

# ACCESSIBILITY GOES DIGITAL: EXPLORING ACCESS BEFORE, DURING AND AFTER OPERA PERFORMANCES

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**Abstract:** This paper reflects on the tools, strategies and opportunities available for making opera performances accessible for people with sensory and intellectual disabilities today. After analyzing the changing face of accessibility and inclusion in ontological and legal, but also methodological and empirical terms, the focus shifts on a large-scale, inclusive project, used here as a case study to observe the opportunities and challenges offered by accessible live performances in today’s world, with an emphasis on the use of digital tools. A survey is also at the core of the article, with over 360 respondents and data collected by means of a structured questionnaire as well as spontaneous feedback. Focusing on metrics such as immersion, cognitive effort, and subjective wellbeing, the authors aim to show how accessibility to live opera shows leads to significant engagement and immersion. As is detailed in the article, a combination of live services and digital tools also effectively reduces cognitive load, allowing participants to engage with the performance without being overwhelmed by its complexities and resulting in increased wellbeing. All in all, this article aims to contribute to the growing debate on accessibility to media, arts and culture, emphasizing its pivotal role in fostering equity, inclusion, and meaningful participation for all audiences.

**Keywords:** media accessibility; audiovisual translation; opera studies; reception studies; digital access.

## 1. Introduction

Audiovisual translation (AVT) and accessibility have evolved, in theoretical, methodological and empirical terms, along with the constant development of techniques and technologies. As Lindsay Bywood says (2020: 503) “without technological advancements, AVT might not even exist as we know it today”. As a matter of fact, concerns about technical issues and technological advances in relation to audiovisual translation and accessibility are as old as the fields of application and research: pioneering volumes such as *Overcoming Language Barriers in Television* edited by Georg-Michael Luyken (1991) and *Subtitling for the Media* by Jan Ivarsson (1992) were already deeply concerned with technologies, their evolution, their impact on audiovisual translation production and consumption. In what is still today considered a foregrounding contribution to the field of AVT, Luyken devotes many sections to the “mechanics” of translation and accessibility and to their economic impact on television production and distribution. Likewise, Jan Ivarsson’s seminal 1992 volume focuses on techniques, tools and technologies from page 4 onwards; the author also refers to an astounding early patent for the rapid showing of titles on moving pictures, registered in 1909 by M.N. Topp, which used a sciopicon to project the translation beside or below the original intertitles.

Since the days of Luyken and Ivarsson’s contributions, audiovisual translation and accessibility have travelled a very long distance, both in terms of practice and research, with developmental accelerations in the past two decades, certainly due to the impact of ever more ubiquitous, integrated, user-led and fast evolving technologies. In recent years, the Covid pandemic imposed radical and sudden changes to both production and consumption of audiovisual translation and accessibility texts and services, and most of them have permanently entered our lives and permeated our socio-cultural habits.

In the realm of accessibility to media and live events, the right to access information, entertainment, cultural spaces and events has been increasingly at the core of international legislation and recommendations since the early days of the UNCRPD. The European Accessibility Act, due to come into force throughout Europe on 28 June 2025, but also the Solfagnano Charter, approved in October 2024 on the first G7 summit on Disability and Inclusion, lay emphasis on the urgent need for more flexible, universally accessible technologies. The Solfagnano Charter (2024) states that it is the duty of all States to “ensure the availability and adaptability of community-based services and advance the use of accessible and inclusive new technologies”, also hinting at the importance of providing financial support for those bodies, institutions and companies that conform to this.

All in all, technologies for access and inclusion have long been central to experimental research and to the development and dissemination of accessibility services. Recent studies have documented how digital tools — such as remote captioning platforms, AI-generated subtitles, virtual tours, and adaptive user interfaces — have significantly expanded opportunities for participation in cultural life (see Dangerfeld, Moores & Romero-Fresco 2024). These tools, while

sometimes seen as reducing physical attendance, are in fact essential for people who may be temporarily or permanently unable to travel, offering an inclusive alternative rather than a lesser option. Importantly, the expansion of digital access has not diminished the value of in-person participation. Rather, it should be seen as a complementary asset: a means of enhancing — not replacing — live, collective experiences. When well integrated, digital and physical accessibility measures can work together to foster broader, more flexible forms of inclusion.

This paper is centered on a large-scale accessibility project for opera theatre, held at the Arena di Verona Opera Festival, Italy. The project saw the participation of over 1,000 people to 25 accessible opera performances in the summer of 2024. The live experience was accompanied by the production and online, open dissemination of inclusive, digital resources such as accessible trailers, opera booklets and Easy-to-Read opera guides, aiming to cater for the *before*, *during* and *after* the accessible live events themselves. The project also featured the collection of structured and spontaneous feedback from the participants to the project, that will be detailed in the following sections.

