

# International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) as a Framework for Early Intervention Planning in Inclusive Education

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**How to cite this paper:** Damyanov, K. (2024). International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) as a Framework for Early Intervention Planning in Inclusive Education. *Open Journal of Social Sciences*, 12, 85-98. <https://doi.org/10.4236/jss.2024.1211006>

**Received:** October 4, 2024

**Accepted:** November 4, 2024

**Published:** November 7, 2024

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## Abstract

This study investigated the potential of the International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) as a framework to enhance early intervention practices in inclusive educational settings. Through the integration of a biopsychosocial model, the ICF-CY offers a comprehensive approach that accounts for the physical, cognitive, and environmental factors that influence a child’s development. This study examined how the ICF-CY facilitates the development of individualized intervention plans tailored to each child’s unique strengths and challenges, with an emphasis on participation in educational and social activities. Case studies from three kindergartens in Sofia demonstrated the practical application of the ICF-CY in addressing the diverse needs of children with developmental delays, physical disabilities, and autism spectrum disorder. Furthermore, this article discusses the benefits of the ICF-CY in fostering interdisciplinary collaboration among educators, therapists, and families. This study elucidates both the advantages and challenges of implementing the ICF-CY, underscoring the need for specialized training and supportive policies to optimize its impact. Recommendations for policy and practice are provided along with suggestions for future research, including longitudinal studies on the long-term effects of ICF-CY-guided interventions on children’s developmental trajectories.

## Keywords

ICF-CY, Early Intervention, Inclusive Education, Individualized Intervention Plans

## 1. Introduction

Early intervention (EI) encompasses a comprehensive range of services and support systems designed to address the developmental needs of young children at risk of or exhibiting developmental delays and disabilities. The primary objective of EI is to enhance children's developmental outcomes through timely and effective interventions. Within the context of inclusive education, EI assumes broader and more holistic significance, as it facilitates children's participation in a mainstream educational environment alongside their peers, irrespective of their disabilities or developmental challenges. Inclusive education advocates equitable access to educational opportunities for all children, regardless of their abilities, in supportive and accommodating environments. Furthermore, inclusive education acknowledges the need for individualized learning pathways to address the specific needs of children with disabilities. By cultivating an inclusive environment, educational institutions can ensure that children with developmental delays and disabilities are not excluded from participating in academic and social activities crucial for their holistic development. The significance of EI in inclusive settings lies in its capacity to support not only children's academic progress but also their social integration and overall well-being.

The International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) provides a comprehensive framework for understanding the interactions among health conditions, body functions, and environmental factors that affect a child's development. As delineated by the World Health Organization (WHO), the ICF-CY adopts a biopsychosocial approach, integrating medical and social models to assess and address the functioning and disability of children. This study explores how the ICF-CY framework can enhance EI practices in inclusive education by enabling professionals to assess a child's strengths and limitations within their real-life environment. Through this approach, individualized intervention plans (IIPs) can be developed, addressing the unique barriers to participation faced by each child. The study also aims to demonstrate how the ICF-CY facilitates interdisciplinary collaboration among educators, therapists, and families, ensuring a coordinated and effective approach to supporting children with disabilities in inclusive settings. By emphasizing the importance of such collaboration, this article highlights the potential of the ICF-CY to promote more inclusive and effective educational practices, ultimately fostering greater participation and success for children with disabilities.

## 2. Theoretical Background

Inclusive education is predicated on the principle that every child, irrespective of their ability or disability, should be afforded equal access to educational opportunities within a supportive and accommodating environment (Björck-Åkesson *et al.*, 2006). This framework is particularly significant during early childhood, a developmental period that establishes the foundation for future social, cognitive, and emotional growth. The objective of inclusive education is not merely to integrate

children with disabilities into mainstream classrooms but to cultivate an environment that values diversity and addresses the unique needs of each child. By fostering such an inclusive environment, educational systems can promote equity, endeavor to eliminate barriers to participation, and ensure that children with disabilities have equivalent access to quality education as their typically developing peers (UNESCO, 2005).

EI focuses on identifying and addressing developmental delays and disabilities as early as possible to maximize children's developmental potential and ensure their participation in inclusive environments. Raghavendra et al. (2007) found that EI could significantly enhance children's capacity to meaningfully engage in educational and social activities, thereby establishing a robust foundation for life-long learning. Inclusive education further acknowledges that interventions must be flexible and individualized to adapt to the diverse needs of each child. The collaborative involvement of professionals, including educators, therapists, psychologists, and family members, is essential for creating a cohesive support system that facilitates children's development and inclusion (Damyanov et al., 2023).

