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A Comparative Study of Signage Design in Inclusive Playgrounds and Public Parks Guidelines

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ABSTRACT

With the opening of Japan's first inclusive playground in 2020, playgrounds within Japanese parks are progressively moving towards inclusivity. Signage, serving as a vital link between parks and playgrounds, as well as within recreational facilities of the playgrounds, plays a crucial role in guiding people's way-finding behavior. However, current research on signage design systems within inclusive playgrounds remains insufficient. This study aims to comprehensively understand the design points of signage in inclusive playgrounds by analyzing the instructions for signage design in the inclusive playground guidelines and park construction guidelines in Japan. The goal is to extract the key elements of signage design to facilitate ongoing improvement and enhancement of signage design within inclusive playgrounds, thereby promoting a more inclusive play environment.

Keywords: Signage design, Inclusive playground, Guidelines

INTRODUCTION

Japan boasts over 100,000 urban parks across all its prefectures. Historically, implementing the Barrier-Free Law in 2006 marked a turning point for parks, introducing universal design features such as multifunctional restrooms. However, many parks have remained unchanged since their openings, primarily focusing on hardware improvements, while playgrounds for children have seen minimal updates (Uiko, 2020). In response to the limitations of traditional accessibility plans, the 2020s saw the introduction of a new planning approach—inclusive parks. In March 2020, the first inclusive playground in Japan, "Minna no Hiroba" at Kinuta Park in Tokyo, was opened. Since then, the concept of inclusive parks has spread nationwide. However, most initiatives have been limited to the introduction of inclusive playground equipment designed with consideration for diverse children's needs. For families of children with disabilities, while playground equipment is crucial, significant social barriers exist regarding access, activities upon arrival, and ways of playing, which need addressing (Sterman et al., 2019).

This study focuses on information transmission within the planning of inclusive parks, particularly signage planning, which is essential for access and safety (Wu and Wang, 2017). Despite its importance in enhancing

accessibility and safety for various park users, including general visitors, children, individuals with disabilities, caregivers, and the elderly, research on signage planning is limited and lacks clear guidelines. Signage plays a vital role as a fundamental information system within parks, guiding access and affecting the safety and participation experiences of all visitors (Calori and Vanden-Eynden, 2015). With the rise in popularity of inclusive playgrounds in Japan, the park construction departments of Tokyo and Fukuoka have recently issued guidelines for inclusive playgrounds. However, there remains a lack of specific guidelines for the signage within these inclusive playgrounds, as the author has not found any design guidelines specifically for inclusive playground signage.

Therefore, to identify the key design elements of signage and enhance the inclusivity of signage in inclusive playgrounds, this study conducted a review of relevant inclusive playground and public park guidelines within Japan, ultimately selecting five guidelines for detailed analysis. The objective of the study is to analyze the commonalities and differences in signage design across these different guidelines and to extract and summarize the key signage design elements emphasized in each. Through this research, the aim is to provide a scientific basis and practical guidance for future inclusive playground signage design, ensuring that signage is more systematic, comprehensive, and inclusive, thereby improving the overall accessibility and user satisfaction of the parks.

MATERIALS AND RESEARCH METHODOLOGY

The materials used in this study are sourced from publicly available guidelines on the construction of inclusive playgrounds and public parks in Japan.

Comparative Analysis

Comparative analysis is a method used in social sciences to compare cases or entities to identify patterns, similarities, and differences (Ragin, 1987). This study meticulously reviewed each selected guideline and conducted a comparative analysis of the sections related to signage in different guidelines to highlight the commonalities and differences in signage design between inclusive park guidelines and public park construction guidelines. This comparison helps identify the key elements emphasized in different guidelines, providing scientifically based recommendations for future designs of inclusive park signage.

Phase 1: Identifying Research Objectives and Questions

This study is guided by the following research questions:

1. Commonalities and Differences in Signage Design: What commonalities exist in signage design between inclusive park guidelines and public park construction guidelines? What are the significant differences between them?
2. Key Design Elements: Which signage design elements are emphasized in different guidelines?