## **2. Audience reception before, during and after live events**

The growing diversity in audience demographics, be it for media or live events, highlights the pressing need to understand how individuals with different abilities engage with accessible services, resources and tools before, during, and after the media or live event experience. These may be presented in their original form or adapted through various types of translation. Here, translation is to be intended broadly, going far beyond intra- or interlingual transfer, to include a host of intersemiotic practices that bridge different communication systems (Di Giovanni 2024: 361), often involving hybridity and creativity to *speak* to different people and to open up to increasingly diverse needs. By way of example, audio description today is created in a variety of ways, to adapt to multiple settings and contexts and to customize the experience for blind and non-blind patrons (Dangerfeld, Moores and Romero Fresco 2024), while brand new forms of writing and rewriting for access are emerging into the realm of live events, including easy-to-read texts, social narratives and AAC.

In recent years, significant progress has been made in the methodologies used to study how audiences experience accessible live events through diverse tools and strategies. Researchers have embraced a wide array of approaches, carefully tailored to the specific goals and contexts of their studies. Qualitative methods such as ethnographic observation and in-depth interviews have been particularly effective in capturing the nuanced and personalized experiences of audiences with different abilities and needs before, during, and after performances. In this context, interviews and focus groups have been instrumental in exploring audience experiences. For instance, Bossey (2020) investigated the perceptions of the UK live music industry regarding existing practices and the potential role of Information and Communication Technology (ICT) in enhancing accessibility, among others, for deaf festival attendees. The study employed semi-structured interviews aiming to collect qualitative data and gain deeper insights into these issues. Similarly, Castle, Burland, and Greasley

(2022) utilized structured interviews to delve into the experiences of visually impaired audiences at live music events, uncovering key accessibility issues and offering valuable recommendations for improvement. Their studies highlight how qualitative methods can provide deep insights into audience needs and the effectiveness of accessibility tools and services.

To complement qualitative approaches, researchers have incorporated pre- and post-performance surveys, combining qualitative insights with quantitative data to develop a more holistic understanding of the impact of accessibility tools and services throughout live events – before, during, and after the experience. These studies not only explore audience preferences and opinions but also delve into the deeper emotional, social, and psychological benefits of participation (Di Giovanni 2022; Raffi 2023), which often yield important findings to be poured into innovation in research and, most of all, in practice. For over 10 years now, researchers such as Eardley-Weaver (2014), Fryer (2021), and Di Giovanni and Raffi (2022) have underscored the value of these methods in assessing both immediate audience responses and the long-term psychological benefits and overall satisfaction associated with accessible live events.

Advances in technology have further expanded the researcher's toolkit, enabling innovative ways to study audience reception from an increasing array of perspectives. Biometric tools, such as eye-tracking, heart rate monitoring or facial and retina recognition, allow the researchers to explore emotional engagement as well as a host of other spontaneous reactions, according to their project needs. Up to the present day, however, these technologies have been extensively employed to study audience perception and reception in non-live settings. Their application in live events remains rare due to several factors: the logistical complexity of the tools themselves, the challenges of their physical setup in dynamic environments, the unpredictable nature of live performances, and, importantly, the difficulty of maintaining ecological validity in such settings. The social atmosphere, the uniqueness of each performance, and the presence of uncontrollable variables all complicate the reliable measurement of spontaneous audience responses during live events. Nonetheless, as has been evidenced by some previously discussed studies, research on audience reception of accessible live events does allow for an exploration of their appreciation and short to medium and long-term impact, also by applying psychological parameters and measures without the recourse to any specific biometric tool. And the collection of such information can have a profound, transformative impact on participants, researchers, as well as event organizers and practitioners.

The key factors determining the success of such explorations are, among others: flexibility of the survey structure, to allow for participation from different devices and by people with different disabilities, logical and structural coherence, administration within a very limited time after the experience, use of closed questions with some open space for personal input at the end. These key factors were at the core of the design and administration of a survey carried out in the summer of 2024 at the Arena di Verona, which is the object of the following section.

### 3. *The Arena di Verona Opera Festival becomes accessible: design and development of the Arena per Tutti project.*

At the end of 2022, the Foundation that organizes the Arena di Verona Opera Festival decided to open the doors to an accessibility project for persons with sensory and intellectual disabilities, as part of the celebrations for its 100th anniversary. As a matter of fact, the Festival was already welcoming audiences with disabilities, with dedicated prices and entrances, but no specific service aiming to make the actual performances more accessible had been offered yet. Soon after the Foundation decided to embark on a dedicated project, selecting a scientific team of advisors and naming the project *Arena per Tutti*, a revision of the terminology and the information provided for Italian and international persons with disabilities was recommended and applied to all forms of communication, including the website, which in a year (from early 2023 to early 2024) resulted in more straightforward interactions with these audiences, matched by an overall growth of requests and reservations by over 25%, as reported by the ticket office manager. In order to support and enhance the live, accessible experience at the arena, a host of digital, innovative tools were designed, to cater for the needs of the disabilities directly targeted by *Arena per Tutti*, namely people who are blind and have low vision, people who are deaf and hard of hearing, people with an unrestricted type of intellectual disability and of course their caregivers. Such tools included accessible opera trailers, lasting approximately 60 seconds and featuring a limited sequence of images to avoid excessive sequence speed, creative, intralingual subtitles, translation into sign language, and audio description for the images. In 2023, these trailers (one for each accessible opera performance and one for the whole *Arena per Tutti* project) were only created in Italian, whereas in 2024, which is the year we will be concentrating on in this and the following sections, they were also fully translated into English (with international sign language) and German. Besides the trailers, accessible digital opera booklets were created for the four operas of the programme, namely *Aida* by Giuseppe Verdi, *Carmen* by George Bizet, *Il Barbiere di Siviglia* by Gioacchino Rossini and *Turandot* by Giacomo Puccini. These digital booklets, openly available on the Arena di Verona website, were made in Italian and English and they offered a summary of the plot, information about the stage director's choices, the main characters and the artists on stage. All texts were available for color-contrast change and increase in font size; they were also in audio format and accompanied by a translation into Italian or international sign language. As the texts were accompanied by images, those were also fully audio described. All accessible opera booklets were also accompanied by Easy-to-Read opera guides in Italian, English and German. These materials were shared in advance with all patrons requesting information and booking an accessible experience at the Arena: they represented the *before*, i.e. a preparatory experience for people with disabilities and their caregivers. For 25 opera performances, live access services were provided *during* the shows: subtitles for the deaf were sent to participants on their mobile devices, audio description for the blind was delivered live via dedicated receivers and printed Easy-to-Read guides were distributed upon request. On 11 evenings, before the