The ICF-CY provides a comprehensive framework for addressing the multifaceted needs of children with disabilities. Education in fields such as Occupational Therapy can greatly benefit from the integration of the International Classification of Functioning, Disability, and Health (ICF) in guiding curriculum and academic content. Souza Lobo Braga et al. (2015) demonstrated that linking the ICF with national curriculum guidelines (NCG) offers a strong foundation for revising academic programs, particularly by aligning them with the biopsychosocial approach advocated by the World Health Organization. Developed by the WHO, the ICF-CY employs a biopsychosocial model that incorporates biological, psychological, and social dimensions to offer a holistic understanding of a child's functioning. This model is particularly effective for EI, as it facilitates the development of individualized support plans that consider not only the child's impairments but also the external barriers they encounter in their environment (Raghavendra et al., 2007; Gunel et al., 2014).

The ICF-CY comprises four primary components: body function, body structure, activities and participation, and environmental factors. Each component plays a crucial role in elucidating a child's overall functioning and identifying specific areas for intervention.

Body functions and structures refer to the physiological and anatomical aspects of a child's body. In EI contexts, these components are essential for identifying impairments that may restrict children's ability to perform certain tasks or engage in educational activities (Björck-Åkesson et al., 2006). For instance, children with cerebral palsy may exhibit limited muscle power, which affects their mobility and participation in physical activities.

Activities and participation encompass a child's ability to engage in daily tasks and social interactions. This component aligns closely with the objectives of inclusive education, which aims to support children in overcoming barriers to

participation in educational settings. By focusing on enhancing participation, the ICF-CY assists educators and therapists in developing interventions that promote social integration and active engagement in school activities (Raghavendra et al., 2007).

Environmental factors are crucial for comprehending the external influences that either facilitate or impede a child's development. These factors include physical, social, and attitudinal barriers within the child's environment, such as the accessibility of educational facilities and the availability of support from teachers and peers (WHO, 2007). For instance, in the case study of Kindergarten 171 "Svoboda", discussed later on in this paper, environmental modifications such as accessible seating arrangements facilitated greater participation for children with physical disabilities.

The ICF-CY enables professionals to construct a detailed representation of how these components interact and affect a child's overall functioning. The framework's emphasis on environmental factors is particularly valuable in inclusive settings as it allows educators to address both personal and contextual barriers to participation. As Damyanov et al. (2023) asserted, this holistic approach enables professionals to focus not only on the child's impairments but also on their strengths and the potential for participation in inclusive environments. This shift in focus is essential for promoting meaningful inclusion and ensuring that all children, regardless of their abilities, have the opportunity to succeed and thrive in the education system.

By applying the ICF-CY, EI professionals can develop individualized, child-centric plans that address the specific barriers faced by each child while simultaneously modifying environmental factors to promote greater inclusion and participation. This approach leads to a more comprehensive understanding of children's needs, and results in more effective and impactful interventions (Lersilp et al., 2018).

### **3. ICF-CY as a Tool for Assessment and Intervention Planning**

The ICF-CY provides a comprehensive framework for assessing children's functioning across physical, cognitive, and social dimensions. In contrast to traditional assessment tools that may focus exclusively on medical diagnoses or observable impairments, the ICF-CY facilitates a more holistic approach by evaluating how a child's health condition interacts with their environment, personal characteristics, and capacity to participate in daily activities.

The physical domain of the ICF-CY encompasses the assessment of body functions and structures, such as motor abilities, sensory capacities (e.g., vision and hearing), and overall physical health. Using the ICF-CY, professionals can code the severity of impairments and assess how they affect children's participation in educational activities (WHO, 2007). By identifying these physical barriers, educators and therapists can develop targeted strategies to address potential classroom

limitations.

In the cognitive domain, the ICF-CY focuses on cognitive functions such as attention, memory, problem-solving, and learning abilities. For example, a child with an intellectual disability may show limitations in areas such as attention span or the ability to retain new information. The ICF-CY allows these limitations to be quantified and contextualized within the child's daily environment. This assessment ensures that interventions address not only the child's cognitive impairments, but also how these impairments impact their ability to learn, participate, and engage socially (Damyanov et al., 2023).