Phase 2: Identifying Relevant Studies

We have preliminary reviewed guidelines related to parks within Japan and identified relevant documents, as shown in Table 1. These documents range from national regulations to local government directives and guidelines from non-governmental organizations. These documents serve as the core data sources for this study. Guidelines A (the Ministry of Land, Infrastructure, Transport and Tourism, 2006) and B (the Ministry of Land, Infrastructure, Transport and Tourism, 2022) are guidelines for park construction, while Guidelines C (Park Construction Division, Park and Greenery Division, Bureau of Construction, Tokyo Metropolitan Government, 2021), D (the Park Development Division, Housing and Urban Bureau, Fukuoka City, Japan, 2023), and E (the Everyone's Park Project, 2018) are dedicated to advocating for the development of parks accessible and enjoyable for everyone.

Table 1. Guidelines for parks in Japan.

Type	Year	Title of the Guideline	Code	Remark
Japanese legislation	2006	Facility Development Points for People with Intellectual Disabilities, Developmental Disabilities, and Mental Disabilities	A	Related to parks or play spaces
	2022	Guidelines for Smooth Mobility in Urban Parks	B	Related to parks or play spaces
Japanese local government legislation	2021	Guideline for the development of a children's playground where everyone can play	C	Related to inclusion
	2023	Inclusive Children's Playground Development Guidelines	D	Related to inclusion
NGO-Association	2018	Creating Playgrounds for All Children: A Guide to Universal Design in Park Playgrounds	E	with the universal design thinking

Phase 3: Data Collection and Preliminary Analysis

In this phase, we upload the guidelines listed in Table 1 to Taguette, a software specifically designed for qualitative analysis (Rampin and Rampin, 2021). As we meticulously read through each guideline, we conduct a detailed analysis of content related to signage. Using the coding functionality of Taguette, we create multiple tags for various aspects of signage information. These tags are structured around the classification of signs (Table 2), etc., enabling us to systematically identify and analyze the key details of signage within the guidelines.

Phase 4: Charting and Comparative Analysis

In this phase, we imported the coded data generated using Taguette software into Excel spreadsheets for more detailed analysis. The critical design elements of signage are discussed in depth by comparing the commonalities and differences of the signs in each guideline. Additionally, we created charts to visually represent the analysis results, enhancing the clarity and interpretability of our findings.

Phase 5: Summary and Reporting of Results

The research questions raised in the first phase were answered through the collation and summary of critical information and insights collected during the analysis process. These findings were highlighted for improving inclusive park signage design practices, and corresponding recommendations were provided based on the data analysis.

RESULTS

Classification of Signs

Among the five guidelines analyzed, only two, Guidelines A and B, as encoded in Table 1, explicitly classify signs into categories. Both Guidelines A and B divide signs into six categories (see Table 2), four of which are common across both: Guide Sign, Information Sign, Location Sign, and Regulatory Sign. While the signs with explanatory functions are named differently in Guidelines A and B, the intended meanings are similar. The distinction lies in the fact that Guideline A includes Named Signs, which are absent in Guideline B, whereas Guideline B mentions Tactile Guide Maps, not referenced in Guideline A. Guidelines C, D, and E do not discuss the classification of signs, indicating a lack of detailed sign categorization in the current guidelines for creating inclusive playgrounds accessible to all.

Table 2. Classification of signs.

Guideline	Classification of Signs					
	Same Type				Similar Type	Different Type
A	Information Sign	Guiding Sign	Location Sign	Regulatory Sign	Explanation Sign	Named Sign
B	Information Sign	Guiding Sign	Location Sign	Regulatory Sign	Interpretative Sign	Tactile Guiding Map

Figure 1 displays a comparison of the occurrence of various sign types across Guidelines A through E. The data reveals that the information sign is mentioned in all five guidelines, highlighting its widespread importance. Guidelines A and B focus more on conventional information and guide signs. Guidelines B, C, D, and E mention sensory assistance signs, indicating that the guidelines aimed at creating parks where everyone can play are more focused on accommodating individuals with disabilities.

