Muliarta, I. K. (2018). Menerjemahkan Perubahan Dari TCL (Teacher Center Learning) Ke SCL (Student Center Learning). *Cetta: Jurnal Ilmu Pendidikan*, 1(2), 76–86.
- Munna, A. S., & Kalam, M. A. (2021). Teaching and learning process to enhance teaching effectiveness: A literature review. *International Journal of Humanities and Innovation (IJHI)*, 4(1), 1–4.
- Muslim, A. (2020). Implementasi Pembelajaran Partisipatif Melalui Focus Group Discussion Dalam Meningkatkan Kemampuan Komunikasi Mahasiswa. *Jurnal Paedagogy*, 4(1), 15–20.
- Noriyana, D. K. (2024). Analisis Tantangan dan Strategi Komunikasi Efektif Dalam Menghadapi Peserta Didik Tingkat SD. *Jurnal Ilmiah Research Student*, 1(3), 794–801.
- Nurlaelah, I., Widodo, A., Redjeki, S., & Rahman, T. (2020). Analisis Kemampuan Komunikasi Ilmiah Peserta Didik Pada Kegiatan Kelompok Ilmiah Remaja Berbasis Riset Terintegrasi Keterampilan Proses Sains. *Quagga: Jurnal Pendidikan Dan Biologi*, 12(2), 194–201.
- O'Connor, C., S. Michaels, Chapin, S., & Harbaugh, A. G. (2017). The silent and

- the vocal: Participation and learning in whole-class discussion. *Learning and Instruction*, 48, 5–13.
- Priadi, R. (2020). Teacher communication effectiveness in the learning process. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 3(4), 3433–3444.
- Retnaningsih, D. (2019). Tantangan dan strategi guru di era revolusi industri 4.0 dalam meningkatkan kualitas pendidikan. *Prosiding Seminar Nasional: Kebijakan Dan Pengembangan Pendidikan Di Era Revolusi Industri*, 4(21), 23–30.
<https://jurnal.ustjogja.ac.id/index.php/snpep2019/article/view/5624>
- Ruthotto, I., Q. Kreth, Stevens, J., Trively, C., & Melkers, J. (2020). Lurking and participation in the virtual classroom: The effects of gender, race, and age among graduate students in computer science. *Computers & Education*, 151, 103854.
- Šejtanić, S., & Ilić, M. (2016). Verbal Interaction between Pupils and Teachers in the Teaching Process. *European Journal of Education Studies*.
<http://oapub.org/edu/index.php/ejes/article/view/315>
- Setiawan, D., & Munawaruzaman, A. (2023). Penggunaan Google Translate pada Kemampuan Menulis Bahasa Inggris. *Aufklarung: Jurnal Pendidikan, Sosial Dan Humaniora*, 3(2), 60–66.
- Sholihatin, E., Alamsakh, C., Sinaga, P. D., Satriagung, A. H., Fawwaz, M., & Ramadhan, H. P. (2022). Analisis Dampak Perkembangan Iptek dalam Penggunaan Alat Penerjemah Bahasa Asing pada Mahasiswa UPN Veteran Jawa Timur. *Sabda: Jurnal Sastra Dan Bahasa*, 1(2), 96–106.
- Sudibjo, N., Idawati, L., & Harsanti, H. R. (2019). Characteristics of Learning in the Era of Industry 4.0 and Society 5.0. *International Conference on Education Technology (ICoET 2019)*, 276–278. <https://www.atlantispress.com/proceedings/icoet-19/125925095>
- Sujana, A., & Rachmatin, D. (2019). Literasi digital abad 21 bagi mahasiswa PGSD: Apa, mengapa, dan bagaimana. *Current Research in Education: Conference Series Journal*, 1(1), 003–013.
- Suyanto, A. P., Putri, V. T., Fatimah, N. S., Zakiah, R. U., Munawwarah, Z., Suharto, B. A. Z., Azhari, M., & Maulana, F. (2023). Membangun Komunikasi Efektif dalam Lingkup Pendidikan SMP AT-TIN Desa Cibedug. *KARIMAH TAUHID*, 2(5), 1774–1785.
- Vardiansyah, D. (2008). Filsafat ilmu komunikasi: Suatu pengantar. *Jakarta: Indeks*, 25–26.
- Wulandari, A., Wibowo, D. E., & Arifin, M. (2022). Pergeseran pembelajaran berbasis student centered learning. *PEGAS (Jurnal Pendidikan Guru Sekolah Dasar)*, 1(1), 1–5.
- Xie, F., and A. Derakhshan. (2021). A conceptual review of positive teacher interpersonal communication behaviors in the instructional context. *Frontiers in Psychology*, 12, 708490.
- Yanti, E. D., Wigati, I., & Habisukan, U. H. (2019). Perbedaan Kemampuan Berpikir Kritis Laki-Laki dan Perempuan pada Materi Sistem Peredaran Darah Mata Pelajaran Biologi Kelas XI MIPA MAN I Banyuasin III. *Bioilmi: Jurnal Pendidikan*, 5(1), 66–71.
- Yashima, T., Ikeda, M., & Nakahira, S. (2016). Talk and Silence in an EFL Classroom: Interplay of Learners and Context. In J. King (Ed.), *The Dynamic Interplay between Context and the Language Learner* (pp. 104–126). Palgrave Macmillan UK.
https://doi.org/10.1057/9781137457134_7
- Yavuz, S., & Güzel, Ü. (2020). Evaluation of Teachers' Perception of Effective

Communication Skills According to Gender. *African Educational Research Journal*, 8(1), 134–138.

Yeşil, H. (2010). The relationship between candidate teachers' communication skills and attitudes towards the teaching profession. *Procedia-Social and Behavioral Sciences*, 9, 919–922.

Yuliana, A. C., Nurhuda, V. Nv., Ngadhimah, M., & Sidiq, U. (2023). Strategi Komunikasi Efektif dalam Pembelajaran Anak Usia Dini di RA Tahfizh Al Furqon Ponorogo. *Excelencia: Journal of Islamic Education & Management*, 3(01), 181–192.