The social domain of the ICF-CY assesses a child's ability to interact with others, communicate, and engage in social relationships. For instance, children with autism spectrum disorder (ASD) may experience challenges in social communication, which can lead to difficulties in forming relationships or participating in group activities at school (Raghavendra et al., 2007). The ICF-CY framework enables professionals to assess the degree of social limitation and design interventions that promote social participation. Rather than merely focusing on improving social skills in isolation, the ICF-CY approach considers how environmental factors such as peer support and school culture can facilitate or hinder social inclusion.

The ICF-CY functions as a crucial instrument for developing IIPs by translating assessment outcomes into precise actionable objectives. In contrast to conventional approaches, which may be confined to addressing specific symptoms or impairments, the ICF-CY synthesizes data from multiple domains to formulate a comprehensive intervention strategy tailored to the child's specific requirements.

An IIP informed by the ICF-CY commences with a thorough assessment of the child's functioning in domains such as body function, activities, and participation. The data are subsequently utilized to identify specific barriers that the child encounters in participating in quotidian activities, whether in educational, domestic, or social contexts (WHO, 2007). The intervention objectives are derived directly from these assessments and customized to address both the child's impairments and environmental factors that may impede their participation.

For instance, if a child with attention-deficit/hyperactivity disorder has difficulties focusing on classroom activities (cognitive domain) and trouble maintaining a seated position (physical domain), the ICF-CY framework enables the IIP to address both areas concurrently. The plan may incorporate behavioral strategies such as providing the child with structured breaks in conjunction with environmental modifications such as seating arrangements that minimize distractions. These intervention strategies are directly linked to the child's assessment results, ensuring that the IIP is both individualized and comprehensive (Damyanov et al., 2023).

Outcomes in an IIP developed using the ICF-CY are not solely focused on mitigating the child's impairments, but also emphasize enhancing participation and quality of life. For example, the objective may not simply be to improve motor

skills but also to enhance the child's ability to engage in play activities with peers, thereby promoting both physical and social development. This outcome-focused approach ensures that the interventions are meaningful and aligned with children's real-life needs.

### **Incorporating Environmental Factors**

One of the most distinctive features of the ICF-CY is its emphasis on environmental factors, which play a crucial role in shaping a child's ability to participate in and succeed in inclusive settings. In contrast to traditional assessment tools that often focus primarily on an individual's impairments, the ICF-CY acknowledges that the environment in which a child operates can either facilitate or hinder their participation.

In addition to the importance of considering environmental factors when assessing children with chronic diseases, the duration of care for such conditions plays a crucial role. As noted by [Vieira et al. \(2022\)](#), chronic diseases in childhood may require additional indicators within the ICF framework to account for the length of care and its impact on the child's life. The influence of chronicity on quality-of-life indicators is shaped by both personal and environmental factors, with some acting as barriers or facilitators depending on the situation.

Environmental factors include physical aspects such as the accessibility of school buildings and social aspects such as the attitudes of peers, teachers, and family members. For instance, a child with mobility impairment may experience difficulties participating in classroom activities if the school environment lacks access to ramps or elevators. The ICF-CY framework highlights the need for physical adjustments to the environment, which can be incorporated into a child's IIP as a specific intervention goal ([Raghavendra et al., 2007](#)). Similarly, if a child with ASD experiences difficulties in social interactions, the ICF-CY framework may emphasize the need to adjust social attitudes or develop peer support programs to create a more inclusive environment.

Family support is another critical environmental factor considered in the ICF-CY. Family members play a pivotal role in shaping a child's development and the support they provide can significantly influence a child's ability to participate in daily activities. For instance, a child's IIP may encompass interventions aimed at providing training and resources to family members and facilitating their understanding of how to support their child at home and in the community ([Björck-Åkesson et al., 2006](#)).

School environment factors, such as classroom size, teaching methodologies, and the availability of assistive technologies, also exert a significant influence on children's inclusion. For children with learning disabilities, the provision of individualized learning aids or differentiated instruction methods can substantially enhance their ability to engage with the curriculum. The ICF-CY enables professionals to assess environmental factors and ensure that necessary accommodations are implemented to promote a more inclusive learning experience ([WHO, 2007](#)).

## 4. Case Studies

This section presents detailed case studies, incorporating tables that summarize the assessments and progress and visually represent the outcomes. The use of real-life examples from kindergartens in Sofia demonstrates the practical application of the ICF-CY in inclusive early childhood education settings.

