demandia

ISSN 2477-6106 | E-ISSN 2502-2431 | **http://bit.do/demandia**
Jurnal Desain Komunikasi Visual, Manajemen Desain dan Periklanan
Vol. 10 No. 02 (September 2025) | DOI: 10.25124/demandia.v10i2.9431

# AI AS NARRATIVE COMPANION: ENHANCING THE PHOTOVOICE METHOD FOR THE DEAF THROUGH HUMAN-AI COLLABORATION

Yosephien Reynalda Prananda Wibowo
Visual Communication Design, School of Creative Industry, Ciputra University
CitraLand CBD Boulevard, Made, Kec. Sambikerep, Surabaya, Jawa Timur 60219
*Email : yosephien.wibowo@ciputra.ac.id

*Received: 2025-06-26* *Revised: 2025-08-06* *Accepted: 2025-09-17* *Published: 2025-09-29*

**Abstract:** Verbal communication can be extremely difficult for deaf people, so visual media and other forms of expression are crucial. The photovoice approach uses photography as an effective medium for expressing feelings and personal experiences. A participatory method called photovoice allows people to tell their stories through pictures, particularly in situations where words are insufficient. This study looks into how artificial intelligence (ChatGPT) might be used to help the deaf community during the photovoice narration stage. The study emphasizes AI's capacity to improve story structure, emotional depth, and clarity through a qualitative methodology that includes in-depth interviews and experimental comparison between self-written and AI-assisted narratives. The results indicate that participants respect their own expression, many also believe AI may help them articulate complex reflections and better organize their ideas. Participants recognized AI's value in enhancing storytelling, despite reservations about its often impersonal tone. Therefore, AI is most suited as a contemplative companion rather than a replacement, promoting diversity while maintaining the therapeutic and human centered of photovoice. This study adds to the growing body of knowledge regarding human-technology collaboration, specifically in the areas of inclusive, therapeutic, and creative communication practices for underserved groups.
**Keywords:** artificial intelligence, deaf people, photovoice, visual communication media

***Abstrak:*** *Komunikasi verbal sering menghambat Teman Tuli dalam berkomunikasi,, sehingga media visual dan bentuk ekspresi lainnya sangat penting. Kegiatan photovoice yang menggunakan fotografi sebagai media, efektif untuk mengekspresikan perasaan dan pengalaman pribadi. Metode partisipatif yakni photovoice memungkinkan orang untuk menceritakan kisah mereka melalui gambar, terutama dalam situasi di mana komunikasi verbal terhambat. Penelitian ini melihat bagaimana kecerdasan buatan (ChatGPT) dapat digunakan untuk membantu komunitas tunarungu untuk membuat narasi pada tahap narration pada kegiatan photovoice. Studi ini mencari tahu bagaimana AI dapat membantu Teman Tuli untuk menyusun struktur cerita, kedalaman emosional, dan kejelasan. Metodologi kualitatif yang digunakan berupa wawancara mendalam dan*

*perbandingan eksperimental antara narasi yang ditulis sendiri dan narasi yang dibantu AI. Hasil menunjukkan bahwa Teman Tuli menghargai ekspresi mereka sendiri, banyak juga yang percaya bahwa AI dapat membantu mereka mengartikulasikan refleksi yang kompleks dan mengorganisir ide-ide mereka dengan lebih baik. Teman Tuli mengakui nilai AI dalam meningkatkan kemampuan bercerita, meskipun ada keberatan tentang nadanya yang sering kali tidak personal. Oleh karena itu, AI berperan sebagai pendamping kontemplatif daripada sebagai pengganti, mempromosikan keragaman sambil mempertahankan terapi dan berpusat pada manusia dari photovoice. Studi ini menambah pengetahuan yang berkembang mengenai kolaborasi manusia dan teknologi, khususnya di bidang praktik komunikasi yang inklusif, terapeutik, dan kreatif untuk kelompok-kelompok terpinggirkan.*
***Kata kunci:** kecerdasan buatan, media komunikasi visual, photovoice, teman tuli*

## INTRODUCTION

Deaf people face challenges in verbal communication and needs alternative media to express their feelings. The partial or complete loss of hearing can hinder communication in daily activities (Effendi, 2009; Liza et al., 2020; Somantri, 2006). Verbal communication is often insufficient in conveying their experiences and emotions; thus, visual media plays an important role in helping deaf individuals communicate more effectively (Alias et al., 2019).