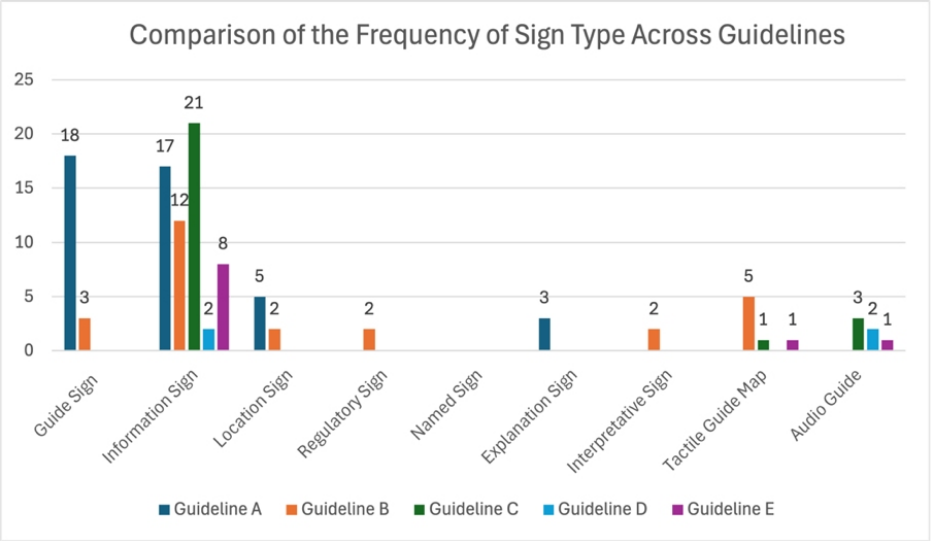

Figure 1: Comparison of the frequency of sign type across guidelines.

Comprehensive Analysis of Information Signs

Information signs are mentioned in all five guidelines. Hence, this section focuses on an in-depth analysis of Information signs (table 3). The analysis is conducted from the following three perspectives.

Position and Purpose

① All five guidelines consistently emphasize the importance of installing signs at park entrances and major junctions. ② Guidelines B and C also highlight the need for Information signs in parking areas. ③ Several guidelines recommend placing conspicuous signs along routes leading to key facilities within the park, such as restrooms and play areas, to aid visitor navigation. ④ Regarding visibility, the guidelines commonly stress placing signs in easily recognizable locations, considering users of varying heights and visual capabilities, including wheelchair users, older people, and children, to ensure the signs are easily visible to all. ⑤ Guidelines C, D, and E specifically note that entrance signs should clearly state that the park is accessible and enjoyable for everyone. In general, the purpose of location setting is mainly to improve the navigation efficiency of visitors and the park experience.

Content Display in Signage

① Clear Visual Design: The guidelines emphasize using large font sizes and clear contrasts between background colors and brightness to enhance readability. Guideline C refers to the application of the Tokyo Metropolitan Government's Color Universal Design Guidelines (Tokyo Metropolitan Government, 2011). ② Detailed Information Provision: The guidelines recommend providing comprehensive details such as the layout of park facilities, paths, and the locations of key amenities like restrooms and administrative offices, as well as information about playground equipment,

including their locations, usage instructions, and safety notices. ③ Emergency Information: Guidelines highlight the importance of providing information on emergency response measures, such as the locations of Automated External Defibrillators (AEDs) and various safety instructions to ensure the safety of park users.

