Navigating a Hearing City: Reflections on Urban Inclusivity from the Eyes of Deaf and Hard-of-Hearing Youths in Surakarta, Indonesia

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Abstract

Access to Information (ATI) for Persons with Disabilities (PwD) is a fundamental part of Human Rights, as stated in the Convention for Persons with Disability (CPRD). ATI ensures PwD receives and imparts information through their preferred method of communication. ATI is particularly important for Deaf people, who mainly communicate in sign rather than spoken language, to improve their lives. Indonesia recognizes the importance of ATI for PwD through Law No. 8 of 2016 on People with Disabilities. Despite the already-existing legal framework, using Indonesian Sign Language (Bahasa Isyarat Indonesia/BISINDO) in public spaces remains limited. Therefore, ensuring equity of access to information and opportunities for all is critical in building more inclusive cities. This research study reflects on the importance of inclusive communication methods, through the broader use of BISINDO, as means to improve ATI for Deaf people and foster more inclusive public spaces in a city. The study is conducted by Kota Kita Foundation, a civil society organization based in Surakarta, Indonesia, working to promote citizen participation in urban development in collaboration with the Surakarta chapter of the Indonesian Association for the Welfare of the Deaf (IAWD) and local arts collective, Ruang Atas.

For the research study, we used photovoice to capture the problems faced by Deaf youth in Surakarta, Indonesia, drawing on Deaf people's visual understanding of the world. Through the photos they took, participants shared that they face communication challenges daily, which has affected their experiences in three different aspects of life: education, employment, and self-confidence. The findings also point to opportunities for supporting local Deaf organizations in advocating for mainstreaming BISINDO at the city level. These efforts are crucial to ensure equal access for the Deaf community – bringing us closer to building an inclusive city for all.

Introduction

The paper presents findings and reflections on urban inclusivity through the use of photovoice as an inclusive methodology to capture the everyday realities of Deaf and Hard-of-Hearing young people in Surakarta (Solo), Indonesia.

Inclusive environments in cities are vital in ensuring equal accessibility, experience, and enjoyment for all citizens regardless of their age, gender, and abilities. The UN

Sustainable Development Goals underscores this aspect in Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable, with one of the target indicators (Target 11.7) specifically aiming to provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities by 2030. In further examining urban inclusivity, the paper looks to Patrick and McKinnon (2022) who highlighted three components in their working framework for enabling inclusive cities: People, which points to the daily experiences of persons with disabilities and their aspirations for a more inclusive city; Policy, which means the awareness, understanding, and opportunities of inclusive design and planning among policy makers; and Practice, which looks at the awareness and understanding of inclusive design among built environment practitioners.

The city of Surakarta, Indonesia, has a proud history of inclusion. In 1951, Prof Dr. Soeharso, a pioneer in prosthetics, founded Indonesia's first panti rehabilitasi, a rehabilitation center in an effort to rehabilitate physically disabled veterans. These rehabilitation centers provide shelter, vocational training, and medical care. Since then, Surakarta has continued to become a city where persons with disabilities from across Indonesia come for rehabilitation services, with many even staying permanently in the city. This history has contributed to an urban environment where disability is more visible; many persons with disabilities residing in Surakarta have reported lower feelings of stigma and better social inclusion in comparison to other Indonesian cities (Rifai, Jamil, and Surjadi, 2018; Patrick and McKinnon, 2022). On the policy front, Surakarta formally ratified the UNCRPD in 2008 by passing the Local Law No. 2/2008 on Disability Rights – three years before the national ratification in 2011 (Rifai, Jamil, and Surjadi, 2018). The city has also received accolades from the Indonesian City Government Association (APEKSI) in 2022 who acknowledge Surakarta as one of the six Indonesian cities with best practices in inclusive urban development. While Surakarta maintains a progressive image regarding its social inclusivity culture and policies, significant work in practices surrounding infrastructure and built environment remains necessary; among them is providing Access to Information (ATI). In public space and facilities such as government offices, information in sign language remains limited, which has significantly affected their position in decision making and experiences in the city (Rifai, Jamil, and Surjadi, 2018; Patrick, McKinnon, Putri Prastika, Asterina, and Jamil, 2022).

As home for 303 Deaf individuals (Surakarta Office of Population and Civil

Registration, 2022), capturing the everyday realities and aspirations of Deaf and Hard-of-Hearing residents is vital in the effort to create a more inclusive urban environment in Solo. Taking the Nothing About Us Without Us principle into consideration , the use of an inclusive and participatory methodology is imperative in ensuring that narratives regarding the Deaf community are made with their involvement.