One of the visual communication media that can be utilized is photography. According to Sudarma (2014), photographs serve as a medium for conveying messages or ideas to others. With the advancement of digital technology, photography has become a democratic medium accessible to people from all walks of life. Moreover, photography offers a powerful way to overcome communication barriers among deaf individuals and provides opportunities for self-expression for those who face limitations in verbal communication.

Photovoice is a participatory method in which individuals take photographs to share their stories and experiences. Through photovoice, participants identify, document, and present the strengths and concerns of their communities from their own perspectives using photographic technology (Wang and Burris, 1997). The process of using art as a communication medium to express

complex ideas and emotions often too difficult to articulate verbally is part of a therapeutic approach (Farrugia, 2022; Glaister, 1994). Photography within the photovoice method has proven to be a powerful form of visual communication, particularly in constructing narratives that are otherwise difficult to express in words (Wibowo and Ahmad, 2025).

In a book titled Photovoice Research in Education and Beyond by Latz and Mulvihill created in 2017, photovoice activities are divided into 8 stages: identification, invitation, education, documentation, narration, ideation, presentation, and confirmation (Latz, 2012; Latz and Mulvihill, 2017). But in the practice of photovoice activities with Deaf People, they experience obstacles when doing these 8 processes. Some stages were not fully effective for Deaf People due to limited vocabulary and sentence structure. One of the most affected stages is when doing photovoice activities is the narration stage. In the narration stage, Deaf People is asked to write and explain the story behind their photo. Deaf friends are often confused about what they think. This limitation frequently results in the story they create not matching what they want. The narrative that is made is sometimes not clear enough and only tells the surface, without any deeper reflection and personal meaning (Wibowo and Ahmad, 2025). Although a lot of research has been done on photovoice, not much has been done to overcome these issues with new technology.

By combining modern technology with human talents to improve sustainability, resilience, and well-being, Industry 5.0 marks a turn toward human-centric and sustainable manufacturing systems (Verma, 2024). While appreciating human creativity and knowledge alongside technical advances, this innovation aims to provide smarter, more efficient, inclusive systems (Zafar et al., 2024). In this framework, cooperation between people and technology becomes vital not just in industrial fields but also in spheres including social involvement and visual communication. The photovoice technique is one such application that can be

modified for disability groups, such as the deaf community. Its application must be modified, therefore, to accommodate each person's unique requirements and circumstances (Catalani and Minkler, 2010; 2022; Wang and Burris, 1997; Wibowo, 2024).

Although photovoice has been extensively investigated as a participatory approach for marginalized people, less research has focused on the function of AI in improving narrative expression for deaf individuals, especially during the narration phase. Current literature predominantly emphasizes physical expression or therapeutic photography, while insufficiently addressing technological augmentation. Artificial intelligence (AI) offers fresh possibilities to close this gap, especially with regard to conversational models like ChatGPT. AI can help people build stories by making them think more deeply, organize their thoughts, and express complicated ideas. However, the incorporation of AI in photovoice research, particularly for the deaf community, is still completely unexplored, despite the fast expansion of AI applications in assistive and accessibility technology.

The objective of this project is to examine the integration of artificial intelligence (AI) with photovoice to assist deaf participants in developing deeper and accessible narratives, utilizing the images they create as a way of self-expression.

## METHODS

This study used an exploratory qualitative methodology to gain a deeper understanding of how artificial intelligence (AI) might support the deaf community's photovoice technique's storytelling process. Five deaf people from Karya Seni Tuli community were chosen to take part in the study. These were people who have trouble communicating every day. The small number

of participants was chosen on purpose to make sure that there was a lot of discussion and meaningful connection during the photovoice sessions. Participants exhibited a range of communication capabilities, encompassing mild to extreme hearing loss. Everyone who took part in the study willingly completed an informed permission form, agreeing to the research methods, possible hazards, and the use of their data for research purposes.

Interviews and experiments were the two primary methods used to collect data. Two groups participated in in-depth interviews: first, therapeutic photography practitioners to find out more about their perspectives on the possible application of AI in visual therapy settings. The interviews with practitioners aimed to examine their experiences in therapeutic photography, including how the therapeutic photography process normally works, their views on integrating AI in therapy settings, potential benefits and disadvantages, and whether they would recommend such integration in future research. Meanwhile, interviews with deaf participants focused on the challenges they face in storytelling, their everyday communication struggles with non-deaf individuals, and the impact or benefits they might experience from using AI as a supportive tool. The interview questions were created by looking at the literature and talking to professionals in deaf communication and participatory research. The guiding framework was adapted from the SHOWeD paradigm frequently employed in photovoice studies (Wang and Burris, 1997) to enhance language accessibility. In this experiment, the same image was used to compare two distinct narrative styles.

