

**Research Article**

# Handwriting Habituation in Gen-Z Literacy Improvement with Brainwriting Method

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**Abstract.**

Generation Z is coming of age in the digital era where computer technology and mobile devices have become very common. They are accustomed to computer keyboards and touchscreens rather than pens and paper. The ability to write on digital devices such as smartphones, tablets, or laptops has replaced much of the need for writing by hand. However, handwriting is a fundamental skill in literacy upgrades. This descriptive qualitative research explores how efforts to handwriting habituate Gen Z in enhancing literacy using the brainwriting method. The retrieval data methods used are observation, interviews, and literature analysis involving student samples with specific criteria. The study's results indicate several factors of the respondents who infrequently write by hand, the exploration of the use of the brainwriting method, and its impact on the success of literacy among them. The outputs such as enhanced critical thinking, creativity, and communication that is not unilaterally dominated.

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**Keywords:** Gen Z, handwriting, brainwriting, literacy

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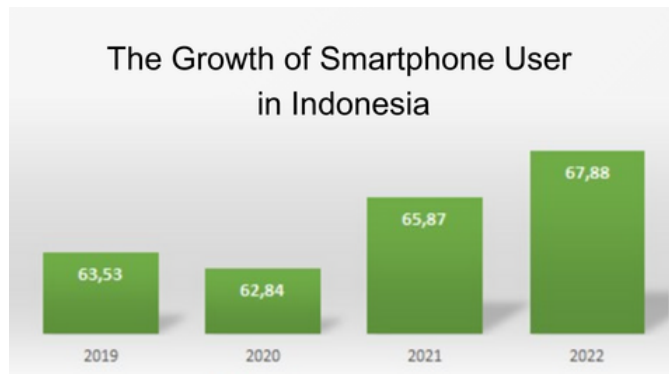
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## 1. Introduction

The presence of technology is affecting darting alterations which can ease various aspects in our lives, the sophistication can be found of smartphone utilization with various features and application. Even internet users use cellular phone devices - *smartphones* (Indonesia Digital Report, 2022) to meet their daily needs compared to accessing

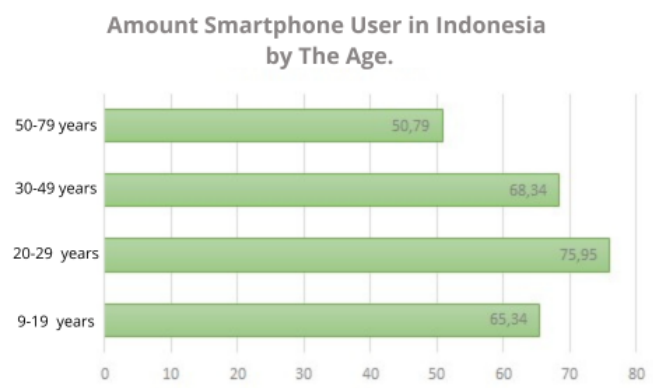
According to Badan Pusat Statistik (BPS), the growth of using Information and Communication Technology (ICT) in Indonesia is experiencing significant growth. Amount population who are using smartphones continues to increase, in the year of 2019 there is 63,53 percent followed by the year of 2020 reaching 62,84 percent. In the year of 2022 recorded 67,88 percent majority population in Indonesia already using smartphones. This number is increase if it is compared with the condition in the year of 2021 which reaches 65,87 percent.

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**Figure 1:** Smartphone users in Indonesia. (Source: *Badan Pusat Statistik, 2022*).

Snoop the proportion of *smartphone* ownership from various groupings such as differences of region, age, gender, and others. Based on statistical results from Pusat Penelitian dan Pengembangan Aplikasi Informatika and Informasi Komunikasi Republik Indonesia (Puslitbang Aptika and IKP, in 2022) Kementerian Komunikasi dan Informatika Republik Indonesia, which are interesting for researchers that's presentation for using *smartphones* based on the age aspect is obtained that between 9 – 19 years old indicate the high-enough point. The golden age is the golden era of humans. This age is an important period for someone's growth, not from physical aspect only, but from cognitive skills up to mental health (Ebi CCH, 2017).