### 4.1. Case Study 1: Early Intervention for a Child with Developmental Delay

At Kindergarten 171 “Svoboda”, a four-year-old female child, henceforth referred to as M. for confidentiality purposes, was identified as at risk of developmental delay during a screening conducted by a multidisciplinary team from the Regional Centre for Support of the Inclusive Education Process. M.’s delays were most pronounced in the cognitive and communication domains, wherein she exhibited difficulties with expressive language and comprehension of two-step instructions. The ICF-CY was utilised to guide a comprehensive assessment of functioning across multiple domains: physical, cognitive, and social (Arthanat et al., 2004).

#### 4.1.1. Assessment Using ICF-CY

Body Functions (b167 Functions of Language): M. demonstrated delays in speech production, limited vocabulary, and difficulty with sentence structure.

Activities and Participation (d310 Communicating With-Receiving-Spoken Messages): M. experienced challenges in comprehending complex spoken language and responding appropriately to social situations.

Environmental Factors (e310 Immediate Family): M.’s parents were highly supportive, providing a linguistically rich environment at home but possessed limited knowledge of interventions that could support her development.

Based on these assessments, the team developed an IIP for M. The objectives were to enhance her communication abilities through targeted speech therapy twice a week and regular classroom support from a resource teacher. The IIP also incorporated strategies for M.’s family to engage in language games and activities at home, reinforcing the skills she acquired in preschool.

#### 4.1.2. Outcome Tracking

By the end of the observation period in September 2024, M. showed significant progress in her receptive language skills, as evidenced by her improved ability to follow two-step instructions. Her expressive language also improved, with more complex sentence structures appearing during play and group activities (see **Table 1** for detailed assessment and progress data).

### 4.2. Case Study 2: Supporting a Child with Physical Disabilities in Inclusive Preschool

In Kindergarten 78 “Detski Svyat”, The participant, designated as B. for confidentiality reasons, is a five-year-old male student diagnosed with cerebral palsy. The child used a wheelchair and encountered significant challenges with fine motor

**Table 1.** Assessment and progress of a child with developmental delay in kindergarten 171 “Svoboda”.

Domain	Initial Assessment (June 2023)	Progress (September 2024)
<b>Language (Body Functions)</b>	Delayed speech production and vocabulary	Increased vocabulary and improved sentence construction
<b>Social Participation</b>	Difficulty responding in social situations	More active participation in group activities
<b>Environmental Factors</b>	Limited parental knowledge of interventions	Active parental involvement in home-based language activities

skills, which affected his ability to participate in educational activities. The ICF-CY framework was employed to assess his functioning and identify personal and environmental factors that could facilitate his inclusion.

#### 4.2.1. Assessment Using ICF-CY

**Body Functions (b735 Muscle Power Functions):** B. exhibited limited muscle strength, particularly in the lower limbs, which restricted his ability to ambulate or maintain a standing position without assistance.

**Activities and Participation (d440 Fine Hand Use):** B. experienced difficulty in manipulating classroom implements such as pencils and scissors, thus limiting his participation in artistic and writing tasks.

**Environmental Factors (e150 Design, Construction, Building Products, and Technology of Buildings for Public Use):** The kindergarten facility was equipped with ramps and accessible toilets; however, classroom seating arrangements and desk heights were not suitable for B.’s wheelchair, which constrained his ability to interact with his peers during group activities.

The team developed an IIP to address these challenges. Interventions included occupational therapy to enhance fine motor skills and to adapt materials (e.g., larger pencils and specialized grips). Regarding environmental adjustments, the school arranged for adaptive seating to facilitate easier access to his classroom desk. Social strategies were also implemented to promote peer interaction and group participation, including cooperative learning activities, in which B. could contribute using assistive technologies.

#### 4.2.2. Outcome Tracking

By September 2024, B. had shown significant improvements in fine motor control, particularly in his ability to grip larger writing tools and participate more fully in group art activities. Classroom seating adaptations and peer support also enhanced his social integration skills (see **Table 2** for detailed assessment and progress data).