During the photovoice activity, the Deaf participants instantly wrote the first narrative based on how they personally interpreted the image. The second narrative was created using ChatGPT by importing pictures and a pre-made prompt format. ChatGPT has been trained to comprehend the context of therapeutic arts, such as photography, in order to provide relevant

narratives that help Deaf people in creating stories. Prior to generating narratives, ChatGPT was 'trained' through a dialogue with the researcher, in which it was given background information about photovoice, include photovoice function, goals, and the therapeutic impact. The AI was then positioned as a facilitator within the photovoice activity and asked to create a structured narrative prompt template. This template was designed specifically to help deaf individuals navigate common communication barriers in storytelling, providing guided reflection for the narration stage.

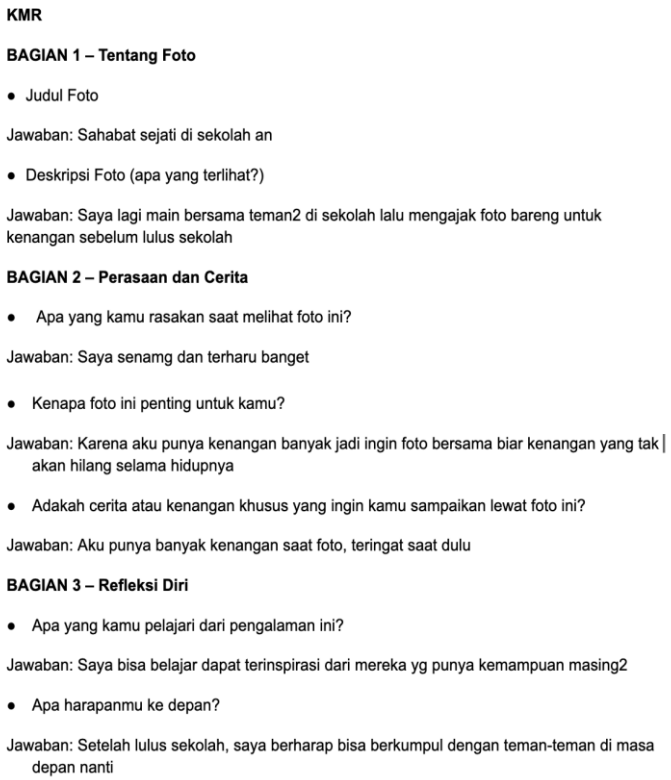
The owners of the photos then validated the AI-generated tales by scoring narrative style, self-representation, emotional expression, story clarity, depth of reflection, and sense of pride using a Google Form questionnaire. By analyzing the responses qualitatively, the effectiveness of AI as a partner in the process of developing visual tales for the deaf population was measured.

This study is limited in its focus to the narration stage of the photovoice method and does not explore other stages. The research specifically targets the deaf community as its primary participant group, and findings are based on a small, purposive sample. Therefore, results may not be generalizable to other disability groups or broader populations without further validation. The study also focuses solely on the application of AI-supported narration, rather than evaluating the full photovoice process or other AI tools beyond ChatGPT.

This study secured ethical approval from the deaf participant. Before collecting any data, all participants gave their informed consent. Participants were advised of their freedom to withdraw at any stage without penalty. All data were anonymized to safeguard anonymity, and assurances were given that no personal data would be retained beyond the scope of this research.

## RESULTS AND DISCUSSION

The results show that ChatGPT could produce narrative prompts or templates that deaf participants may use to create stories based on their photos following a training session. These prompts were carefully developed after a training session in which the AI was contextualized with the principles and therapeutic purpose of photovoice. In Figure 1, the structured prompt consisted of three core sections: *About the Photo*, *Feelings and Story*, and *Self-Reflection*. These questions were created especially to help participants create stories that are more in-depth and thoughtful.



**KMR**

**BAGIAN 1 – Tentang Foto**

- Judul Foto

Jawaban: Sahabat sejati di sekolah an

- Deskripsi Foto (apa yang terlihat?)