**Figure 2:** Amount Smartphone Users in Indonesia By the Age (Source : Puslitbang Aptika IKP Kominfo, 2022).

The massive impact from the attendance of smartphones for the golden age generation, one of which is decline in their activity, is handwriting directly. Handwriting may look like an archaic activity that is no longer relevant. However, handwriting has values and benefits which are still special in this modern era. Generation Zillennial (Generation Z) Culture, which was born around in the middle of 1990s and in the first of 2010s (Herawati et al., 2022), marked by unique characteristics that formed by the digital era, globalization, and social norm's change. Comprehending and writing about the culture

of Generation Z needs a different approach because it includes some perspectives, values, and trends.

Nonetheless the technology has given a lot of ease to access information, literacy is stay become the key skills of ability that must be mastered by the Generation Z. Literacy not only encompasses the ability of reading and writing (UNESCO on FD Lestari, 2021), but also the ability of critical thinking, analyzing, and compiled ideas clearly. Therefore, there is a seriousness to consider about how to habituate handwriting, so that the relevance can increase Generation Z literacy culture in this digital era.

From the background, the researchers can propound the problem formulation that is “How the effort of the handwriting habituate in improving Generation Z’s literacy ability with *brainwriting* method”. The purpose of this study is to understand the brief description of *brainwriting* methods to improve the handwriting habits in Generation Z’s circle.

## 2. Methods

This research is using a qualitative approach which yields the data descriptively, so that enables the author to develop the research from the obtained data result (Moleong, 2018). The data retrieval which is used is a survey, interview, and literature analysis implicating the representative sample. In this research which become the research subject is a person who can give obvious and in-depth information wise. Sample determination not based on statistical counting. The chosen sample function as to get maximum information, not generalized (Sugiyono, 2016).

Consequently, determined retrieval research subjects are using a purposive technique which is retrieval of the data source with certain consideration, suitable for the researcher criteria. Those criteria that is: Semester 1 (one) college student batch of 2023/2024 Scholar Program of Adab and Cultural Sciences Faculty UIN Sunan Kalijaga Yogyakarta which have age among 17 (seventeen) until 22 (twenty-two) years; pass activity of Learning Socialization for New College Student; Representative of all Study Program in Adab and Cultural Sciences Faculty UIN Sunan Kalijaga. Based on the criteria above, so the research subject needed by researcher come from 4 (four) Study Program that is College Student of Library Science, Arabic Literature, English Literature, and Historical Islamic Culture.

### 3. Results and Discussion

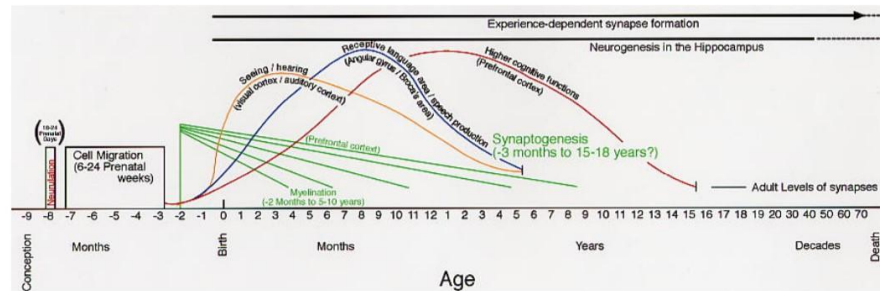
Such as cited from (Shaturaev, 2019), during the last one decade, a big research (Berninger & Swanson, 1994; Graham et al., 1997) has investigated the role of handwriting in the writing process and the findings result are very interesting. The handwriting is not just motoric activity, but considered as a “language thru the hand” The findings from this research showing that *orthographic* element and memory.