accessible opera performances, multisensory experiences were offered, completely free of charge and guided by the Arena di Verona staff from the stage and costume departments as well as accessibility operators. These sessions incorporated tactile, auditory, and visual elements, enabling attendees to familiarize themselves with key aspects of the operas, from costumes to stage design. The impact of these efforts was significant, attracting 1,002 participants from across Italy and Europe. The multilingual availability of resources further broadened the initiative reach, making the festival accessible also to an international audience. *After* the live experience, participants were given a printed QR code or small card to scan and compile the survey, which allowed the researchers and scientific coordinators to collect over 360 replies. The following section provides a detailed description of the survey, including the variables it was designed to measure, its structural components, and the methodology employed for its administration and analysis.

#### ***4. A questionnaire for persons with and without disabilities: design and measures***

The questionnaire<sup>1</sup> administered at the Arena di Verona aimed to investigate the reception of all accessible services through self-reported psychological parameters, including immersion, cognitive effort, and subjective wellbeing. It also collected structured and open-ended feedback regarding specific tools and services, to identify areas of strength and aspects that might require revision. Given that the objective of this survey was to examine participants' lived experiences retrospectively, a self-report methodology was employed. The post-hoc analysis was based on a structured questionnaire — developed in Italian and English — which included both Likert-scale items and one open-ended question for qualitative insights. It was administered after each of the 25 accessible performances. The questionnaire relied on a customized version of the online survey tool LimeSurvey<sup>2</sup>, chosen for its flexibility and potential to integrate several user-friendly features to cater for the needs of participants with different disabilities and needs. As a matter of fact, they could activate an automatic scrolling function, allowing for hands-free navigation through the survey. Additionally, the written content could be converted to audio using a text-to-speech application, with the option to download the content as an mp3 file for offline use. Further customization allowed users to adjust reading speeds to suit their preferences, catering to varying levels of visual or cognitive processing needs. For those requiring or preferring a physical copy, a printable version of the questionnaire was also made available, although not recommended. The ease and flexibility of the questionnaire, aligned with the principles of universal design, addressed diverse user needs and enabled the collection of a wide range of data. Moreover, to preserve the immediacy of the responses and maintain the reliability of the data, each survey was closed 48 hours after each show, ensuring

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<sup>1</sup> To ensure transparency and replicability, the full questionnaire is available in the Appendix and includes the original Italian and English versions.

<sup>2</sup> Available at: <https://www.limesurvey.org> (accessed on 19 January 2025).

that participants' feedback reflected their experiences shortly after the event. This was particularly crucial for the accuracy of responses in section 3, which focused on aspects of the lived experience, that is their personal and subjective perceptions of the event. These experiences are especially vulnerable to temporal and spatial detachment, meaning that as time passes and participants become physically and mentally distanced from the event, their memories and impressions may fade or become less accurate.

The survey consisted of four distinct sections, integrating both quantitative measures and qualitative components to provide a comprehensive analysis of participants' experiences and perspectives. The first section focused on collecting demographic data, including age, type of disability, and prior familiarity with opera or accessible live performances. This foundational information provided valuable context for analyzing the responses and identifying trends among different audience groups.

Section 2 of the survey focused on evaluating the effectiveness of the digital tools provided. Participants were asked to indicate their level of agreement with various statements using a Likert scale, which ranged from "strongly agree" to "strongly disagree," along with an additional option, "I did not use the tool." As elaborated in Section 5.2, these statements assessed whether the accessible trailers, opera booklets, and Easy-to-Read guides successfully helped participants enjoy and understand the opera.

In section 3, closed-ended questions provided metrics on immersion, cognitive load and subjective wellbeing, with three questions dedicated to each parameter. This section of the survey included propositions addressing a well-defined topic formatted according to a Likert scale. Respondents were asked to indicate their level of agreement or disagreement with each item, using a scale that ranged from "strongly agree" to "strongly disagree." These responses were analyzed as symptomatic indicators of an underlying latent concept, which, while not directly observable, could be inferred from the patterns and distributions of the participants' answers. This approach allowed for the quantification of subjective attitudes and perceptions, facilitating a deeper understanding of the latent construct in question.