Hence, the research study utilized Photovoice or participatory photography as a method to explore the unique challenges faced by Deaf people caused by the lack of Access to Information (ATI) in Surakarta. The research study is conducted by Kota Kita Foundation, a non-governmental organization (NGO) based in Surakarta working to promote democratic and participatory approaches in urban development to improve urban areas for all, in collaboration with with the Surakarta chapter of the Indonesian Association for the Welfare of the Deaf (IAWD) and local arts collective, Ruang Atas as part of the A Participatory Urban Arts Initiative to Enhance Participation of Youth with Hearing Impairments project supported by VOICE grant. This paper will discuss two main subjects of the research study: findings related to the challenges faced by Deaf people in navigating their daily life & what could be done to improve the situation; and reflections on using participatory photography – what worked for us, what doesn't, and recommendations for future research considering this method.

Access to Information

Conceptually, Access to Information (ATI) ensures full and equal participation of persons with disabilities in all spheres of society and to create enabling environments by, for and with persons with disabilities (UNESCO). It is an internationally recognized human rights for all, including persons with disabilities.

Access to Information is part of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), an international treaty issued to support human rights for People with Disabilities (PwD). According to the first article of the UNCRPD, its primary objective is to "promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity". Access to Information in specifically stated in Article 21 which affirms member states' rights in :

a. Providing information intended for the general public to persons with disabilities in accessible formats and technologies appropriate to different kinds of disabilities in a timely manner and without additional cost;

b. Accepting and facilitating the use of sign languages, Braille, augmentative and alternative communication, and all other accessible means, modes and formats of communication of their choice by persons with disabilities in official interactions;

c. Urging private entities that provide services to the general public, including through the Internet, to provide information and services in accessible and usable formats for persons with disabilities;

d. Encouraging the mass media, including providers of information through the Internet, to make their services accessible to persons with disabilities;

e. Recognizing and promoting the use of sign languages.

The UNCRPD is ratified into the Indonesian Law No. 8 of 2018 concerning Persons with Disabilities. This legislation acknowledges the rights of individuals with disabilities to access information and choose their preferred mode of communication, affirming the state's obligation in fulfilling access to information (Yustikaningrum, 2020). These rights encompass a range of areas, including accessible information in health services (Article 12), accessible information during disasters (Article 20), the right to express, communicate, and receive information through accessible means, as well as receiving information and communication in sign language, Braille, and augmentative communication in formal interactions (Article 24). The law also addresses inclusive primary and secondary education (Article 42), access to information for participation in electoral processes (Article 77), tourism information (Article 85), and communication and information through accessible means preferred by Persons with Disabilities (Article 122). However, the Constitutional Court has yet to specifically regulate the implementation to ensure these rights (ibid, 2020).

Each Deaf individual has different listening, speaking, and reading abilities. Among those are Deaf individuals who lost hearing at moderate, heavy, and very heavy levels, lack lip-reading, and not able to read find it difficult to receive and understand written and spoken information who primarily communicate in sign language (Nayak et al., 2021 in Yuwono et al., 2021). Additionally, there are individuals classified as Hard-of-Hearing (HoH) — those with mild to severe hearing loss (World Health Organization). Among Hard-of-Hearing individuals, there are those who were born

with hearing abilities who are in the process of learning sign language while better understanding written language. It is essential that Access to Information is inclusive to accommodate all individuals within the Deaf and Hard of Hearing spectrum.

In general, there are several ways Deaf and Hard of Hearing people can receive access to information. For real-time information, sign language interpreters play a crucial role, whether in videos, live events, or teleconferences. Subtitles are particularly valuable for Hard of Hearing individuals who may not fully understand sign language, as they can provide information in videos. Additionally, typists are crucial in delivering information during events, classes, and meetings. After meetings and events, notetakers play a vital role by summarizing key takeaways – making it more accessible.

In Indonesia, Access to Information for Deaf people remains a challenge, namely due to a lack of awareness and the use of sign language in public spaces and facilities, including government offices (Rifai, Jamil, and Surjadi, 2018; Patrick et al., 2022). The issue received public attention during the early stages of the COVID-19 pandemic in 2020 as essential information disseminated through the government's official television broadcasts did not include sign language interpreters. Deaf advocates swiftly rallied the government; their advocacy efforts led to the inclusion of sign language interpreters in official broadcasts starting from 8 August 2020.

Overview of Sign Language & Deaf Community Organizing in Indonesia

The growth of sign language communities in Indonesia has been largely influenced by Sekolah Luar Biasa (SLB) and Deaf organizations (Palfreyman, 2020). Building on Palfreyman's premise, this section will outline the development of sign language in Indonesia, with the first part focusing on its development within Deaf schools and the second part delving into its relationship with Deaf organizations.