### 4.3. Case Study 3: Holistic Support for a Child with Autism Spectrum Disorder

In Kindergarten 137 “Kalina Malina”, a five-year-old female child, referred to as P. for confidentiality reasons, was diagnosed with autism spectrum disorder (ASD)

**Table 2.** Assessment and progress of a child with physical disabilities in kindergarten 78 “Detski Svyat”.

Domain	Initial Assessment (June 2023)	Progress (September 2024)
<b>Physical Mobility (Body Functions)</b>	Limited muscle strength in lower limbs	Maintained mobility with wheelchair, increased independence in classroom tasks
<b>Fine Motor Skills (Activities and Participation)</b>	Difficulty with pencil grip and writing	Improved control with adapted tools, active in art tasks
<b>Environmental Factors</b>	Inadequate seating for wheelchair use	Adapted seating and desk arrangements, improved accessibility

She exhibited significant delays in social interaction, communication, and repetitive behaviors. The ICF-CY framework was used to assess her overall functioning and develop interventions tailored to her specific needs in an inclusive preschool setting.

#### 4.3.1. Assessment Using ICF-CY

Body Functions (b167 Mental Functions of Language): P. demonstrated limited use of spoken language, relying primarily on nonverbal communication.

Activities and Participation (d710 Basic Interpersonal Interactions): P. experienced difficulty in engaging in group activities or making eye contact with peers.

Environmental Factors (e320 Supportive Relationships in the School Environment): Teachers and aides were supportive; however, they lacked specific training on facilitating communication with children with ASD.

The team developed a comprehensive IIP focused on improving P.’s communication skills and social engagement. This included speech therapy using augmentative and alternative communication tools as well as social stories to assist her in understanding and navigating social situations. The kindergarten staff received additional training on supporting children with ASD, ensuring consistency between the classroom environment and therapeutic interventions.

#### 4.3.2. Outcome Tracking

By September 2024, P. began using picture cards to communicate basic needs and increase her participation in group play activities. The staff reported increased engagement during circle time and P. showed reduced repetitive behaviors (see **Table 3** for detailed assessment and progress data).

**Table 3.** Assessment and progress of a child with autism spectrum disorder in kindergarten 137 “Kalina Malina”.

Domain	Initial Assessment (June 2023)	Progress (September 2024)
<b>Communication (Body Functions)</b>	Non-verbal, reliance on gestures	Use of augmentative and alternative communication tools, picture cards for communication
<b>Social Participation (Activities and Participation)</b>	Difficulty with group activities, eye contact	More active participation in group play, improved peer interactions
<b>Environmental Factors</b>	Limited staff training in ASD interventions	Staff training completed, increased understanding of ASD strategies

## 5. Benefits and Challenges of Using ICF-CY in Inclusive Early Intervention: Implications for Policy and Practice

The ICF-CY presents several distinct advantages for EI, particularly in inclusive educational settings. Its comprehensive, individualized, and child-centric approach renders it an effective tool for comprehending and addressing the diverse needs of children with disabilities.

The ICF-CY's biopsychosocial model integrates multiple domains of a child's functioning, encompassing physical, cognitive, and social aspects. This holistic approach facilitates a nuanced understanding of how various internal and external factors interact to influence children's development and participation in daily activities. For instance, children with cerebral palsy may encounter physical challenges; however, their social and environmental contexts (such as school accommodations) can facilitate or impede their inclusion. The ICF-CY provides a structured methodology for assessing these diverse elements and planning effective interventions (Raghavendra et al., 2007).

One of the most significant advantages of the ICF-CY is its capacity to customize interventions according to each child's specific requirements (WHO, 2002). By addressing not only the child's impairments, but also the particular obstacles to their participation, professionals can develop IIPs. For instance, in a case study involving a child with ASD in Kindergarten 137 "Kalina Malina", the ICF-CY guided the formulation of an intervention plan that addressed the child's communication needs and the environmental modifications necessary for inclusion. This tailored approach ensures that interventions are both pertinent and feasible and promote long-term positive outcomes (Damyanov et al., 2023).

The ICF-CY functions as a shared language for professionals from diverse disciplines such as educators, therapists, psychologists, and family members, facilitating more coordinated and integrated support for children. This interdisciplinary collaboration is crucial in inclusive settings where children's needs frequently span multiple domains. By utilizing the ICF-CY framework, professionals can communicate more effectively, ensuring that all aspects of a child's development are considered in both assessments and interventions (Björck-Åkesson et al., 2006).

### 5.1. Challenges and Limitations

Although the ICF-CY provides significant benefits, its application is challenging, particularly in real-world EIs and inclusive educational settings.