Inclusivity

① Multilingual Support: All guidelines emphasize using foreign languages, including English, Chinese, and Korean, to accommodate visitors of various nationalities. ② Use of Pictograms: Multiple guidelines mention the use of pictograms, which facilitate cross-linguistic and cultural understanding, especially for non-Japanese speakers and individuals with limited literacy skills. Guideline D mentions explicitly the inclusion of pictograms that represent elderly and wheelchair users to convey the concept of playgrounds. ③ Provision of Auxiliary Information: The guidelines advocate for the use of braille, tactile maps, three-dimensional models, and audio guidance systems to enhance accessibility for visually impaired visitors. ④ In terms of accessibility: The guidelines prioritize the needs of specific groups, such as the elderly and disabled, offering a variety of informational and assistive features to facilitate their independent access and use of park facilities. ⑤ Creating a Welcoming Environment: Guidelines C, D, and E emphasize the importance of fostering an inclusive atmosphere by placing friendly and encouraging signs at park entrances and rest areas. These signs convey a message of inclusivity, making visitors feel welcomed and respected.

In summary, the analysis of the information signs across five guidelines reveals that all guidelines emphasize placing easily recognizable and accessible signs at key locations such as entrances and main routes. They commonly employ multilingual markings and graphic symbols, like pictograms, to enhance the readability and comprehensibility of information, focusing on the concept of inclusive design to ensure that all visitors, especially those with special needs, can conveniently use park facilities.

Table 3. Analysis of the information sign.

Guide line	Position and Purpose	Content Display in Signage	Inclusivity	
			Multilingual and Pictogram Representation	Accessibility
A	• Starting point, branching point, key point, major entry and exit points. • Considering wheelchair users and the elderly, the roadside type will be the standard. • Install in a visible position and orientation.	• If installing multiple units, use a unified design. • Include the distance to the destination. • Easy-to-understand design using large letters and figures. • Consider the difference in color and brightness with the background color.	• Combine Roman letters, English, Kanji, Hiragana, and pictograms, etc. • Use both text and Braille notation. • Highly visible square gothic typefaces. • JIS Z8210, Standard Guide for Pictograms for Guidance.	• Easy to understand. • Consider the effective combination of tactile paving for the visually impaired, guideboards, signs, and auditory or visual signals.
B	Place near major entry and exit points, branching points, and parking areas.	• The layout and routes of park facilities • Display information on barriers such as park paths, stairs, and steep slopes, as well as information on major park facilities such as restrooms, management offices, and parking areas.	International Symbol Mark or JIS Z 8210 "Facilities Accessible to People with Disabilities" pictograms for public and general facilities.	Provide diverse information with consideration for the use by elderly and disabled individuals.
C	• Install at the entrances of plazas, park entrances, and parking lots. • Position at heights that are easily visible to children and wheelchair users. • Clearly display the location of plazas, barrier-free restrooms, park paths leading to plazas, the relative positions and scales of each playground equipment, as well as the target age group and usage instructions.	• Clearly indicate the location of plazas and barrier-free restrooms. • Install guide boards that clearly show an overall map of the plaza, the arrangement of playground equipment, usage instructions, and safety precautions. • Pay careful attention to details such as expression, color schemes, font selection, and pictogram design. • Tokyo Metropolitan Color Universal Design Guidelines.	• Use concise expressions and easy-to-recognize displays, such as clear pictograms and tactile maps. • Include foreign language notations, such as English, Chinese, and Korean. • Introducing Braille notations, tactile maps, 3D models, audio guide devices, QR codes, and various applications is desirable.	• When Braille guides are installed at plaza entrances, ensure that the paving allows visually impaired users to recognize these locations. • At park entrances or parking lots, it is necessary to have guide boards that indicate the location of the "children's playground where anyone can play" and the barrier-free routes.

(Continued)