Indonesia uses two sign language systems: Indonesian Sign Language (Bahasa Isyarat Indonesia/BISINDO) and Indonesian Sign Sistem (Sistem Isyarat Bahasa Indonesia/SIBI). BISINDO translates a word from spoken Indonesian followed by an expression representing its context (Handhika et al., 2018). It is considered to be the bahasa ibu (mother tongue) for Deaf people in Indonesia, and is widely used in daily conversations. Its roots trace back to the 1930s when it began to take shape at SLB

Cicendo Bandung, a special needs school and dormitory for the Deaf with students hailing from different cities. While the teaching predominantly involved oral communication, students began to communicate in a common sign language. This unique language has since become a vital part of daily conversations, with students carrying it back to their homes. For decades, this particular language developed without being designated a common label. Eventually, in 2002, IAWD's 6th National Congress in Bali established a name for the emerging language: Bahasa Isyarat Indonesia (BISINDO).

BISINDO eventually developed differently in different regions, causing sign language in Indonesia to vary by region. According to Aprilian Bima, a Surakarta-based deaf activist who is involved in national-level deaf advocacy, these regional variations are mutually intelligible – native signers can understand the regional variants and communicate with relative ease. A notable exception is Kata Kolok, which originated in the village of Kolok in Bali. Due to the unusually high proportion of Deaf individuals in the village, the people of Desa Kolok developed their unique sign language used by deaf and hearing villagers alike. Linguistically, Kata Kolok is considered a language isolate, meaning that it's unrelated to the sign language used in other parts of the country.

While BISINDO is used in everyday conversations, the language of instruction in special education schools in Indonesia is SIBI. SIBI was first developed in 1978 by SLB Zinnia in Jakarta and SLB Karya Mulya in Surabaya to improve the learning process with Deaf students. These schools had relied on oral language as the medium of instruction before initiating a transition into sign language. This endeavor then led to creation of a new sign system based on American Sign Language (ASL). In an effort to document and codify the sign system, the Indonesian Ministry of Education and Culture formed a Task Force for Special Needs Education (Kelompok Kerja Pendidikan dan Luar Biasa/KKPLB), tasked to produce a guideline for a sign system based on the Indonesian language. In 1994, The Ministry of Language and Culture formalized the sign system through Decree of Ministry of Education and Culture no. 0900/P/1994, establishing SIBI as the language of instruction for Deaf students in special schools. This decision was not well received by Deaf organizations who were not included in the decision making process, creating a tension between the use of SIBI or BISINDO.

While SIBI was established by the Indonesian government as a formal language for instruction, BISINDO is an integral part of Deaf Culture in Indonesia. Nowadays, SIBI is used only in schools by hearing teachers of deaf students. In many cases, Deaf students would use SIBI in classes and switch to BISINDO outside class.

Deafness, often considered as an invisible disability, can be recognized through sign language (Gumelar et al, 2018). Asriandhini and Rahmawati's 2021 research on BISINDO and identity construction in Purwokerto, Central Java, Indonesia highlighted how BISINDO is vital to Deaf identity and culture, as it helps them to understand themselves as part of social system that is equal to hearing people. When Deaf people communicate with each other using BISINDO, they begin to understand deafness as their unique identity and pride.

Mainstreaming the use of BISINDO has now become one of the main agenda advocated by Deaf movements today, notably led by IAWD. On February 28th, 2009, the organization founded the Center for Indonesian Sign Language (Pusat Bahasa Isyarat Indonesia/PUSBISINDO) to promote BISINDO throughout Indonesia. To do so, PUSBISINDO offers BISINDO classes for Deaf children as well as for the general public. As for 2023, PUSBISINDO has 12 regional chapters all across Indonesia.

Photovoice as an Inclusive Research Methodology

Over the past three decades, various researchers in disability issues have looked to participatory and inclusive research methodologies to address unequal social relations between research and participants and strengthen the representation of all groups — regardless of age, abilities, and other characteristics (Jurkowski, 2008). Thus, in determining the appropriate methodology in this research study, a defining consideration is in whether the method accommodates to the abilities of the Deaf and Hard-of-Hearing participants in a way that encourages their active involvement in shaping the process and results (Jurkowski, 2008; Israel, Shulz, Parker, & Becker, 1998). Additionally, each inclusive research methodology, e.g., photovoice, participatory videography, shadowing, journey mapping, and persona, serves its own purpose (Asterina, Putri Prastika, and Jamil, 2022). A catalog of participatory and inclusive research methodologies that have been used and developed by Kota Kita Foundation in the recent future are as follows:

Inclusive Research Methodologies	Description
Photovoice	Photovoice encourages participants to use camera first-hand to to visually document their everyday realities, honoring the knowledge(s), voices, and experiences of community members about particular issues affecting their lives
Participatory videography	Participatory videography engages community members in a collaborative video creation about a topic or issue of concern. Participants become 'co-filmmakers' through various activities, where they learn technology, develop storyboards, and collaboratively produce videos.
Journey Mapping	The journey mapping methodology, influenced by service design research, visually illustrates participants' experiences within a specific service or space. Using a map, participants trace their journey to address a task or issue, revealing barriers, steps, and touchpoints.
Persona	Personas are fictional characters developed based on pre-assessments of a specific community which are used to facilitate discussions and resolutions regarding a particular issue present in the community,

Table 1. A selection of Kota Kita's Participatory and Inclusive Approaches Catalog

(Asterina, Putri Prastika, and Jamil, 2022)

In our effort to capture the lived experiences of young Deaf and Hard-of-Hearing persons in Surakarta, this research study specifically considers participatory visual media i.e., Photovoice as the choice of methodology, taking into account its strengths, functions, and limitations as a medium for the needs and aspirations of participants. Photovoice can be traced back to Caroline Wang, Mary Ann Burris, and colleagues

engaging rural village women in China's Yunnan province to communicate their perspectives and life situations through photographs (Wang & Burris, 1994). In disability research, photovoice has been used for people with intellectual disability. As of writing, there remains limited literature regarding the use of photovoice in studies that involve Deaf and Hard-of-Hearing participants. Despite being under-researched, Pfiser's (2020) study on deaf children's perception towards Mexican Sign Language (Lengua de Señas Mexicana/LSM) in Mexico City sheds light on this regard. Upon employing the method, Pfiser finds that photovoice works well for Deaf children, who are 1) reliant upon visual expression; 2) understanding of Spanish varies due to their limited access to spoken/written Spanish. Building on this notion, we presume that by leveraging the inclination for visual cues within Deaf culture, this method helps to capture their lived experiences as authentic as possible while allowing for exploratory discussions. Photovoice has served as an alternative to other well-known methods, notably to address persisting issues regarding power relations — i.e., the role of participants to shape their own narrative and representation about their challenges — and facilitates a co-production of knowledge between researchers and participants (Sontag, 1997; Bleiker and Kay, 2007). The methodology has also often been the choice of researchers working with minority youths due to its observed impact to the capacity of participants to become positive agents of change within their communities, such was the case of Guerrero and Tinkler (2010) who used the photovoice approach to engage with refugee youths resettled in San Diego and displaced students in the fringes of Bogota, Colombia. As a participatory approach that has been used since the 1990s, it is worth noting that a particular drawback to photovoice relates with its geographically-bounded nature. According to Cai (2020), this has resulted in limited findings towards a specific geographical context. When utilizing photovoice for her research on climate resilience in Manila and Cebu, the Philippines, located in separate islands 800 kilometers apart, she adjusted the method by utilizing Facebook to help participants connect with researchers and each other.

Methodology: Our Take to Photovoice

In February and March 2023, we conducted a series of three photovoice workshop sessions with 16 Deaf participants residing in the Greater Surakarta Area. These sessions were held every other Saturday over a span of five weeks, allowing for a one-week gap between each session. The weekend scheduling was deliberately chosen to accommodate the participants who were mainly high school and college students.

The recruitment of participants was conducted through a promotion for the 'Bercerita Melalui Foto' or 'Storytelling Through Photography' workshop activities, disseminated within the network of the IAWD Surakarta chapter. Prospective participants were requested to commit to attending all three photovoice workshop sessions. Of the 16 participants who volunteered for the sessions, nine [9] were males and seven [7] were females. As stated earlier, the majority of participants were high school and college students. Additionally, the cohort included two senior participants with more extensive experience in Deaf activism.

Preparation for photovoice sessions

There were two important things to note during the preparation stage: the prompt and the workshop environment. Firstly, after writing the prompts that Deaf participants would respond to, we allocated time to consult the prompts with the disability advocacy specialist for this project, Galih Saputro (Head of the IAWD Surakarta Chapter), along with three sign language interpreters who would interpret during the workshops. This step was taken to ensure that the textual prompts, written in Bahasa Indonesia, would be accurately interpreted to convey our intended meaning.

For example, one of the prompts asked participants to respond with a photo of the type of public space they liked. However, the term 'ruang publik' or 'public space' could have multiple and layered interpretations when conveyed in written languages like Bahasa Indonesia or English. It could refer to physical public spaces like squares or markets, or it could encompass the broader concept of public spheres as places, whether physical or not, where individuals gather and engage in discourse. Additionally, the term 'ruang publik' is quite technical and rarely used in everyday language.