The first psychological parameter was immersion, defined as the participants' sensation of being deeply absorbed in the experience. Immersion occurs when individuals feel so captivated by the world of the experience that it takes precedence over their awareness of their immediate surroundings (Wilken and Kruger 2016: 258). When fully immersed, individuals perceive the mediated environment as though it were unmediated, blurring the boundaries between the fictional and their real-world experiences (Fryer et al. 2013).

The second psychological parameter examined in this survey was cognitive load, a key factor in understanding the mental demands placed on participants while engaging with the experience. Cognitive load refers to the cognitive effort required to perform a task or interact with a service or experience. Research indicates that moderate levels of cognitive load can enhance both comprehension and immersion, fostering deeper engagement with the content (Fresno 2014; Fresno 2017; Sweller et al. 2019).

Subjective wellbeing, as explored in this study, extends beyond simple satisfaction or enjoyment (Diener et al. 2003), encompassing a holistic sense of emotional, intellectual, and social fulfilment derived from the opera experience (Di Giovanni and Raffi 2022). It was assessed using three key parameters: overall happiness, acquired knowledge, and relational skills (Diener et al. 2002). Happiness, as a core component of subjective wellbeing, reflects a general sense of satisfaction, contentment, and joy in life. Acquired knowledge focuses on the learning and personal development participants gained through the experience. Relational skills, the third parameter, measured an individual's ability to build and sustain meaningful connections with others.

Finally, in the fourth section, open-ended questions encouraged respondents to articulate personal reflections and experiences. To complement the structured surveys, unsolicited feedback was gathered via email. As further discussed in Section 6, open-ended and spontaneous commentary provided unfiltered insights into how attendees perceived the accessibility project.

In total, we received 365 complete questionnaire responses, all of which were included in the analysis. Each response met the required criteria: full completion of all four sections of the questionnaire and submission within the 48-hour post-performance window. This ensured that all collected data reflected immediate and structured feedback, suitable for both quantitative and qualitative analysis. The combination of these self-reported metrics and open-ended reflections provided a comprehensive understanding of audience reception, underscoring the value of accessibility measures in fostering meaningful and inclusive cultural experiences.

The following section outlines the results obtained from each segment of the survey, which were analyzed and shared with the Arena di Verona managing team.

## **5. Survey results**

### **5.1. Demographics**

Considering the high number of respondents and the wide array of their backgrounds, ages, and (dis)abilities, the results of the survey offer solid insights into the *Arena per Tutti* experience. As anticipated, these results were not only used for scientific analysis, but were also shared and discussed with the Arena di Verona managing team and the sponsoring company. The aim of this exchange was twofold: first, to inform future developments of the *Arena per Tutti* project by highlighting areas for improvement and innovation; and second, to validate and consolidate current practices that proved particularly effective. This collaborative use of data supported a more evidence-based approach to planning, reinforcing the institutional commitment to long-term accessibility and inclusion.

The age distribution of participants showed a varied demographic, with 3% under 18, 13.4% between 18 and 34, and 11% in the 35 to 44 age group. The largest segments were those aged 45 to 54 (24.5%) and 55 to 64 (25.1%), while 22.6% were over 65. Among these participants, 68.7% were individuals with



disabilities, with the highest representation in the 45 to 54 (16%) and 55 to 64 (17.2%) age groups. Accompanying persons, who made up 31.3% of the total, also reflected a similar trend, with a strong presence in the 45 to 54 (8.6%) and 55 to 64 (8%) categories. This spread highlights a strong representation among middle-aged and older participants, with smaller but notable engagement from younger age groups.

This age diversity highlights the overall universal appeal of the project, which may also relate to the venue (a worldwide-known, open air arena), the season of the festival (full summertime) and the type of opera performances offered (the most popular operas from the classical repertoire). Anyway, the level of inclusion — in terms of age — here recorded is particularly significant as it points to intergenerational engagement and new audience building even though accessibility.

As a second parameter, let us consider the types of disabilities among the participants, which amounted to 69% of the overall respondents. These included individuals with visual disabilities (49%), hearing disabilities (18%), and cognitive disabilities (2%). Notably, 31% of respondents were accompanying persons, underscoring the importance of fostering an environment that is not only accessible to individuals with disabilities but also welcoming to their support networks.

Turning to the geographical distribution, the data highlights a varied audience, with participants from across Italy and abroad, primarily from Austria, Germany, and the United Kingdom (nearly 10%). Within Italy, the strong representation from Veneto (47%) underscores the local enthusiasm and engagement, while significant contributions from regions like Lombardia (18%), Emilia-Romagna (13%), and Friuli-Venezia Giulia (7%) showcase the appeal across the northern regions. Notably, the participation from regions like Lazio, Piemonte, Trentino-Alto Adige, even if smaller in numbers (around 5%), reflects a national reach, with representation from both the central and southern areas of the country, including Puglia, Sardegna, and Abruzzo (around 3%).