Table 3. Continued

Guide line	Position and Purpose	Content Display in Signage	Inclusivity	
			Multilingual and Pictogram Representation	Accessibility
D	• Signage is displayed at the park entrances to indicate that it is a park where everyone can have fun. • Use clear expressions and display heights that are understandable for both children and adults.	• Provide information about the playground and surrounding facilities, including a layout map of the entire park, route maps, available services, and emergency response procedures. • Display rules for play, basic usage instructions for playground equipment, and safety precautions. • Clearly indicate the purpose and zones of the plaza. • Include information that promotes mutual assistance among children and among parents. • Post information that encourages mutual assistance without overly regulating children's play	• Use pictograms, Braille, and simplified Japanese to create accessible signage for visually impaired individuals and foreigners. • Display illustrations representing wheelchair users and people of all ages and genders.	• Concept of the playground • Signage indicating that it is a place where everyone can have fun. • At rest areas where parents tend to gather, there are informational signs explaining the concept of the inclusive children's playground. • Designed to be inviting and easily accessible to a diverse range of users.
E	• Entrances and exits. • Current location and direction at junctions of park paths.	Display the contact information for reporting any playground equipment malfunctions and the location of the nearest AED (Automated External Defibrillator).	• Add furigana, pictograms, and foreign language notations. Use Braille, tactile maps, and 3D models. • Install audio guidance systems. • Utilize QR codes, map functions, and various applications to provide information for smartphones and tablets. • Employ pictogram signage, tactile signposts, and motion sensors that trigger audio cues.	• Ensure the height is easily visible for children and wheelchair users, and maintain simple and clear expressions to facilitate understanding for a diverse audience. • Create an atmosphere at the entrances and exits that makes people feel "welcome."

The term 'plaza' used in Table 3 below refers to communal areas where families can gather for social activities.

Brief Analysis of Other Types of Signage

The following analysis was conducted on other types of signs (table 4):

Guiding Signs

Both Guidelines A and B emphasize placing guidance signs at junctions, prioritizing the direction and location of major facilities within the park. The needs of wheelchair users, the elderly, and people with disabilities are taken into consideration. Guideline A particularly emphasizes the continuity and visibility of guidance signs, such as placing them at key locations like entrances, stairways, and corners. Even in long corridors without obvious branches, signs should be repeatedly located, and the distance to the destination should be indicated for longer routes. The design of the signs should be simple and unified, with multilingual annotations and the use of standard graphic symbols from JIS Z8210. It is recommended to use the visually recognizable Gothic font.

Location Signs

Both guidelines emphasize that location signs should clearly indicate the position of park facilities. Guideline A suggests that location signs be placed near the facilities, with a simple and unified design, and at a height suitable for wheelchair users. Guideline B emphasizes the use of international symbols or JIS Z 8210 standard markers on facilities accessible to wheelchair users.

Explanation Signs

Primarily serving an explanatory role, explanation signs clarify the use of facilities. When facilities offer multiple options (such as age or difficulty levels), explanation signs should be set to convey the information accurately. It is recommended to use easily understandable text or pictograms.

Regulatory Signs

Regulatory signs inform visitors of cautionary and prohibited actions (Dalton, 2013). It is recommended to use easily understandable text and pictograms.

Tactile Guiding Map

Signs should use braille and tactile symbols to indicate the location and direction of facilities. Major entrances and parking areas should be equipped with tactile maps and appropriate audio guide devices. The display methods for braille and tactile maps should conform to JIS T 0921 and JIS T 0922 standards, and the color schemes should consider the needs of those with low vision. Additionally, guidelines C and D emphasize the provision of tactile guide maps displaying the layout of restrooms.

Table 4. Analysis of other types of signage.

Type of Sign	Position and Purpose	Content Display in Sign	Inclusivity (Multilingual and Pictogram Representation, Accessibility etc.)	Guide line
Guide Sign	• Entrances and exits, boarding and alighting areas, staircase entrances and exits, and corners of pathways. • Provide continuous information. • In long corridors, place information repeatedly. • Install at corners. • Display information facing the pathway. • Ensure a small upward viewing angle, considering wheelchair users.	• A simple and unified design. • Prioritize displaying major facilities. • For long distances, indicate the distance to the destination.	• Include multiple languages. • Use JIS Z8210 pictograms. • Use the highly visible square Gothic font.	A
	Located at major junctions.	Directional signage for facilities.	Consideration for the elderly and disabled.	B
Location Sign	• Located near facilities. • Facing the pathway. • Small upward viewing angle, considering wheelchair users.	A simple and unified design.		A
		Notification of park facility locations.	Attach international symbol marks or JIS Z 8210 indications to facilities accessible to wheelchair users.	B
Explanation Sign		• Use diagrams for concise explanations. • Install explanatory signs based on options (age groups and difficulty levels).		A
Interpretative Sign		Description of facilities and points of interest.	Easy-to-understand text and pictograms.	B
Regulatory Sign		Notice of cautions and prohibitions.	Easy-to-understand text and pictograms.	B