For the workshop, our intention was to capture the essence of 'public space' as a place for communal activities and participating in collective experiences. Therefore, the disability advocacy specialist and the sign language interpreters agreed on using the BISINDO vocabularies for 'ruang' and 'publik', while subsequently providing examples of such places, like 'parks' where 'people can engage in activities freely.'

Secondly, we recognize that the presence of sign language interpreters requires

careful consideration of the room layout well in advance of the workshop session. This planning ensures that participants have the best possible line of sight to both the interpreters and each other, particularly during large group sessions.

For the aforementioned large group sessions, where we delivered the prerequisite materials for the workshop, we used a U-shaped seating arrangement with the speakers and the sign language interpreter positioned at the front next to each other, as illustrated below:

Picture 1: Seating arrangement for the large group sessions

During the photovoice sessions themselves, the 16 participants were divided into three smaller groups, each consisting of around 5–6 participants. In each group, there was one facilitator, one co-facilitator responsible for taking notes, and one sign language interpreter. As in the large group sessions, the seating placement was arranged to maximize every participant's line of sight to the sign language interpreter, ensuring it was not obstructed by the activities of the note-taker or the facilitator.
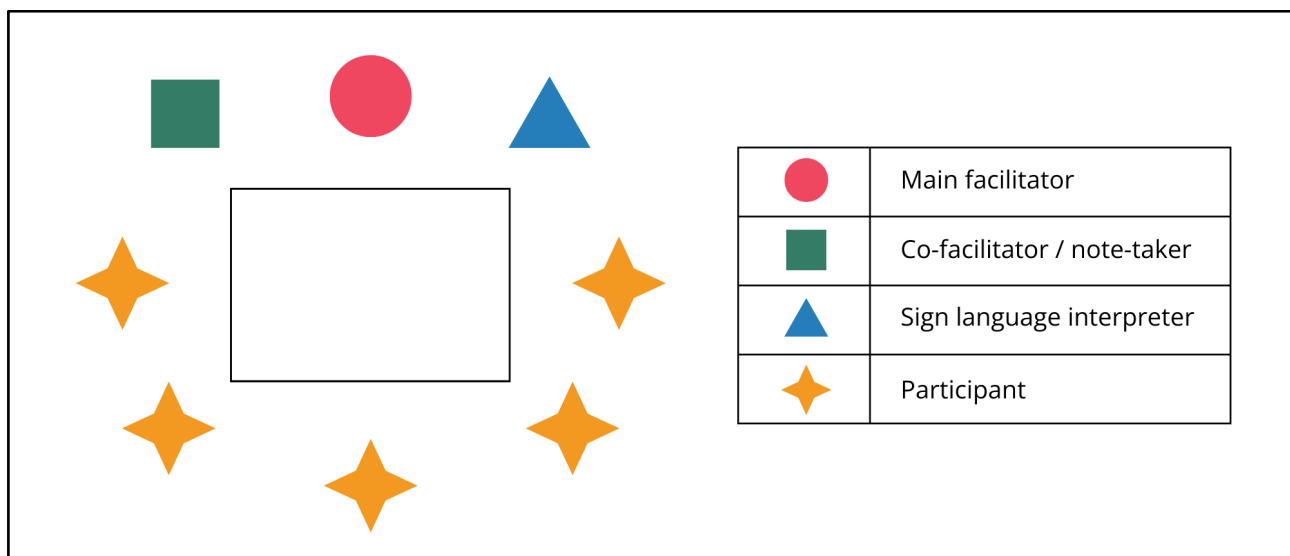
Chart 1: Seating arrangement at a 5-participant photovoice workshop

Picture 2: Seating arrangement at a 4-participant photovoice workshop

Picture 3: Seating arrangement at a 5-participant photovoice workshop

In addition to the seating arrangements, the facilitators and speakers made sure to speak more slowly, used simple Bahasa Indonesia words, and incorporated pauses when necessary to aid the interpretation process, as sign language interpreters sometimes require more time to provide examples for certain concepts that may be unfamiliar.

As participants were responsible for taking the photos in the photovoice workshops, we also allocated time for them, along with the sign language interpreters, to thoroughly discuss and understand the consent forms. This ensured their awareness of the research's purpose and the potential use of their photos in project publications.

Photovoice discussions

The first session was conducted entirely as a large group activity. It began with a crash course to mobile photography and an exercise photovoice session involving sample prompts. During this session, we took a walk to a landmark near the venue, Pasar Gede, and participants were instructed to take photographs that responded to the sample prompt which was "What do you like about Surakarta?". Subsequently, they returned to the workshop class to share the stories behind their photos and why they took the photo as a response to the prompt.