A particularly compelling result emerged from the group of “first-timers,” individuals who were attending an opera or an accessible live performance for the first time, which amounted to 51% of the overall sample; within this subset of first-time attendees, 30.1% were people with disabilities. Breaking this down further, the age distribution of first-time attendees revealed notable patterns. The largest groups were individuals aged 55 to 64, comprising 27.1%, and those aged 45 to 54, representing 25.7%. Younger participants were also represented, with 12.9% aged 18 to 34 and 11.4% aged 35 to 44. Notably, 5.7% of first-time attendees were under 18 years of age.

The following section delves into how digital tools played a pivotal role in deepening participants' engagement and understanding of the opera, making the experience more accessible and digitally enriched.

## 5.2 Digital tools

Digital tools enabled participants to explore the opera at their own pace and helped demystify the experience, making it more relatable and less

overwhelming. The positive impact of these tools is reflected in the results of the survey's second section, dedicated to assessing their effectiveness. In this part of the questionnaire, participants were invited to evaluate each of the three main digital resources — accessible trailers, opera booklets, and Easy-to-Read guides — based on their own experience and level of interaction. The evaluation focused on a range of interrelated aspects, such as the clarity of the information provided, the usefulness of the tool in preparing for the performance, its perceived contribution to understanding the opera's plot and characters, and its role in enhancing overall enjoyment while reducing any sense of disorientation or inaccessibility.

Each of these aspects was addressed through specifically formulated statements, and respondents were asked to express their level of agreement using a five-point Likert scale, as outlined in Section 4. To account for those who may not have used a given resource, an additional response option — “I did not use the tool” — was included to avoid skewing the results and ensure accurate interpretation of the data.

The survey results highlight the significant contribution of these tools. The inclusive trailers emerged as particularly effective, with 83.3% of respondents reporting a positive impact on both their enjoyment and understanding of the opera. The accessible opera booklets performed even better, with 100% of participants indicating they enhanced their enjoyment, and 98.6% stating that they facilitated understanding, while only 1.4% expressed neutral or slightly negative views. The Easy-to-Read guides, which were especially appreciated by individuals with cognitive or intellectual disabilities and their caregivers, received unanimous positive feedback regarding both aspects.

Respondents with disabilities reported overwhelmingly positive experiences with all three digital tools. Their feedback emphasized the clarity and accessibility of the language, the comforting structure provided by the materials, and the general sense of empowerment and confidence these tools enabled. Several participants reported using the tools in combination — such as watching the trailer, consulting the booklet, and bringing the Easy-to-Read guide to the event — demonstrating how layered and flexible access options can support varied sensory and cognitive needs.

Beyond the survey responses, the effectiveness of these digital tools is also evidenced by engagement metrics. Over the course of the project, 2,400 individual users accessed the platform, generating 4,600 interactions and 5,200 downloads. Compared to the previous year (2023), there was an 81.51% increase in returning users, and the average engagement time rose from 7.74 seconds to two minutes. This indicates that users were not only attracted by the tools but were also meaningfully engaged with their content. In addition, the number of engaged sessions per user increased by 89.94%, confirming that the digital resources fostered sustained interest and deeper connection with the material.

These figures suggest that the tools did more than simply provide information: they actively shaped the cultural experience, offering a bridge between preparation and participation. For many, these resources served as a gateway into a cultural space that had previously felt inaccessible or intimidating. For others, they offered reassurance, structure, and accessible

language to mediate the complexity of the opera performance. Ultimately, the success of these digital tools lies not only in the positive feedback received, but also in their demonstrated capacity to adapt to a wide range of needs.

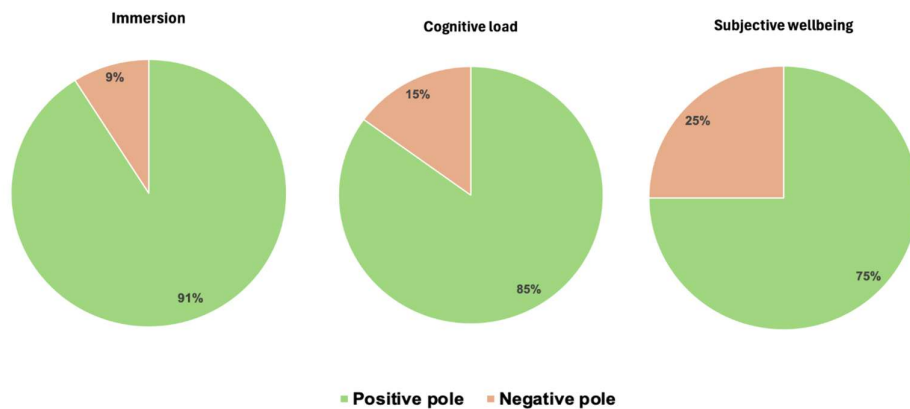
In addition to digital tools, we also explored psychological engagement among participants. This included assessing their levels of immersion in the opera experience, the cognitive effort required to engage with the performance, and the overall impact on their subjective wellbeing, as further discussed in the following section.