(Continued)

Table 4. Continued

Type of Sign	Position and Purpose	Content Display in Sign	Inclusivity (Multilingual and Pictogram Representation, Accessibility etc.)	Guide line
Tactile Guide Map	Main entrances and parking areas.		• Install audio guidance devices on tactile maps as needed. • Braille should comply with JIS T 0921, and tactile maps should comply with JIS T 0922 • Use colors considerate of low vision users.	B
		Indicate the layout of facilities inside the restroom using tactile guide boards.		C
		Indicate the layout of facilities inside the restroom using tactile guide boards.		E
Audio Guide	Install according to specific purposes such as caution, guidance, and explanation.	• Audio guidance indicating the spatial relationships within the plaza. • Audio explanations on how to use playground equipment and safety precautions. • Chimes to inform users of the elapsed playtime.	• Consider installation within the context of the park's overall universal design approach. • Ensure compatibility with nearby facilities for the visually impaired. • Carefully evaluate the use of audio stimuli, as it may be counterproductive, taking into account the needs of the local community.	C
		In indoor spaces expected to be used by visually impaired individuals, use audio guidance to convey the layout of indoor facilities.	Use audio guidance and other means to ensure that users who require special consideration can easily reach their intended restroom.	D
	Install audio guidance devices.			E

Audio Guidance

Audio guidance primarily serves functions such as warnings, destination guidance, and explanations, providing crucial assistance for visually impaired individuals (Ahmetovic *et al.*, 2023). Guideline C suggests implementing audio guides within the overall framework of Universal Design for the entire park, including audio explanations of spatial relationships within the plaza, usage instructions, and precautions for playground equipment. Given the potential for auditory overstimulation, audio guidance should be tailored to regional needs. Guideline D emphasizes using audio guidance to convey indoor facility layouts to visually impaired individuals and help special groups locate restrooms more easily. Overall, audio guidance is considered an important tool for enhancing the accessibility of park facilities and improving user satisfaction, particularly for visually impaired users.

Overall, other types of signs also consider the needs of special groups, using multiple languages and standard graphic symbols. Guideline A emphasizes a simple and unified design, and Guideline B emphasizes ensuring signs are easily recognizable and understandable, while Guidelines C, D, and E place more emphasis on providing tactile maps and audio guides for people with disabilities.

DISCUSSION

Based on the above analysis, this study aims to address the two questions raised in Phase 1:

Commonalities and Differences in Signage Design Between Inclusive Park Guidelines and Public Park Construction Guidelines

Significant Differences:

Classification of Signs: Through analyzing five Japanese park guidelines (A and B for public park construction, C, D, and E for inclusive parks), we found that the guidelines for public park construction (A and B) explicitly mention the classification of signs. In contrast, the guidelines for inclusive parks (C, D, and E) do not provide a classification of signs. Specifically, Guideline C details the display content and methods for plaza signs, and Guideline D describes maps within the park, entrance signs for plazas, and signs for various playground equipment. These focus more on information signs but do not provide an overall classification. Therefore, it is evident that the inclusive park guidelines lack a description of sign classification. Consequently, there is a need to create a specialized classification system for signs in inclusive parks based on the classification in the public park construction guidelines. This will ensure that the signage in inclusive parks is more systematic and comprehensive.

Function of the sign: The guidelines for park construction focus on general information and guidance signs, while the inclusive park guidelines emphasize auxiliary signs that cater to special sensory needs, such as tactile guide maps and audio guides.