Towards the end of the session, we provided participants with the prompts for the second session, which were "What kind of public space do you like?" and "What kind

of public space do you dislike?" This task required them to take photos over the following two weeks and bring them to the upcoming session. Participants were instructed to use their smartphones for the tasks since they all had their own devices.

For the second session, participants returned with the photos they had taken in response to the prompts. We divided them into predetermined groups, carefully selected to ensure diversity in terms of gender, age (correlated with their experience and understanding of Deaf activism), and personality.

The session began with each participant presenting their printed photos, pinning them to the central styrofoam board (see Chart 1). The facilitator initiated the discussion by asking an initial question, such as "What aspects of the photo do you like?" After the participant responded, the facilitator posed 2-3 follow-up questions. Meanwhile, the co-facilitator took notes on Post-its and pinned them in proximity to the photos on the styrofoam board.

Once one participant's discussion was completed, the facilitators proceeded to the next participant in a sequential manner. While these discussions were ongoing, other participants were encouraged to listen, engage, and share their thoughts if they had similar experiences, ensuring the collective aspirations from the sessions were captured.

Each prompt discussion was allocated a 30-minute timeframe, with a 5-minute break in between. However, it became evident that this duration was insufficient, primarily due to the extended time required for the interpretation process and participants' enthusiastic storytelling. The constraints of time will be further addressed in the reflection and recommendation sections of this paper.

The session concluded with all 16 participants gathering again as a large group, where each small group had the opportunity to present their stories. Additionally, participants from other groups were encouraged to give their responses to these narratives. Following this session, participants were once again given prompts for the third and final session. These prompts were: "As a Deaf individual, what challenges do you encounter in your daily life?" and "As a Deaf individual, what is your greatest hope for the future?" Two weeks later, the third session followed a similar format to

the second, with improvements made based on the lessons learned and the challenges identified during the previous session.

Findings: Barriers to Communication

Sign language is visual and gestural in nature. However, in our predominantly hearing world, verbal and textual means of communication based on sounds and letters are more commonly used. Parents of Deaf children consider oral communication skills, which includes lip reading and speaking, essential in order to help their kids in a hearing society. Consequently, Deaf children often begin learning to lip-read and attend speech therapy from a young age.

Findings from the photovoice workshops highlighted the persistent communication challenges faced by Deaf people in their daily lives even when some are able to lip-read or have gone through speech therapy. With limited access to communication, our participants — who are mostly young people of school age — reported various difficulties and discrimination, particularly related to education and employment opportunities.

Education

At the primary and secondary level, students with disabilities in Indonesia can opt to enroll in Special Needs Schools (Sekolah Luar Biasa/SLB) or regular schools. Whether they choose to enroll in Special Needs or regular schools is a personal choice. Historically, Deaf students can only enroll in special needs schools, mirroring the segregation approach towards education for students with disabilities. Gradually, the government began to adopt the integrative approach, which allows students with disabilities who are assessed as capable of following the curriculum to enroll in regular schools (Darma and Rusyidi, 2015). Eventually, there was a growing realization that all students with disabilities, regardless of their personal capabilities, should have the opportunity to attend regular public schools. This transformative shift was formally established through Regulation of the Republic of Indonesia Number 20 of 2003, specifically in Article 32, which granted students with disabilities the opportunity to enroll in public schools. This marks the beginning of the government's inclusive approach towards education for students with disabilities (ibid, 2015). Hasugian et al. argued that the development from the segregation to inclusive approach shows that the government has taken the issue of inclusive education seriously. However, the quality of teachers can still be improved through

in-service training programs. Such in-service training programs are aimed at helping teachers adjust or modify the curriculum according to the class' conditions, allowing teachers to be more flexible in different situations.

Upon attending schools, participants of school age struggle in understanding the materials, because lessons are conducted in Indonesian without accessibility features in BISINDO. Furthermore, not all regular school teachers are able to cater to the needs of Deaf students, such as speaking slowly to facilitate lip-reading and utilizing whiteboards and PowerPoint presentations during their teaching.

"I go to a regular vocational school, majoring in Visual Communication Design. I find it hard to follow the lessons when the teachers speak too fast and when they don't write down the lessons on the whiteboard."

-Kheyza, vocational school student

"I study Visual Communication Design at a vocational college. It's been a challenge to connect theory and practice in my classes, so I struggle to maintain my grades."

-Afrizal, vocational college student.

"At school, almost all of my friends couldn't speak sign language. It is hard for me to

make friends and do group assignments – almost all of my friends couldn't sign. I wish my hearing friends are willing to learn sign language."

-Najwa, vocational school student.