Jawaban: Saya lagi main bersama teman2 di sekolah lalu mengajak foto bareng untuk kenangan sebelum lulus sekolah

**BAGIAN 2 – Perasaan dan Cerita**

- Apa yang kamu rasakan saat melihat foto ini?

Jawaban: Saya senamg dan terharu banget

- Kenapa foto ini penting untuk kamu?

Jawaban: Karena aku punya kenangan banyak jadi ingin foto bersama biar kenangan yang tak akan hilang selama hidupnya

- Adakah cerita atau kenangan khusus yang ingin kamu sampaikan lewat foto ini?

Jawaban: Aku punya banyak kenangan saat foto, teringat saat dulu

**BAGIAN 3 – Refleksi Diri**

- Apa yang kamu pelajari dari pengalaman ini?

Jawaban: Saya bisa belajar dapat terinspirasi dari mereka yg punya kemampuan masing2

- Apa harapanmu ke depan?

Jawaban: Setelah lulus sekolah, saya berharap bisa berkumpul dengan teman-teman di masa depan nanti

Figure 1. Filled narrative prompt by a KMR using a ChatGPT template
Source: Personal Documentation

In the first part, "About the Photo," participants were asked to visually explain the image's contents. Participants were prompted to examine their feelings and personal interpretations of the picture in the second section, “Feelings and Story.” These included how they felt when they looked at the picture, why it held significance for them, and whether it was a part of a treasured memory or story. The final section, *Self-Reflection*, focused on what the photo represented about their hopes or personal growth. This prompt design aligns with prior research by Latz and Mulvihill (2017), who emphasize the importance of guided reflection in photovoice for deeper narrative impact. The goal of this structured prompt was to enhance the reflective element of the photovoice technique while simultaneously promoting a more targeted, intimate, and significant narrative process. Once participants completed the structured prompt, ChatGPT generated narrative outputs using the filled information.


Figure 2. Narrative output generated by ChatGPT based on KMR completed prompt
Source: Personal Documentation

After processing a completed prompt from a deaf participant, ChatGPT produced the narrative output shown in the figure 2. The output is organized into three primary parts: (1) a thorough narrative that explains the picture's overall meaning; (2) a self-reflection section where individual insights are expressed; and (3) a hope or aspiration section that encapsulates the participant's expectations or wishes for the future. After this generating process, the participant evaluates the narrative to move on to the next phase. By filling out a structured Google Form created just for this evaluation, they are asked to select their favorite version between their initial self-written narration and the AI-generated one.

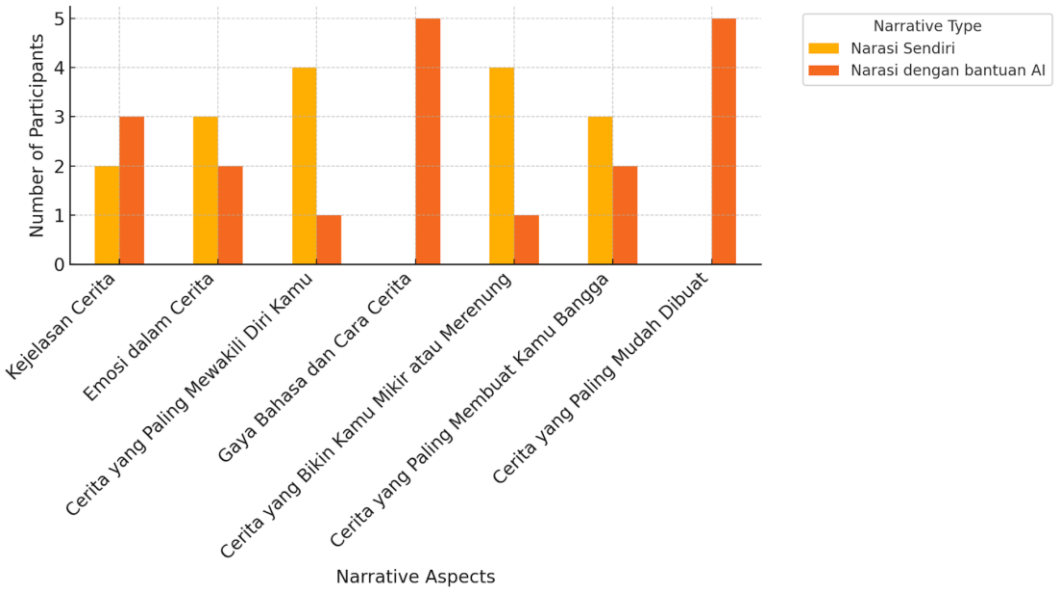



Figure 3. Comparison of narrative preferences based on questionnaire results
Source: Personal Documentation