**Complexity of the Framework:** The ICF-CY's detailed and multidimensional nature can make it difficult to apply in practice. Educators and interventionists often find it challenging to integrate extensive categories and codes into daily routines without comprehensive training. For example, coding body functions, activities, participation, and environmental factors requires significant expertise to ensure accurate and meaningful assessments. This complexity can act as a barrier to widespread adoption, particularly in educational settings where time and resources

are limited.

**Need for Training and Capacity Building:** Effective use of the ICF-CY framework demands specialized training, which can be resource-intensive. Without adequate training, there is a risk that the tool will be used incorrectly, leading to incomplete assessments and poorly tailored interventions. As noted in the implementation of the ICF-CY in Bulgarian kindergartens, such as Kindergarten 171 “Svoboda” and Kindergarten 78 “Detski Svyat”, staff needed additional support to fully understand and apply the framework. Without continuous professional development, educators may struggle to implement comprehensive assessments and individualized plans encouraged by the ICF-CY (WHO, 2007).

The detailed nature of ICF-CY assessments can be time consuming, particularly in educational settings where teachers and specialists balance large caseloads. The process of documenting each child’s functioning across various domains and contextual factors may not always align with the fast-paced nature of early childhood classrooms. Furthermore, administrative systems in many schools are not yet equipped to handle the extensive data collection and analysis required by the ICF-CY framework.

## 5.2. Implications for Early Childhood Educators

Utilization of the ICF-CY has significant implications for early childhood educators, providing a framework for more inclusive and effective pedagogical practices. By incorporating the ICF-CY into their pedagogical approaches, educators can enhance their abilities to identify and address students’ diverse needs.

The ICF-CY’s emphasis on participation and environmental factors encourages educators to consider factors beyond children’s impairments and examine how classroom structures, teaching methodologies, and peer interactions can be modified to enhance inclusion. For instance, in Kindergarten 78 “Detski Svyat,” the assessment of environmental factors (e.g., classroom seating arrangements) through the ICF-CY resulted in substantive adjustments that facilitated a child with physical disabilities to participate more fully in group activities. Educators can utilize the ICF-CY to identify and mitigate barriers, thereby creating a more inclusive learning environment for all children (Damyanov et al., 2023).

Using the ICF-CY, educators can develop personalized learning plans that align with each child’s strengths and challenges. This approach ensures that interventions are not one-size-fits-all but are tailored to the individual child. For example, children with communication delays may benefit from differentiated instruction methods such as visual aids or simplified language, which can be integrated into their daily learning activities. This framework helps teachers prioritize interventions that are most relevant to children’s learning and participation.

Educators are often part of a broader team of specialists who work with children in inclusive settings. The common language provided by the ICF-CY facilitates collaboration between speech therapists, psychologists, occupational therapists, and parents. For instance, in Kindergarten 171 “Svoboda”, the multidisciplinary

team used the ICF-CY to create a cohesive intervention plan for a child with developmental delays, ensuring that the goals set by the speech therapist were reinforced by classroom activities and supported at home.

### **5.3. Policy Recommendations**

Policymakers play a critical role in supporting ICF-CY adoption through EIs and inclusive education programs. Several policy measures should be considered to maximize the potential of the framework.

One of the primary barriers to the effective utilization of the ICF-CY is the need for specialized training. Policymakers should invest in comprehensive training programs for educators and interventionists to ensure that they possess the requisite skills and knowledge to apply the framework effectively. This could include regular workshops, online courses, and mentorship programs that provide practical experience in utilizing the ICF-CY for assessment and intervention planning.

Given the complexity of the ICF-CY, schools and early childhood centers require adequate resources, both in terms of time and personnel, to implement the framework effectively. Policymakers should ensure that educational institutions are equipped with the necessary tools and technologies to support ICF-CY assessments. This includes digital platforms for tracking and analyzing data as well as sufficient staffing to manage the additional workload associated with comprehensive assessments.

Policymakers should develop a supportive policy framework that promotes the integration of the ICF-CY into EI programs at the national and local levels. This could involve revising the existing guidelines to include the ICF-CY as a standard tool for assessing and planning interventions for children with disabilities. Additionally, policies should encourage collaboration among educational, health, and social services, thereby facilitating a more holistic approach to support children's development and inclusion.

To ensure the efficacy of ICF-CY implementation, its impact on educational settings should be monitored and evaluated. Policymakers can establish evaluation mechanisms to assess the effectiveness of the framework's utilization and its outcomes for children. These evaluations can help identify best practices, address challenges, and refine policies to improve the inclusion of children with disabilities in early childhood education.

