

Digital Inclusion of Children with Special Needs in Extracurricular Sports Activities

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Abstract

This article explores the inclusion of children with special needs in extracurricular sports activities, focusing on necessary adaptations for their full participation. It analyzes the current state of sports offerings in the Maribor region and identifies challenges faced by sports clubs. Key recommendations include specific coach training, systematic program adjustments, and the use of digital tools to enhance engagement and track progress. A handbook for coaches is presented, offering strategies and adaptations for various groups of children with special needs. The aim is to ensure accessible sports activities for all children, promoting their social, emotional, and physical development.

Keywords

Children with special needs, inclusion, sport clubs, inclusive sport activities, assistive technologies

1 Introduction

The inclusion process is based on the mindset that children have diverse abilities, expectations, and needs, but can learn and develop together in a suitably designed environment. In a positive school climate, where diversity is valued, every child can realize their potential [3]. The Slovenian »Placement of Children with Special Needs Act« facilitates the inclusion of children with special needs into regular educational programs with adapted implementation and additional professional assistance [6]. For effective work and active involvement of all participants, teachers must understand the characteristics of the children and the necessary adjustments concerning content, tools, environment, and other factors.

Inclusion extends beyond education to other areas of life, such as work, cultural life, leisure, recreation, and sports, although it is rarely organized in these fields. This article focuses on sports, which play a significant role in the lives of individuals by maintaining physical and mental health, boosting self-esteem, fostering friendships, and integrating into the broader social environment [1]. Organized sports activities should be accessible

to all, as they offer numerous benefits to everyone [2]. Including children with special needs in sports activities requires properly trained staff, suitable equipment and tools, and environmental and content adjustments. For successful inclusive sports training, it is crucial that coaches and other professionals in sports understand the specific needs of different groups of children with special needs, implement necessary adjustments during the training process, and remain open to exploring new possibilities and solutions [5].

In recent years, digital tools have become essential in adapting sports activities for children with special needs. Modern technologies, such as exercise tracking apps, virtual reality, and interactive training programs, enable adaptations that facilitate inclusion in sports activities [7]. These tools not only ease the implementation of training but also increase children's motivation, allow monitoring of progress, and adapt activities to their needs and capabilities.

Through a review and analysis of the current situation, conducted via survey research, we investigated the possibilities for including children with special needs in organized sports activities in the Maribor area and the surrounding regions, and the knowledge of this field among the leaders of sports clubs and associations. Special emphasis was also placed on the use of digital tools, which can significantly contribute to improving the quality of sports programs for children with special needs.

Based on the analyzed research results, which will be described in the following sections, and the review of documented good practices from abroad, we have developed a handbook [4] providing guidelines for successfully implementing an inclusive training process. This handbook aims to enable coaches to effectively work with children with special needs within regular sports programs.

2 Empirical research

2.1 Problem definition and purpose

The issue of including children with special needs in organized extracurricular sports activities is critical, as we observe in practice that this group of children has limited opportunities to participate in mainstream programs of sports clubs and associations.

The purpose of the research was to analyze the existing situation and identify barriers preventing the inclusion of these children in sports activities. By doing so, we aimed to contribute to a better understanding of the issue and develop guidelines for working with each group of children with special needs in sports.

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2.2 Objective of the empirical research

The primary objectives of the empirical research were:

- To determine the opportunities available for children with special needs to participate in extracurricular sports activities in the Maribor area and its surroundings.
- To identify the barriers and reasons why sports clubs/associations reject children with special needs.
- To propose solutions and formulate guidelines to improve the inclusion of children with special needs in sports activities.
- To examine the role of digital tools in adapting sports activities for children with special needs.

2.3 Methodology

The research was conducted in three parts. Initially, we performed a local environmental scan by contacting 13 disability organizations via telephone to gather data on the availability of sports programs for children with special needs and the possibilities for their inclusion. In the second part of the research, we employed a survey method to collect data on the existing practices and challenges faced by sports clubs/associations in including children with special needs in their regular sports programs.

The survey questionnaire, answered by the leaders of the sports clubs/associations, consisted of ten closed-ended and two open-ended questions. A total of 48 local sports clubs and associations, covering 18 different sports disciplines, participated in the research.

Regarding the use of digital tools in sports activities, we conducted interviews and a brief review of studies published in journals. The handbook written following the research is based on the conceptual framework of foreign sports organizations that exemplarily implement inclusion in sports practice. To deepen our understanding of the inclusive paradigm, we attended online courses organized by their umbrella organizations, studied the methods and principles essential for achieving inclusion in sports, and supplemented these insights with our own experiences.

3 Analysis of the sports offer by disability organizations

The analysis of the sports offerings by disability organizations in Slovenia (town Maribor area and its surroundings) revealed that while the range of sports activities is extensive, no association allows participation by children, only by their adult users.