Based on the result of research done by Karen Ray, et al. in the article entitled *The Relationship of Handwriting Ability and Literacy in Kindergarten: A Systematic Review*, strong evidence has been discovered that a facile handwriting ability affects the letters and sound knowledge. Moreover, there is evidence which laced ability to write letters with spelling, reading a word, and phonological skill. This result supports the idea that handwriting skills have benefit impact on literacy.

Literacy is based on the traditional concept that individuals who have literacy’s skill are who can read and write (Irianto & Febrianti, 2017). Despite literacy definitions having developed in a row with the advance of technology and change in how we have interacted with information, the foundation of reading and writing stay become an important pillar in literacy culture. Reading skills enable individuals to access various sources of information, while writing skills are enable to convey thought and their ideas effectively. In the digital era which is filled with online information (in the network), this skill stays relevant, while literacy also covers skills to criticize, understand, and actively participate in digital environments which are complex.

In this study, the literacy which become research object specialized for Generation Z, born on year 2000s and brought up at year 2010s era, is a unique group in the history because they growth in the period who witnessed by most profound change in this modern era. Generation Z grows up when technology develops so fast, such as web, internet, smartphone, laptop, and digital media, (Dangmei et al.,2016) has become an essential part of their daily life.

They are the generation who have unlimited access to information, until Generation Z many a time called *Generation C*, which one of them means “*connected*”, as a representative from “*connected to the internet*” (Dolot, 2018) or connected with internet globally. This is because their growth period is accompanied with digital transformation, which has also constituted the way they interact, study, and participate in literacy culture who are competent with the advancement of technology.



**Figure 3:** Brain Development along human life according to Thompson and Nelson (Source: Bick and Nelson, 2015).

In an article, (Thompson & Nelson, 2001) give the best illustration about human brain development along with their life until elderly. That infographic describes several important events in the development and mechanism of brain work when receiving and forwarding stimulation to the nerve center, then controlling that information to produce the human body response. This case covers what happens when a baby is still in the womb, such as formation of the neural tube and cells movement on the brain. Besides that, the graphic also shows the important stage after a child is 3 years old, just like synapses development and myelination. On the graphic also highlight the synapses forming which influenced by experience and the growth of nerve cells in the crucial area of brain which called hippocampus along the someone life.

Human brain development is a process which is very complex, with various primary stages in understanding the way functioned brain and interaction with the world around. Several research such as cited from (Shaturaev, 2019) above shows that hand usage, especially on handwriting form, not just mere motor activity, but also is a brain communication tool. Orthographic elements and the skill of remembering letters evidenced have a significant role in the handwriting process, even beyond than motoric skills role.

Other than that, brain development also includes another important events, such as synapses forming, myelination, and the growth of nerve cells in the area like a hippocampus, which all of this influential at the cognitive skill and human comprehension about the world around. The combined research about handwriting and the brain developmental understanding overall give deeper insights about complexity of the human brain and how the experience and genetic factor plays the role in the formation.

If someone's brain is trained and developed for do the writing activity from an early age, then their writing habituation potential can be developed maximally. Habituation is an action which runs on a routine basis and repeatedly (Marwiyati, 2020). This concept describes how someone, through their habits, carries out the activity without long

thinking needed, because that activity has become an attached part of their routine. This habit is the result of action taken consistently until it becomes a pattern which runs without much thought effort, because it has become a norm in daily life.

Researchers do the observation and interview some respondents. Interview guidelines which become the researcher handle, is transcribed at this table:

TABLE 1: Interview Guidelines.

No	QUESTION
1.	Do you often do handwriting? If yes, how often do you do it?
2.	What is the reason for you to do handwriting?
3.	What is your impression when you do handwriting compared to writing using an electronic device?
4.	Do you feel that handwriting influences the way you think or remember information?
5.	How has technology usage such as cell phones and computers has influenced handwriting habits?
6.	Do you feel there is a certain situation where handwriting is more effective or more important than using electronic devices?
7.	Have you heard or seen an adult person or the previous generation which have a handwriting habit? What can you learn from their experience?
8.	Write it by hand, anything which appears in your mind now!