Atmosphere creation in playgrounds: The guidelines for inclusive playgrounds place a greater emphasis on using signs to convey the message

that "this is a playground for everyone." This approach inherently promotes inclusivity within the playground and, by extension, within society. Such a concept is not mentioned in the guidelines for general park construction (A and B).

Notable Commonalities

Information signs: Both the inclusive playground guidelines and the park construction guidelines mention information signs, highlighting their universal importance. All five guidelines consistently emphasize the placement of information signs at park entrances and exits.

Design considerations for people with disabilities: Both the guidelines for inclusive parks and park construction reflect friendly designs for people with disabilities, such as considering the needs of wheelchair users and the visually impaired.

Key Design Elements

The author has extracted and summarized the sign design elements emphasized in different guidelines (Table 5). These key elements are crucial for the design of inclusive playground signage.

Table 5. Analysis of key design elements.

Key Design Elements	Guidelines				
	A	B	C	D	E
• **Conveying the Concept of Inclusivity:** The content highlights inclusivity, conveying the idea that "this is a playground for everyone," ensuring all visitors feel welcome and respected.			√	√	√
• **Multilingual and Pictorial Symbols**: The use of multilingual signage (such as English, Chinese, Korean, etc.) and pictorial symbols (such as pictograms) ensures that visitors from different linguistic and cultural backgrounds can understand the signage.	√		√	√	√
• **Appropriate Installation Height**: The installation height of the signage should consider all users, including wheelchair users and children, to ensure they can easily see and understand the signs.	√	√	√	√	√
• **Continuity of Signage**: Ensuring continuity of signage along long corridors or complex pathways.	√				
• **Placement of Signage**: Positioning signage at key locations such as entrances, junctions, parking areas, and corners	√	√	√	√	√
• **Use of Large Fonts and Clear Typography**: Ensure that text is easy to read, particularly for individuals with visual impairments.	√		√		
• **High Contrast Color Design:** Select combinations of background and text colors with strong contrast to improve visibility and readability.	√	√	√	√	
• **Indication of Safety Information and Important Facilities:** Provide signage for critical facilities within the park, such as restrooms and emergency information (e.g., AED locations), to ensure visitors can quickly access necessary information in emergencies.	√	√	√	√	√

(Continued)

Table 5. Continued

Key Design Elements	Guidelines				
	A	B	C	D	E
• **Multisensory Assistive Systems:** Provide tactile maps, tactile guides showing restroom layouts, audio guides, and Braille to enable better use of park facilities by individuals with disabilities.	√	√	√	√	√
• **Simple, Uniform, and Easy-to-Understand Design:** Maintain simplicity and consistency in signage design to facilitate quick understanding and navigation by users.	√	√	√	√	√

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study has several limitations, including reliance on publicly available guidelines and a focus restricted to parks in Japan, which lacks comparisons with guidelines from other countries or regions. The analysis is solely based on existing guidelines without field surveys or user feedback, potentially missing a comprehensive understanding of practical issues and needs. Future research should include international inclusive playground guidelines analyses to obtain more comprehensive results. Additionally, efforts should be made to validate the effectiveness of these design elements in practical applications, necessitating more empirical studies to understand user experiences and satisfaction with inclusive playground signage.

CONCLUSION

This study provides a detailed analysis of signage design elements across five guidelines, highlighting the commonalities and differences between inclusive park guidelines and public park construction guidelines, and summarizes ten key design elements that are crucial for the design of signage in inclusive playgrounds. The findings reveal that all guidelines emphasize using multilingual and graphical symbols, appropriate installation heights, and clear, simple designs to ensure overall readability and recognizability of the signs. Only the public park construction guidelines include specific categories for signs, whereas inclusive park guidelines lack such classifications but place greater emphasis on providing multi-sensory aids for individuals with disabilities, such as tactile maps and audio guides, and convey the concept of an inclusive design through signage like "This is a playground for everyone to have fun." Based on the results, this study suggests that future research on inclusive parks should establish a specialized classification system and design strategy for signage in inclusive parks to ensure that the signage is more systematic and comprehensive, thereby enhancing overall park accessibility and user satisfaction.

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