From the analysis of the second part of the research, in which the leaders of sports clubs/associations reported on their experiences and challenges in including children with special needs in their regular programs, we found that most leaders first inquire about the child's disability, impediment, or deficiency and implement certain adjustments in their work. Data on the number of children with special needs included in regular sports programs was not provided by most sports clubs/associations. Those that did provide information reported having only one to six children with special needs in their sports clubs/associations.

The main reasons cited for non-inclusion were the lack of trained personnel capable of making appropriate adjustments,

hindrance to the progress of other participants, and fear of responsibility.

The analysis of the inclusion of children with special needs in sports clubs and associations showed a highly varied situation. Key findings from the analysis can be linked to foreign practices, identifying the main reasons for the non-inclusion of children with special needs in additional sports activities as follows:

Social environment:

1. Negative societal attitudes towards individuals with special needs.
2. Low level of trainer qualifications: sports clubs and associations reported that their trainers have limited knowledge and experience working with children with special needs. Most surveyed trainers expressed a need for additional education and training.
3. Inappropriate attitudes and communication towards children with special needs.
4. High costs: the groups with children with special needs are significantly smaller in number compared to others, as a higher degree of individualization is necessary for the safe conduct of training. It is also necessary to provide more coaches.

Physical environment:

1. Access issues and inadequate equipment (facilities, devices, tools).
2. Lack of programs that enable children with special needs to engage in organized sports.
3. Unadapted existing programs: although some clubs implement adjustments to their sports programs, these are often not systematic or specific enough for individual groups of children with special needs. The most common adjustments include changes in the intensity of training and individually tailored tasks.

Personal reasons:

1. Lack of confidence among trainers in their abilities.
2. Lack of confidence among parents in the abilities of trainers.
3. Time constraints for parents.
4. Financial constraints for parents.
5. Lack of parental knowledge about the importance of sports activities for their child's quality of life, available sports programs, and possible adaptive equipment and tools that would enable their child to safely engage in chosen sports activities.

Use of digital tools:

1. Digital tools, such as exercise tracking apps, virtual reality, and interactive training programs, are rarely used. However, the clubs that have introduced them reported positive effects, including increased motivation among children, better progress tracking, and more tailored training programs.

Based on these findings, we have written a handbook that formulates guidelines for improving the inclusion of children with special needs in sports activities.

4 Handbook for inclusive coaches

The handbook, developed based on the findings of our research, aims to empower coaches to successfully implement inclusive sports activities [4]. It includes guidelines and recommendations for working with children with special needs, with an emphasis on adaptations that enable these children to fully participate in organized sports activities.

The first part of the handbook defines and describes the inclusive paradigm, addressing the knowledge gaps among sports professionals on how to approach, communicate, and establish successful relationships with children with special needs.

A successful inclusive coach must possess specific knowledge and skills for working with children with special needs and create an encouraging environment where all participants can actively engage and realize their potential.

The inclusive approach of a coach is based on empathy, understanding, and respect. This requires careful planning of sports activities and adapting methods, the environment, equipment, tools, and content. Using respectful and positive language is crucial for successful communication. Coaches must develop skills to adapt the training process, be innovative in creating a motivational environment, and be adept and understanding in resolving conflicts.

The handbook describes the so-called inclusive spectrum, which includes various methods and approaches to integrate children with special needs into sports activities. Based on foreign practices, we derived inclusion models (TREE, STEP, and CHANGE IT), which are practical tools designed to support coaches in adapting and modifying sports activities.

Additionally, the handbook outlines an important friendship system that promotes peer cooperation and creates a supportive network for children with special needs.

The second part of the handbook provides detailed guidelines for adapting sports training for each group of children with special needs.

By following these recommendations and guidelines, coaches can contribute to a more inclusive environment where every child feels accepted and valued.

5 Proposed adaptations for implementing inclusive sports training

When implementing inclusive sports training, it is crucial to understand the specific needs of each child, the limitations they face, and the specific adaptations required to enable safe participation in sports activities, along with the appropriate digital tools. Each child has unique characteristics that affect their abilities and needs during training.

The following summarize key adaptations for each group to ensure full participation and optimal development of every child.

5.1 Children with Intellectual Disabilities

Adaptations for children with intellectual disabilities include using simple and clear instructions. Significant time should be dedicated to reinforcement, and it is essential to strive for a predictable and structured training environment. Coaches should

encourage positive interactions and praise achievements, thereby increasing the child's motivation and self-esteem.

Relevant digital tools include applications for visualizing exercises (as videos or pictures), which help children understand and follow instructions. Additionally, coaches can use apps to create structured training schedules, allowing children to better plan and execute activities.