Source: Research data processing, 2023

Respondents have a variety background of reasons that affect their abilities with handwriting. However, it is important to remember that this generalization and invalid for each individual in Generation Z. There are crucial factors that impact and make them not very enthusiastic to do handwriting, including:

1. Digital Technology

Generation Z's growth has matured in this era when computer technology and mobile devices are common. The respondents are more familiar with computer *keyboard* and touchscreen than pen and paper. The ability to write on digital devices like *smartphones*, tablets, or laptops is already replacing almost all of the necessities of handwriting.

2. Quick Communication

Generation Z is inclined to habitual by quick communication through messages text, email, and social media. It enables them to communicate efficiently without a long handwriting. Message text is usually more practical than writing letters or handnotes.

3. Digitalization of Education

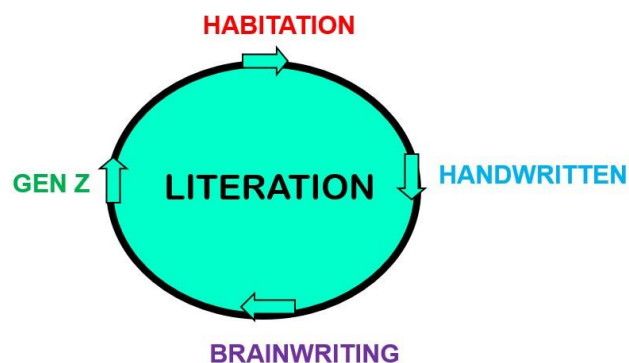
The education system, even if it is in Indonesia or international class, has significantly changed with digitalization. Digital textbooks, laptops, and other devices that are used for education decrease the habit of handwriting in an academic context.

#### 4. Decreasing Handwriting Skill

There are a handful of users who do handwriting and it causes Generation Z not to have habitual writing repetitive time frequency, routinely or periodically even for a long time period, as a consequence, they cannot have handwriting ability. It can make them feel unpleasant, not have self-confidence, and not have a skill for manual writing.

#### 5. Efficiency Preference

The respondents are inclined to find more efficient ways to solve their jobs. In many cases, typing on digital devices can be faster and more practical instead of handwriting, especially with a lot of intelligent and sophisticated applications available on their *smartphones*, it can solve their assessment and academic problems clearly, and the correctness is validated by the academic practitioners.



**Figure 4:** Design of the Increase of Literation. (Source: Researcher Infographic, 2023).

The habit of handwriting cannot be facile instantly but with exercise, practice, and accustomed to it. This problem should have a solution in order for literation in Generation Z can be enhanced, the one that can be attempted is the utilization of the *brainwriting* method. Brainwriting is a method that can incline each individual to describe their ideas or concepts in writing (Sumartini & Hernawan, 2019). The purpose of the handwriting technique is to form or develop ideas in writing (Haryadi, 2019).

The brainwriting method is one of the creative techniques used to produce ideas and solutions whether individually, collaborated, or team group. This technique can express the ideas about the main problem or something else in writing that was developed

by scientists at Battelle Institute in Frankfurt, Germany (Michalko, 2004). This method resembles *brainstorming* but has some important differences such as anonymities and iterative, in which the surroundings do not know who the writer of the specific ideas and there is an improvement if there is a *broken message*.

Here is the guidance to apply the *brainwriting* technique for generation Z: First of all is preparing the group, make sure the group consists of members that have backgrounds, skills, or interests that are relevant to the project or the problems to solve. After that is the writing identity step anonymously, but it is optional. This option can do for some cases, it means they cannot know who is the creator of the specific ideas. It can decrease the obstacles that may appear if somebody feels shy or frightened to talk;