The comparison of deaf participants preferred self-written versus AI-assisted narratives in terms of storytelling elements like clarity, emotional depth, self-representation, and ease of creation is depicted in figure 3. According to the results of the questionnaire, narratives with AI assistance

were favored in terms of their structure, clarity, and ease of composition. This suggests that AI can assist deaf people in creating more structured and expressive narratives. In contrast to the stories that were handwritten, new terminology and better organized narrative patterns developed as a result of the suggestions. The majority of participants indicated that they preferred the AI-generated narratives over the manual ones because they were thought to be more accurate, more emotionally resonant, and clearer. This supports findings by Catalani and Minkler (2010) who argue that technological assistance in participatory visual methods can enhance accessibility and confidence for marginalized communities. The use of AI led to the emergence of new vocabulary and more organized narrative flow, which may indicate enhanced cognitive framing, as also suggested byVerma (2024) in the context of AI-supported storytelling.

However, self-written narratives continued to be superior in terms of reflective quality, emotional depth, and personal representation, especially when it came to stories that invoked memories, inspired pride, and described lived events. These findings confirm critiques raised byKrisson et al (2022), who caution that although AI might augment structure, it may undermine individual voice and identity if not employed reflectively. A few participants also mentioned that the language in AI-generated stories seemed too formal or impersonal, which made it less reflective of their own identities. These results show that although AI works well as a narrative facilitator, reflective direction and validation are necessary to guarantee that the output is genuine and consistent with the participant's intended meaning. In order to maintain the emotional and unique integrity of each story, AI should be viewed as a contemplative partner that enriches the photovoice process rather than taking the place of the human in the narrative role.

This study's main outcome indicates that artificial intelligence (AI) may help deaf individuals create more meaningful and structured visual narratives. Artificial intelligence (AI) has been shown to speed up storytelling and provide a solution for people who struggle with vocal sentence formation. To guarantee that personal meaning is appropriately communicated, participant validation is still an essential step. AI can therefore serve as a narrative assistant rather than a substitute for introspection. In photovoice, the narration stage stands out as a crucial moment that can be enhanced with the help of technology.

The therapeutic benefits of photovoice aren't reduced by the use of AI. However, it creates fresh chances for more in-depth introspection and improved visual expression, especially for those who find it difficult to express meaning directly. With AI contributing as a facilitator rather than a replacement in the narrative process, photovoice is still deeply rooted in the ideas of human-centered design.

## CONCLUSION

According to the study's findings, artificial intelligence (AI) has great potential as a useful additional tool throughout the photovoice method's narration stage, especially for the deaf community, which struggles with verbal communication. AI has been demonstrated through experimentation and participant validation to assist deaf people in creating better organized, understandable, and expressive visual narratives. The AI-generated prompts enhanced participants' visual and reflective expressiveness by promoting the development of new language and narrative patterns. The results show that while some participants felt that the language employed by AI felt less

personal, the majority of participants felt supported in sharing their feelings and experiences through AI-assisted narratives.

While maintaining photovoice's therapeutic value, AI not only speeds up the storytelling process but also creates fresh possibilities for more in-depth contemplative exploration. By offering more responsive and inclusive channels for self-expression, AI is meant to reinforce human-centered design principles rather than take the place of humans in the creation of narratives. Maintaining the validity of personal meaning requires participant validation, which positions AI as a contemplative partner rather than a replacement for human meaning-making. These results confirm that the deaf community can benefit significantly from the integration of technology into participatory techniques like photovoice, which can act as a bridge toward more inclusive, democratic, and meaningful communication.

This study has several limitations. First, it involved only five deaf participants, which limits how far the findings can be applied to larger groups or other communities with communication challenges. Second, the research was done in a specific cultural and geographic setting, which may have influenced how participants interacted with AI and the photovoice method. Third, the study focused only on the narration stage and did not explore other parts of photovoice such as group discussion, image selection, or advocacy. In the future, research could include more people from different backgrounds, try this method with other disability communities, and compare results across cultures. Long term studies are recommended to see how this method helps people grow in confidence and expression over time.