5.2 Blind and Visually Impaired Children

For blind and visually impaired children, it is crucial to adapt the training environment to be safe and accessible. The use of auditory signals, tactile markers, and verbal descriptions of exercises can significantly enhance understanding and safety. Coaches must pay attention to the orientation and mobility of these children, ensuring they feel safe and accepted.

Digital tools include auditory applications that guide children through exercises and devices for auditory orientation. These tools can help children navigate the space and participate in training without additional barriers. Additionally, the use of braille displays for presenting information about exercises is beneficial.

5.3 Deaf and Hard-of-Hearing Children

Adaptations for deaf and hard-of-hearing children include using visual signals, gestures, and clear facial expressions. Coaches must ensure that all visual representations of tasks are clear and visible. Communication should be adapted so that children can follow instructions and participate in the training process without difficulty.

Digital tools include speech-to-text applications and video instructions with subtitles. Coaches can also use video calls with sign language interpreters to facilitate communication.

5.4 Children with Speech and Language Disorders

When working with children with speech and language disorders, it is important to use short and simple instructions and visual aids. Coaches should encourage communication in various ways, including gestures, picture cards, and other visual tools to facilitate understanding and participation.

Digital tools include visual communication apps and interactive storytelling apps that assist in learning and communication. Applications for creating picture communication boards are also useful, enabling children to express their needs and desires more easily.

5.5 Children with Motor Disabilities

Adaptations for children with physical disabilities involve adjusting exercises according to their physical abilities and using specific equipment, such as wheelchairs or orthopedic aids. Coaches need to be creative in designing exercises that allow participation from all children, regardless of their physical limitations.

Digital tools include motion control applications that aid in rehabilitation and virtual reality for simulating various sports activities. Movement tracking devices can also be used to monitor progress and adjust exercises based on capabilities.

5.6 Children with Long-term Illness

For chronically ill children, it is crucial to consider their health limitations and adjust the intensity of the training. Coaches must be aware of the children's health conditions and any contraindications for specific physical activities. Training should be tailored to enhance the health and well-being of the children.

Digital tools include health and fitness tracking apps that allow for adjusting training programs based on health conditions. Apps for recording symptoms and medications are also useful, enabling children to monitor their health status and adjust their activities as needed.

5.7 Children with Learning Disabilities

Adaptations for children with learning disabilities involve using multisensory approaches and offering various learning methods. Coaches should use a combination of visual, auditory, and kinesthetic methods, providing additional support and time for understanding instructions.

Digital tools include interactive learning and brain training apps that help improve cognitive functions and motor skills. Applications for creating visual schedules and monitoring progress during training are also beneficial.

5.8 Children with Autism Spectrum Disorders

Adaptations for children with autism spectrum disorders include creating a structured and predictable environment and using visual schedules and clear rules. It is important to reduce (or increase) sensory stimuli and adapt the training to allow focus and sustained attention.

Digital tools include apps for creating visual schedules and social stories that help understand and adapt to changes. Sensory integration apps are also useful, helping children manage sensory stimuli during training.

5.9 Children with Emotional and Behavioral Disorders

For children with emotional and behavioral disorders, it is important to create a supportive and stable training environment. Coaches should use positive reinforcements, set clear boundaries and rules, and be consistent in their training approach. Adaptations should enable children to manage their emotional and behavioral challenges and participate in sports activities.

Digital tools include apps for meditation and emotional regulation that help children manage stress and anxiety. Apps for recording and monitoring emotional states are also useful, enabling children and coaches to recognize behavior patterns and adjust training accordingly.

6 Conclusions

The inclusion of children with special needs in organized sports activities is crucial for their social, emotional, and physical well-being. This article presents various adaptations necessary for the successful integration of this group of children into sports activities. We found that adaptations depend on the specific needs of each group of children, making it essential for coaches to understand and recognize these characteristics and needs, maintain a positive attitude, be open to adjusting the training process, and seek innovative solutions.

Adaptations for individual groups of children with special needs are essential for the effective implementation of inclusive sports training. With the right approach and the use of digital tools, coaches can create an inclusive environment where each child feels accepted and valued, contributing to their optimal development and full participation in sports activities.

The use of digital tools is fundamental in facilitating these adaptations and enabling the full participation of children with special needs in sports. Applications for visualizing exercises, auditory and visual signals, interactive stories, motion control, and health monitoring are just some of the tools that can significantly improve the quality of training and increase children's motivation.

It is also important to emphasize the need for continuous education and training for coaches working with children with special needs. Only with appropriate knowledge and skills can they create an inclusive and supportive environment.

Future efforts should focus on continuing research and developing new approaches and technologies to support inclusion in sports. This will ensure that sports are accessible to all children, regardless of their abilities or special needs, providing them with equal opportunities for holistic development.

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