The third step is explaining briefly the purposes of this session and the rules so that all of the members understand that the focus of the session is creating ideas in writing, without any criticism and ascertaining that the writing can be read by other people; The next is determining format, select the writing format that will be used, for example, each members have specific paper colors, or added *sticky note* to share idea in writing; Decide the theme or questions that will be the focus problem or narration that want to answered, this can be open-ended questions or specific questions such as “How can you increase your experiences as library *users*?” or “Write the ideas to promote the library’s services! Do not forget to make sure that there is a time estimated, set the time limit for each step. For example, 5-10 minutes to create the idea for the first phase, the middle, and the final. As for the writing scheme here will be done step-by-step successively, not directly executed;



**Figure 5:** Students finish writing their ideas. (Source: Researcher documentation,2023).



The next process that is most important is *brainwriting*, during this step, each member must write their ideas that are suitable to the theme or the selected questions. Encourage them to write their ideas as much as possible in a given time; From their exchange ideas, ask the member to change the paper or share with their friends. After that, the members who got the notes can construct the ideas or add new ideas based on preconceived ideas.

If it is *missing out*, repeat the previous step or several times as needed. This step is iteration because it can enrich their idea and can give a different perspective; After some iteration, the next is the evaluation step in which the group discusses their ideas. The next step is choosing the most interesting or relevant ideas to be implemented; The last step is further action, where after choosing the ideas, they can decide to implement the ideas in a project or a suitable solution.

This method has been tested 3 times in meetings by the researchers with the respondents. The impact of *brainwriting* to increase iteration can aid them in collaboration effectively to produce creative ideas and solutions for various problems. It gives a chance for Generation Z to contribute equally, in order to solve the problems of domination bias in groups that happens oftentimes in traditional brainstorming methods, they can express their ideas without any pressure to appear in public.

In the *brainwriting* method, handwriting activity is the one of basic abilities in literacy, there is significant relevance with the literacy increase, the handwriting process enables them to develop the ability of text comprehension, vocabulary increase, and increase the ability of critical thinking. These points can increase the comprehension and retention of information written by someone. Practice handwriting involves many different brain areas that can help in increasing cognitive ability and motoric increase.

In point of fact, handwriting is still needed in daily life, out of education context. In spite of the technology has changed their way of communicating, there is an extant situation which in Generation Z needs to express themselves with their handwriting, such as making personal notes, applying forms, and writing greeting cards.

For the last, handwriting is a homage to the culture and tradition. Handwriting is an important section from human history. Therefore, keeping this ability is the way to preserve our cultural heritage.

## 4. Conclusion

Although there is a decrease in handwriting within Generation Z circle, many individuals in this generation still respect the handwriting art. Important to remember, that handwriting skill with *brainwriting* method can decrease if not familiarized routinely. There is pleasure and various excellence in handwriting in the digital era, Among others, brain memory becomes better, creativity stimulation (scribble, drawing) and is able to strengthen the social bonds so that it appears in-deep connection than just sending the digital message.

Because Generation Z is not the monolithic group, and the individuals in this generation may have experience and different perspectives. When doing study about Generation Z habits, researchers make an effort to still be open to variety and complexity, as well as using empathy in their research to ensure accurate drawing

about values and their lifestyle. Therefore, in the literacy culture, keeping the balance among handwriting and using technology or *mobile* devices is a key to maintain the effective handwriting skill while still follow the technology development.

## References

- [1] A., S., Sinha, P., & Ugwulebo, J. E. E. (2022). Digital literacy skills among African library and information science professionals – an exploratory study. *Global Knowledge, Memory and Communication*, ahead-of-print(ahead-of-print)<https://doi.org/10.1108/GKMC-06-2022-0138>
- [2] Azizah, A. (2015). Pembelajaran Menulis Puisi dengan Memanfaatkan Teknik Brainwriting pada Peserta Didik SD/MI Kelas V. *Jurnal Ilmiah Pendidikan Dasar* Vol. II No.2 Juli 2015, 137.
- [3] Dangmei, J., Singh, A., & Professor, A. (2016). Understanding The Generation Z: The Future Workforce. In *South-Asian Journal of Multidisciplinary Studies (SAJMS)* (Vol. 3). <https://www.researchgate.net/publication/305280948>
- [4] Digital 2022: Indonesia. Data Reportal. <https://datareportal.com/reports/digital-2022-indonesia>
- [5] Dolot, A. (2018). The characteristics of Generation Z. *E-Mentor*, 74, 44–50. <https://doi.org/10.15219/em74.1351>
- [6] Ebi CH, S. (2017). *Golden Age Parenting: Memaksimalkan Potensi Anak di Usia Emas* (Erlinadani, Ed.). Psikologi Corner.