**ACKNOWLEDGEMENT**

The authors express their gratitude to all those who helped make this study possible. The deaf community in particular deserves special recognition for their time, involvement, and significant contributions. The authors would also like to express their sincere gratitude to the School of Creative Industry, Universitas Ciputra, for providing the funding that supported this research. Sincere gratitude is also given to all those people and organizations who helped with this article's writing, both directly and indirectly. The support of family, friends, and colleagues has been extremely beneficial in completing this project.

**REFERENCES**

Alias, A., Azahari, M. H., Kamaruddin, N., Zahari, F., & Razak, F. A. (2019). Images as an Indicator for Deaf Students' Teaching and Learning: An Exploratory Study. In *Proceedings of the Regional Conference on Science, Technology and Social Sciences (RCSTSS 2016)* (pp. 47–53). Springer Singapore. https://doi.org/10.1007/978-981-13-0203-9_5

Catalani, C., & Minkler, M. (2010). Photovoice: A Review of the Literature in Health and Public Health. *Health Education & Behavior*. https://doi.org/10.1177/1090198109342084

Effendi, M. (2009). *Pengantar Psikopedagogik Anak Berkelainan*. Bumi Aksara.

Farrugia, A. M. (2022). A picture with a caption: Using photovoice as cultural self-reflection in communication sciences and disorders. *Journal of Communication Disorders*, *100*. https://doi.org/10.1016/j.jcomdis.2022.106277

Glaister, J. A. (1994). Clara's story: Post-traumatic response and therapeutic art. . *Perspect Psychiatr Care*.

Krisson, E., Qureshi, M., & Head, A. (2022). Adapting photovoice to explore identity expression amongst people with intellectual disabilities who

have limited or no verbal communication. *British Journal of Learning Disabilities*, *50*(1), 41–51. https://doi.org/10.1111/bld.12373

Latz, A. O. (2012). Toward a New Conceptualization of Photovoice: Blending the Photographic as Method and Self-Reflection. *Journal of Visual Literacy*, *31*(2), 49–70. https://doi.org/10.1080/23796529.2012.11674700

Latz, A. O., & Mulvihill, T. M. (2017). *Photovoice Research in education and Beyond: A Practical Guide from Theory to Exhibition*.

Liza, N., Kuntarto, E., & Kusmana, A. (2020). Pemerolehan Bahasa Anak Berkebutuhan Khusus (Tunarungu) Dalam Memahami Bahasa. *Jermal*, *1*(2), 89–97. https://doi.org/10.31629/jermal.v1i2.2214

Mabruroh, A. F., Gunarhadi, G., & Widyastono, H. (2022). A Photovoice Study Exploring Deaf Students Experiences during The COVID-19 Pandemic. *AL-ISHLAH: Jurnal Pendidikan*, *14*(1), 631–642. https://doi.org/10.35445/alishlah.v14i1.1120

Somantri, S. (2006). *Psikologi Anak Luar Biasa*. PT. Refika Aditama.

Sudarma, I. K. (2014). *Fotografi* (1st ed.). Graha Ilmu.

Verma, D. (2024). Industry 5.0: A Human-Centric and Sustainable Approach to Industrial Development. *International Journal of Social Relevance & Concern*, *12*(5), 17–21. https://doi.org/10.26821/ijsrc.12.5.2024.120507

Wang, C., & Burris, M. A. (1997). Photovoice: Concept, Methodology, and Use for Participatory Needs Assessment. *Health Education and Behavior*, *24*(3), 369–387. https://doi.org/10.1177/109019819702400309

Wibowo, Y. R. P. (2024). *Photovoice as a communication medium in the Deaf community: Case study of Karya Seni Tuli* . Institut Teknologi Bandung.

Wibowo, Y. R. P., & Ahmad, H. A. (2025). Implementasi Photovoice dalam Komunitas Tuli: Fotografi sebagai Medium Komunikasi Visual. *Nirmana*, *25*(1), 50–61. https://doi.org/10.9744/nirmana.25.1.50-61

Zafar, M. H., Langås, E. F., & Sanfilippo, F. (2024). Exploring the synergies between collaborative robotics, digital twins, augmentation, and industry 5.0 for smart manufacturing: A state-of-the-art review. In

*Robotics and Computer-Integrated Manufacturing* (Vol. 89). Elsevier Ltd. https://doi.org/10.1016/j.rcim.2024.102769

**This Page Is Intentionally Left Blank**