### 5.3 Psychological parameters

This section presents the analysis of three key psychological parameters: immersion, cognitive load, and subjective wellbeing, which were identified and operationalized during the design phase of the questionnaire (see Section 4). These parameters were selected based on established models of user experience and accessibility, and their inclusion aimed to provide a deeper understanding of the affective and cognitive responses elicited by the accessible opera experience.

To analyze these psychological engagement data, responses were categorized into three polarity groups based on a Likert scale: positive, neutral, and negative. The positive pole included responses indicating “very much agree” or “agree” with items reflecting low levels of cognitive load, signifying that participants found the experience cognitively manageable and engaging. The neutral pole encompassed responses marked as “uncertain,” suggesting ambivalence or mixed feelings about the cognitive demands of the experience. Finally, the negative pole consisted of responses such as “disagree” or “very much disagree,” indicating higher levels of cognitive load, where participants felt the experience was mentally taxing or difficult to follow. This classification enabled a more nuanced analysis of how participants experienced the event in terms of mental effort and emotional involvement, and of how accessibility measures contributed to enhancing the quality of their engagement.

By correlating these polarity groups with other variables, such as demographic factors (see Section 5.1) and accessibility tools used (see Section 5.3), a clearer picture of the interplay between cognitive effort and audience experience was achieved. Figure 1 shows the percentage averages for each parameter, for the whole sample:



**Figure 1.** Psychological engagement

Starting with the first parameter, the statements included in the survey explored different aspects of immersion, such as the emotional connection and the sense of being engaged with the world presented on stage. Specifically, participants were asked to evaluate whether they felt relaxed at the end of the performance, whether they experienced a connection with the world depicted on stage during the performance, and whether they were emotionally involved with the performance overall. From the survey results, it is evident that the performances were perceived as both accessible and engaging, with 91% of responses reflecting positive outcomes and only 9% indicating negative feedback (see Figure 1). Breaking this down further, the level of immersion was positive across both groups surveyed. Among accompanying persons, 88.9% reported a positive experience of immersion and people with disabilities demonstrated an even higher positive response, with 94.8% describing their immersion as positive. Notably, negative feedback was minimal in both groups, with 11.1% among accompanying persons and an exceptionally low 0.7% among people with disabilities. This deeper engagement reported by people with disabilities was frequently reflected in qualitative feedback (see Section 6). Many reported how the combination of hands-on activities, such as multisensory tools, and the integration of live and digital services, enabled them to fully grasp the storyline, understand the characters, and appreciate the intricate details of the setting.

Moving to cognitive effort, participants were asked to evaluate their experience in terms of mental and physical effort. They were provided with the following response options to indicate the level of strain they experienced: “Not tiring,” “Slightly tiring,” “Tiring,” “Very tiring,” or “Extremely tiring”. The intense focus needed to follow the intricate elements of opera (such as the plot, music, and often unfamiliar language) can present significant challenges, particularly to people with sensory or intellectual disabilities. The results of the survey indicate that the accessibility services provided were effective in

alleviating cognitive load, making the experience more approachable and enjoyable. This is reflected in the responses, with 85% of participants providing positive feedback and 15% expressing negative opinions (see Figure 1). Breaking this down further, 78.5% of participants with disabilities reported a positive experience and among accompanying persons, the results were also favorable, with 77.5% providing positive feedback. Open feedback from participants (see Section 6) confirmed the effectiveness of digital resources and tools provided in advance (see also Section 5.2), allowing participants to familiarize themselves with the opera's narrative and key elements before the performance. These findings align with existing literature on pre-show accessibility resources. Fryer (2021) emphasizes their value in enhancing attendance and comprehension for blind and partially sighted audiences, while Hermosa-Ramírez and Reviers (2024) explore the evolution from traditional audio introductions to more dynamic and inclusive formats such as podcasts. In line with these studies, our data suggest that preparatory tools can significantly improve emotional readiness and reduce cognitive overload. In addition, many reported that the multisensory experiences offered before the shows helped them anticipate what they would see, hear, and feel, reducing potential overwhelm (see Section 6).

Finally, regarding subjective wellbeing, participants were invited to indicate whether the experience had enhanced their knowledge, boosted their happiness, or strengthened their social relationships. By addressing these three dimensions, our findings revealed a substantial positive impact on participants' subjective wellbeing (see Figure 1). For 75% of respondents, the experience contributed significantly to feelings of happiness, a sense of belonging, and emotional satisfaction. The remaining 25% of responses, which reflected negative outcomes, were primarily linked to one specific component of subjective wellbeing: relational skills. Breaking this down further, 75.5% of accompanying persons reported positive outcomes in subjective wellbeing, indicating that the experience enriched their happiness and knowledge. Meanwhile, among individuals with disabilities, 66.7% expressed positive outcomes.