To help them understand the lessons in school, Deaf students rely on assistive technology, such as captioners, and the help from their hearing peers.
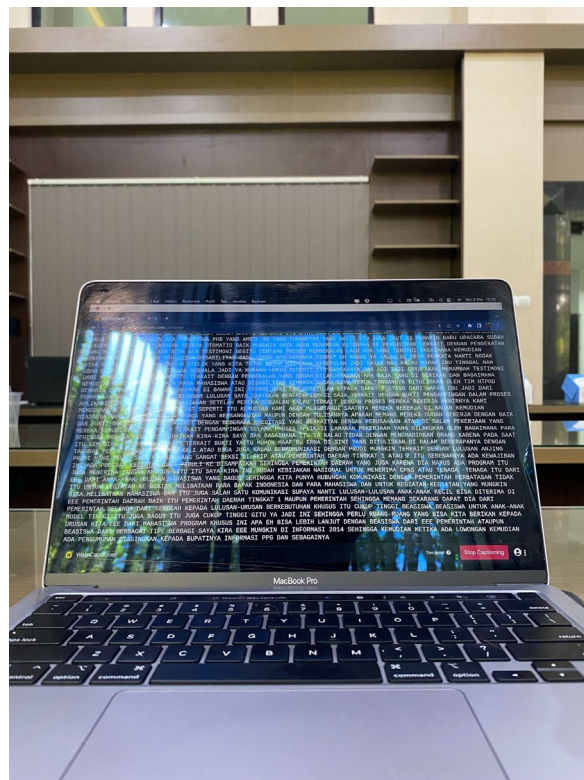
"I use web captioners to help me understand lectures. Being a Deaf student is hard, but it motivates me to survive in school and college."

-Dela, college student.

"I have a friend who understands sign language – they help me a lot at school."

-Pingkan, special school student.

Employment

Different means of communication makes it challenging for Deaf people to enter the formal workforce. As of September 2023, there is not yet official data for Deaf and Hard-of-Hearing employment rate. Companies often do not trust the capacity of workers with disabilities and consider accommodating persons with disabilities in the workspace as a big monetary investment (Rifai, Jamil, and Surjadi, 2018). Participants expressed challenges in the process of finding a job as well as working.

"How can we earn a living? Employers are often hesitant to hire Deaf people. They assume it would be a hassle to have a Deaf employee in a hearing-majority workplace. And since communication is essential in teamwork, how can we communicate well without fellow signers in the team?"

-Bima, freelance artist and graphic designer

Due to the challenging situation, many participants expressed their hope to pursue independent, self-employed professions.

"I go to a vocational school, majoring in fashion. My dream is to become a fashion

designer with my own boutique. I still need to learn more outside of school to improve my skills. Thankfully, my mom is fully supportive of me and my dream."

-Najwa, a vocational school student.

"I really like to swim. I'm currently part of a swimming club, and I've participated in both NPC and regular competitions[1]. In the future, I want to become a swimming instructor."

-Kheyza, a vocational school student.

In recent years, there has been increased efforts by the government, private sectors, and civil society organizations to be more inclusive, notably to comply with the 1% employment quota mandated by the Law of the Republic of Indonesia 8 of 2016 on Persons with Disabilities. There are digital platforms and civil society organizations that help people with disabilities to find jobs and receive specific training to improve their soft skills necessary to enter the workforce, such as Kerjabilitas, Parakerja, and Sehati Sukoharjo. Government offices, state-owned enterprises, and the private sector have also organized recruitments to include people with disabilities. However,

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[1] National Paralympic Committee

participants noted that these inclusivity measures primarily target individuals with physical disabilities and have not yet fully extended to Deaf individuals due to the additional challenges employers face in accommodating their unique needs.

In Indonesia, standardized tests assessing general intelligence and language skills – which may include listening tests – are often a part of the recruitment process. One of our participants, Dela, has expressed concerns regarding these standardized tests. Dela hopes these assessments can be adapted to be more inclusive and accessible for Deaf individuals.

In summary, our findings have highlighted that while certain regulations have improved access to communication and information for Deaf individuals, systemic limitations persist, limiting their opportunities. Additionally, the level of support and accommodation provided by close family and friends, or its absence, significantly influences the confidence and ability of Deaf individuals to access these opportunities.

Reflections from Photovoice

In everyday life, cultural and linguistic disparities between Deaf and hearing communities present significant barriers to the participation of Deaf individuals in public forums predominantly attended by hearing individuals, such as neighborhood meetings or informal gatherings. As highlighted by Murray et al. (2007), these barriers often lead to decreased participation and engagement in spaces that are dominated by the hearing community, and inclusive spaces heavily rely on hearing individuals who are willing to make an effort to communicate with Deaf individuals and treat them with respect.