- [7] Haryadi. (2019). Pengaruh Model Pembelajaran Brain Writing terhadap Kemampuan Mahasiswa Menulis Artikel di Media Massa. <http://jurnal.um-palembang.ac.id/index.php/bisastra/index>
- [8] Herawati, I., Rizal, I., Amita, N., & Psikologi, F. (2022). The Impact of Social Media On Fear of Missing Out among Z Generation: A Systematic Literature Review. In *Journal of Islamic and Contemporary Psychology* (Vol. 2, Issue 2).
- [9] Jin, K.-Y., Reichert, F., Cagasan, L. P., de la Torre, J., & Law, N. (2020). Measuring digital literacy across three age cohorts: Exploring test dimensionality and performance differences. *Computers & Education*, 157, 103968. <https://doi.org/10.1016/j.compedu.2020.103968>
- [10] Linnes, C., & Metcalf, B. 2017. iGeneration and Their Acceptance of Technology. *International Journal of Management & Information System*. Vol. 21. No. 2, pp. 11-26
- [11] Marwiyati, S. (2020). Penanaman Pendidikan Karakter melalui Pembiasaan.
- [12] Michalko, M. (2004). *Permainan Berpikir = (Thinkertoys)* . Kaifa.
- [13] Moleong, L. J. (2018). *Metodologi Penelitian Kualitatif*. PT Remaja Rosdakarya.
- [14] Irianto, P. O., & Febrianti, L. Y. (2017). Pentingnya Penguasaan Literasi bagi Generasi Muda dalam Menghadapi MEA.
- [15] Irene B. Levitt, Erlia Simamora (translator). (2005). *Brain Writing*. Bhuana Ilmu Populer.
- [16] Ray, K., Dally, K., Rowlandson, L., Tam, K. long, & Lane, A. E. (2022). The Relationship of Handwriting Ability and Literacy in Kindergarten: A Systematic Review. *Read Writ*, 35, 1119–1155.
- [17] Shaturaev, J. (2019). The Importance of Handwriting in Education. *International Journal of Advanced Research*, 7(12), 947–954. <https://doi.org/10.21474/IJAR01/10237>
- [18] Sumartini, & Hernawan. (2019). Model Brain Writing dalam Meningkatkan Kemampuan Menulis Wawangsalan. *Lokabasa*, 10(2), 214–225. <https://doi.org/10.17509/jlb.v10i2>
- [19] Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif, R&D*. PT. Remaja Rosdakarya.
- [20] Thompson, R. A., & Nelson, C. A. (2001). Developmental Science and the Media: Early Brain Development. *American Psychologist*, 56, 5–15.
- [21] Mustofa, M. B., & Wuryan, S. Urgensi Komunikasi Interpersonal Dalam Al-Qur'an Sebagai Pustakawan. *Al-Hikmah Media Dakwah, Komunikasi, Sosial dan Kebudayaan*, 2020; 11(2): 85-94. <https://doi.org/10.32505/hikmah.v11i2.2544>
- [22] Mustofa, M. B., Febrian, M. K., & Wuryan, S. Strengthen Interpersonal Communication in Improving Library Services for People with Disabilities.