These findings align with patterns commonly observed in immersive and highly engaging experiences. In such contexts, individuals often become deeply absorbed in personal activities or focused tasks, which can naturally limit opportunities or the need for social interaction. For example, during an artistic performance that requires intense focus and mental effort, participants are more likely to turn their attention inward (i.e., reflecting on their own thoughts, feelings, or performance) or outward toward the specific demands of the activity itself. This engagement temporarily reduces the emphasis on relational interactions, as individuals prioritize their immediate goals or internal processes over social connection. As evidenced by the analysis of open-ended questions and spontaneous feedback (see Section 6), this phenomenon does not indicate a deficiency in relational abilities but rather reflects a typical shift in attention within immersive settings: once participants exit these deeply engaging experiences, they frequently re-engage socially with greater enthusiasm, drawing on new perspectives and insights.

Besides the findings analyzed in this and the previous sections, this article offers an overview of the spontaneous feedback gathered both through the open-

ended, non-compulsory questions at the end of the survey, and via email at the dedicated address for *Arena per Tutti* (see Section 6).

## 6. The importance of open and spontaneous feedback

After a detailed analysis of the *Arena per Tutti* project and the results of the survey administered to its participants in 2024, we will now focus on the rich, diverse and occasionally surprising spontaneous feedback provided by many participants. This was gathered by means of one open question provided at the end of the survey, but also via email, respectively within 48 hours (survey) and 4 days (email) from the accessible experience in Verona. This brief, qualitative analysis aims to expand and corroborate the results gathered through the main survey, and, in empirical terms, it provided additional insights to the Arena di Verona Opera Festival organizers and sponsors. Before focusing on the actual, spontaneous feedback, an overview of the figures for the engagement and interaction with the accessible digital tools and the online content related to the Arena di Verona accessibility project may be useful. The dedicated webpage [www.arenapertutti.it](http://www.arenapertutti.it), also embedded in the Arena di Verona Opera Festival website ([www.arena.it](http://www.arena.it)), although created only one month before the beginning of the live accessibility project, recorded 14,000 interactions over three months, from 2,500 individual users. On social media (Facebook and Instagram), the content (in English and Italian) dedicated by the Fondazione Arena di Verona to the accessibility project reached over 1.5 million users all over the world: short trailers and reels were viewed for an overall 67,000 minutes over the three-month period. Equally successful was the social media campaign for *Arena per Tutti* designed by the project sponsor: reels and posts by the sponsor, created with the support of young persons with disabilities, were viewed 3.6 million times, with over 150,000 reactions and comments, most of them enthusiastic and encouraging.

The optional open question provided at the end of the survey was compiled by 57 participants, with sentences whose average length amounts to 13,2 words. By generating a frequency list of the words used in all 57 replies, we obtain an interesting and revealing list of the top five words – excluding articles and auxiliary verbs – that are “experience” (39 occurrences), “thank you” (31), “staff” (19), “congratulations” (15) and “initiative” (12). All these words appeared once in each reply. Although they are not exact synonyms, experience and initiative together appear in 89.5% of the replies: experience, a more positive and comprehensive word, is accompanied by adjectives such as unique, thorough, beautiful, enriching and unforgettable. The second, most common word, i.e. “grazie” (thank you), occurs in 54.5% of the replies, pointing to the appreciation and positive reactions to both the live experience and the supporting materials. This recurrent expression of gratitude also resonates with later feedback, where some participants described the digital tools as “gifts.” Such wording reveals how accessibility is still often perceived not as a right but as an unexpected or exceptional benefit — something to be thankful for, rather than a standard component of cultural participation.

Quite interestingly, the third most common word is “staff”, which appears in one third of the replies (33.3%), mostly in conjunction with adjectives that qualify the experience made possible by the Arena di Verona staff (kind, friendly, understanding, human). The fourth most common word, “congratulations”, is featured in 26,5% of the replies, complementing the gratitude (thank you) with an expression of appreciation for the project. It may be worth noticing also that the sixth most frequent word is “kindness”, appearing in 10 out of the 57 open replies.

As for the spontaneous feedback received via email, only messages received within 4 days after the accessible live experience were here considered. Overall, over 50 emails of this type were collected in two months. Although extremely valuable in content, these emails varied widely in length, tone, language, and structure, and were not collected through a systematic or methodologically planned format. For this reason, they were not subjected to a structured thematic analysis in this study. Nonetheless, they offered powerful insights and recurring motifs which serve as qualitative support to the findings presented<sup>3</sup>. Therefore, we will briefly focus on some key issues that were raised in one or more emails, starting from the appreciation of the sensory experience that preceded the accessible performances that appears in over 15 emails. Among other things, participants highlighted the importance of listening to the voices of the professionals working at the Arena di Verona, who acted as guides in the multisensory tours along with accessibility experts; they also praised the opportunity to touch settings, costumes and props, with the majority of these comments coming from caregivers of persons with cognitive disabilities (writing on behalf of the latter) and from blind and partially sighted participants. Two emails commented on the very positive *family experience*, where different persons enjoyed different aspects of the live experience: the backstage, the subtitles for the deaf, the explanatory audio introduction, thus reinforcing the idea that when accessibility is truly inclusive, it can be beneficial for all.

In two emails, the digital tools accompanying the accessible experience are defined as *gifts*: this is a very positive word, which nonetheless points to the scarcity of inclusive experiences that are still perceived by persons with disabilities as a gift, not a right.