In Surakarta, these inclusive and collaborative spaces between Deaf and hearing communities tend to be limited to campus-based volunteer organizations, notably the Deaf Volunteering Organization (DVO) at Sebelas Maret University (UNS). The photovoice sessions, conducted through collaborative efforts between Kota Kita, IAWD Surakarta, and the arts collective Ruang Atas, expanded these collaboration spaces for Deaf individuals with organizations that were primarily composed of hearing members.

The photovoice methodology, emphasizing the use of photography as a creative means to tell their narratives during the sessions, not only proved to be a fun and enjoyable approach but also encouraged inclusion and active participation (Abma & Schrijver, 2018) among the Deaf participants. This approach enabled participants to participate by visually conveying their intended messages without being confined by the assumption that Deaf individuals possess a complete understanding of the written or visual version of the spoken language around them (Hoffmann-Dilloway, 2011), in this case, written Bahasa Indonesia. Further monitoring and evaluation will be necessary in understanding the extent of the methodology's impact to the social capacity of photovoice participants as positive agents of change in their environments, as in the case of Guerrero and Tinkler (2010) with displaced youths in Mexico.

Nevertheless, the photovoice process was constrained by the facilitators' limited understanding of BISINDO, resulting in the use of written Bahasa Indonesia for the prompts. These textual prompts, including "What kind of public space do you like?" and "What kind of public space do you dislike?", as well as "As a Deaf individual, what challenges do you encounter in your daily life?" and "As a Deaf individual, what is your greatest hope for the future?", still posed challenges for the participants. Sign language and written versions of spoken language inherently possess different modalities that impact language structure (Lillo-Martin & Gajewski, 2014). Consequently, more extensive follow-up questions between the sign language interpreters and the participants were required to clarify the intended meaning of the prompts.

This gap in interpretation between the intended meaning and its understanding persisted. As previously noted, there was a substantial back-and-forth process between Deaf participants, facilitators, and interpreters regarding the prompts and the photos. Given the need for clarification and the differences in language modalities, this exchange often required more time compared to traditional methods such as interviews or focus group discussions.

Noting this limitation, an intermediate level understanding of BISINDO would help bridge these gaps and improve the research process. It allows researchers to immerse more deeply during discussions, enabling them to grasp the nuanced expressions that are unique to sign language. Additionally, BISINDO can enhance the

research process by introducing sign prompts alongside textual ones, helping participants in understanding and responding to the prompts.

Conclusion and Recommendations

Looking back to the working framework for enabling inclusive cities by Patrick and McKinnon (2022), our findings on the barriers and challenges faced by Deaf people due to limited access to information in Solo highlighted the urgent need for more socially-inclusive environments — supported by stronger access to information — to improve the lived experiences of Deaf individuals in Solo. Thus, in promoting more inclusive urban environments in Solo, our research study concludes that a crucial first step is in supporting the mission of Deaf organizations such as IAWD in increasing public awareness on the needs and culture of the Deaf community, particularly related to BISINDO as the mother tongue and primary mode of communication for Indonesian Deaf individuals.

With regards to our reflection in the use of photovoice, we recommend that future research looking to the methodology to engage Deaf and Hard-of-Hearing persons should consider the following factors:

Ensuring Interpretation and Comprehension

BISINDO is a language that is rich in local contexts i.e., different regions may have different words for the same activities, and typically communicated in a conversational manner. Thus, developing strategies to address interpretation barriers during the photovoice workshops is crucial to understanding the findings. We strongly recommend coordinating closely with local activists and sign language interpreters to ensure that the materials are suited to the local language and comprehension level of the participants. Researchers should have general knowledge of BISINDO to capture the nuances and contexts communicated by participants that may be lost in translation by sign language interpreters.

A Methodology to Examine Everyday Realities

As an inclusive and participatory methodology, photovoice proved to be a helpful tool for researchers in this study seeking to delve into the everyday experiences,

challenges, and aspirations of Deaf people in Surakarta. However, some limitations surfaced in addressing our inquiry regarding their aspirations and challenges in public spaces. In this context, alternative approaches like journey mapping or conducting site-specific photovoice workshops may offer more effective means of exploring challenges and aspirations on public spaces.

Geographical Contexts

Similar to Cai (2020), the findings of our photovoice workshops tend to be geographically bounded. For instance, several local landmarks, such as traditional markets and universities, surfaced during the workshop discussions. While characteristic allows the methodology to provide rich contexts at a local scale and indicate the relevance of specific spaces to the everyday realities of participants, it also means that the findings are particular to Surakarta. Research studies seeking to use photovoice to understand the realities of Deaf communities at a larger scale may need to consider adjusting the methodology, i.e., conducting the workshops in multiple cities to gain a greater sample.

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