- Wasilatuna: Jurnal Komunikasi dan Penyiaran Islam, 2023; 6(02): 64-75.  
<https://doi.org/10.38073/wasilatuna.v6i02.1029>
- [23] Wuryan, S., Mustofa, M. B., Saputra, R., & Cahyani, M. P. Pengaruh Gaya Komunikasi Kepemimpinan dalam Pengelolaan Organisasi: Tinjauan Analisis. KOMUNIKASIA: Journal of Islamic Communication and Broadcasting, 2023; 3(1): 1-23.  
<https://doi.org/10.32923/kpi.v3i1.3349>
- [24] Mustofa, M. B., Sugara, G. T., & Wuryan, S. Komunikasi Interpersonal Sebagai Strategi Untuk Meningkatkan Kepuasan Pengunjung: Sebuah Tinjauan Literatur di Perpustakaan. Al-Idza'ah: Jurnal Dakwah dan Komunikasi, 2023; 5(1): 30-46.  
<https://doi.org/10.24127/al-idzaah.v5i1.3571>
- [25] Amaliah, E., Mustofa, M. B., Kesuma, M. E. K., Wuryan, S., Ramadaniah, D., & Tamara, S. D. Peranan Teknologi Informasi Komunikasi Sebagai Media Pelayanan di Perpustakaan INSTIDLA. Tik Ilmeu: Jurnal Ilmu Perpustakaan dan Informasi, 2022; 6(2): 279-294. <http://dx.doi.org/10.29240/tik.v6i2.5075>
- [26] Mustofa, M. B., Iqbal, R., Budianto, A., & Hidayat, N. Integrasi Tradisi Literasi Keagamaan (Yasinan) Dalam Terciptanya Budaya Kerukunan Masyarakat. Nusantara Journal of Information and Library Studies (N-JILS), 2022; 5(1): 51-59.  
<https://doi.org/10.30999/n-jils.v5i1.2002>
- [27] Mustofa, M. B., Kesuma, M. E. K., Yunita, I., Amaliah, E., & Rahmawati, D. I. Pemanfaatan Media Pustaka Digital Dalam Membangun Perpustakaan Desa Berbasis Inklusi Sosial Di Masa Pandemi. Jurnal Informasi, Perpustakaan, dan Kearsipan (JIPKA), 2021; 1(1): 1-13. <http://dx.doi.org/10.26418/jipka.v1i1.51150>
- [28] Mustofa, M. B., Wuryan, S., & Meilani, F. Komunikasi Verbal dan Non-verbal Pustakawan Dan Pemustaka Dalam Perspektif Komunikasi Islam. At-Tanzir: Jurnal Ilmiah Prodi Komunikasi Penyiaran Islam, 2021; 12(1): 22-36.  
<https://doi.org/10.47498/tanzir.v12i1.510>
- [29] Mustofa, M. B., Wuryan, S., & Husnita, T. J. Komunikasi Vertikal Dan Horizontal Antara Pustakawan Dan Pemustaka Dalam Layanan Perpustakaan Perspektif Islam. Al-Idza'ah: Jurnal Dakwah dan Komunikasi, 2021; 3(01): 1-9. <https://doi.org/10.24127/al-idzaah.v3i01.1517>
- [30] Mustofa, M. B., Putri, M. C., Wuryan, S., & Rahmawati, D. I. Aktivitas Komunikasi Interpersonal Pustakawan Dalam Meningkatkan Etos Kerja. Nusantara Journal of Information and Library Studies (N-JILS), 2021; 4(1): 89-102. <https://doi.org/10.30999/n-jils.v4i1.1293>
- [31] Mustofa, M. B., Wuryan, S., Sholiha, N. A., Arif, M. M., & Musa, M. Kontribusi Komunikasi Interpersonal dalam Perspektif Islam di Lingkungan Organisasi UIN

Raden Intan Lampung. KOMUNIKASIA: Journal of Islamic Communication and Broadcasting, 2021; 1(1): 56-68. <https://doi.org/10.30999/n-jils.v4i1.1293>

- [32] Mustofa, M. B., Silvia, I., & Basyori, A. Proses Komunikasi Interpersonal Dalam Lingkup Perpustakaan Melalui Model Konseling Layanan Pemustaka. Jurnal El-Pustaka, 2021; 2(1). <http://dx.doi.org/10.24042/el-pustaka.v2i1.8769>