Moreover, several emails were sent by persons who had participated in *Arena per Tutti* in 2023, and again in 2024: a good part of those emails highlighted an improvement in the overall experience, and the addition of new features to the digital tools.

To conclude, one email offered us a reflection on the very notion of inclusion: the author stated that “inclusion is very often used as an empty word, as a facade”, and s/he goes on to say “on the contrary, this experience has been very important for me, it has made my life better” (our translation), which points back

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<sup>3</sup> A more structured approach to open feedback — through interviews, focus groups or digital ethnography — could be explored in future studies, in line with current trends in accessibility research that frame long-form responses and group discussion as critical tools for inclusive evaluation.

to the notion of subjective wellbeing and its increase for people with disabilities, when inclusion is not a facade, but a real opportunity.

## 7. Final remarks

As anticipated, the year 2025 is particularly significant for accessibility and inclusion to cultural sites and events, at national and international level. The first G7 on Disability and Inclusion, held in October 2024, led to the launching of the Solfagnano Chart, whose first effects are starting to be seen and further disseminated. In June 2025, the coming into force of the European Accessibility Act throughout the EU marks a milestone, to which governmental bodies and institutions, as well as private companies and organizations, are adjusting, especially in terms of digital information and communication. At national level, in many countries, actions are being taken to ease the application of these international laws and recommendations and to truly promote access: in Italy, for instance, the Ministry of Culture, through the “Direzione Generale per lo Spettacolo” (General Direction for Entertainment) is encouraging the participation of artists with disabilities at all levels by finally offering substantial, dedicated funding. Moreover, the calls for national funding for live (and non-live) entertainment now lists the implementation of accessibility measures and strategies amongst its general (primary) goals, again with dedicated financial resources.

Along these lines, many foundations, festivals, associations and production companies, reluctant as they may have been in the past years, are now opening their eyes to accessibility and inclusion, trying to design services and tools to strengthen their programmes. It is also for this reason that sharing the structure, outreach and reception of a project like *Arena per Tutti* is today more significant: it may inform, inspire and lead the way to similar experimentation, in many ways.

One datum that has not yet been shared about this project is connected to the engagement of people who worked to make *Arena per Tutti* a solid reality with impressive figures: over 6 months, over 15 accessibility operators and professionals and 10 members of the Arena di Verona staff have committed to the project and actively participated in it. Over 2,000 emails were exchanged, approximately 400 phone calls were made with persons with disabilities, their associations, friends and families to inform, reassure, and welcome them. This engagement adds up to the overall success of, and satisfaction with, a truly inclusive project.

As Dangerfeld, Moores, and Romero-Fresco recently put it (2024: 4), after years of researching and experimenting with traditional accessibility, it is time to decolonize it, i.e. to strive from all points of view and positions to make it truly inclusive, collaborative and beneficial for all that are and can be involved.

As shown by the survey results (see sections 5.2 and 5.3), digital tools such as accessible trailers, Easy-to-Read guides and opera booklets played a significant role in helping participants enjoy and understand the performance. These tools received overwhelmingly positive feedback, particularly from participants with disabilities. Moreover, psychological measures confirmed high levels of



immersion (91% positive responses), reduced cognitive load (85% positive), and a significant increase in subjective wellbeing (75% positive), especially in terms of emotional satisfaction and knowledge acquisition. These findings suggest that when accessibility is designed to support every stage of the experience — before, during, and after — it not only facilitates participation but actively enhances it. Such data can inform the design of future initiatives, especially in identifying effective formats (e.g., multisensory tours, digital materials) and prioritizing user-centered, flexible digital access strategies.

In addition, while the project primarily focused on audience accessibility, the issue of inclusive employment was also brought to the attention of the Festival organizers. The potential for inclusive staffing — on stage, behind the scenes, and in design teams — is increasingly being acknowledged as an essential component of holistic accessibility.

As the figures here presented in relation to immersion, cognitive load and subjective wellbeing evidenced (see Figure 1), catering for the *before*, *during* and *after* the accessible live event experience with a host of tools and opportunities generally leads to satisfaction and empowerment, which should be the ultimate goals of all accessibility efforts. And finally, the satisfaction expressed by the managing team at Fondazione Arena di Verona bears witness to the possibility of working together to generate a truly virtuous circle.

To conclude, while presenting the outcomes of *Arena per Tutti*, this article aims to offer a practical foundation for replicating the study. By sharing the survey structure, the applied methodology, and the resulting findings, this article aims to offer a flexible framework that can be adapted to different countries or contexts (particularly in the field of live events) using identical, similar, or expanded metrics. The goal is to create a bridge to current or future accessibility projects and contribute to a growing collection of best practices, fostering a broader shift toward more inclusive and accessible events that are shaped by people's feelings, live experiences, and impact on their quality of life.

## Appendix

The complete questionnaire used for data collection — available in both Italian and English — can be accessed at the following links. The version provided refers to one of the accessible performances and is identical in structure and content to the others used throughout the project:

**English:** [<https://osf.io/cwyzu/files/osfstorage/6835a9018ea2f527d7ab8123>]

**Italian:** [<https://osf.io/cwyzu/files/osfstorage/6835a9468b3e41c00285b28c>]

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