## **6. Conclusion**

This study examined the pivotal role of the ICF-CY in enhancing inclusive EI practices. By providing a comprehensive, holistic framework that integrates the physical, cognitive, and social dimensions, the ICF-CY offers a child-centered approach that transcends traditional medical models. This enables educators, therapists, and families to develop IIPs tailored to each child's unique strengths and challenges. This framework not only facilitates enhanced collaboration among multidisciplinary teams, but also promotes a more inclusive learning environment,

wherein children with disabilities can flourish alongside their peers.

The ICF-CY framework's emphasis on environmental factors is particularly significant in the context of inclusive education as it acknowledges the importance of both personal and contextual variables in determining a child's level of participation and achievement. Case studies from kindergartens in Sofia, such as Kindergarten 171 "Svoboda", Kindergarten 78 "Detski Svyat", and Kindergarten 137 "Kalina Malina", illustrate how the ICF-CY model enables teams to address physical, cognitive, and social barriers through individualized and holistic strategies. These case studies elucidate the practical application of the ICF-CY in real-world settings, where both personal and environmental adjustments result in substantial improvements in children's developmental outcomes.

Despite these advantages, challenges such as the complexity of the framework, the necessity for specialized training, and administrative constraints remain substantial. Policymakers and educational leaders must prioritize capacity-building initiatives, resource allocation, and the development of supportive policies to ensure effective implementation of the ICF-CY in early childhood settings.

Although the ICF-CY has already demonstrated its potential to transform EI practices, further research is necessary to evaluate its long-term effects. Longitudinal studies should investigate how ICF-CY-guided interventions influence children's academic, social, and developmental trajectories. Such studies could provide insights into the sustainability of these interventions and their effects on inclusive educational practices. Additionally, this research could examine the scalability of the ICF-CY framework across diverse educational contexts, including cultural and socioeconomic settings.

By continuing to investigate the application of the ICF-CY, future research can refine and enhance the framework, ensuring that it remains an effective tool for creating inclusive, supportive environments in which all children, regardless of their abilities, can achieve their full potential.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

## References

- Arthanat, S., Nochajski, S. M., & Stone, J. (2004). The International Classification of Functioning, Disability and Health and Its Application to Cognitive Disorders. *Disability and Rehabilitation*, 26, 235-245. <https://doi.org/10.1080/09638280310001644889>
- Björck-Åkesson, E., Granlund, M., & Ibragimova, N. (2006). Svensk fiiltprovning av WHO Internationell klassifikation av funktionind och funktionshinder. Version for barn och ungdom (ICF-CY). Institutionen for Samhalls-och Beteendevetenskap, Malardalens Hogskola. *Developmental Neurorehabilitation*, 12, 3-11. <https://doi.org/10.1080/17518420902777001>
- Damyanov, K., Zamfirov, M., Bakracheva, M., Krastev, A., Angelova, T., & Kiseova, L. (2023). *Guidelines for Applying the Functional Assessment Map for Children with Special Educational Needs and Chronic Diseases in Relation to the International Classification*

*of Functioning Disability and Health for Children and Youth (ICF-CY)*. Regional Centre for Support of Inclusive Education.

- Gunel, M. K., Kara, O. K., Ozal, C., & Turker, D. (2014). Virtual Reality in Rehabilitation of Children with Cerebral Palsy. In E. Svraga (Ed.), *Cerebral Palsy-Challenges for the Future* (pp. 273-301). IntechOpen. <https://doi.org/10.5772/57486>
- Lersilp, S., Putthinoi, S., & Lersilp, T. (2018). Facilitators and Barriers of Assistive Technology and Learning Environment for Children with Special Needs. *Occupational Therapy International*, 2018, Article 3705946. <https://doi.org/10.1155/2018/3705946>
- Raghavendra, P., Bornman, J., Granlund, M., & Björck-Åkesson, E. (2007). The World Health Organization's International Classification of Functioning, Disability and Health: Implications for Clinical and Research Practice in the Field of Augmentative and Alternative Communication. *Augmentative and Alternative Communication*, 23, 349-361. <https://doi.org/10.1080/07434610701650928>
- Souza Lobo Braga, A., Silva Paz, L., & Silva Marães, V. (2015). Graduate Courses in Occupational Therapy and International Classification of Functioning, Disability and Health. *Creative Education*, 6, 1914-1919. <https://doi.org/10.4236/ce.2015.617197>
- UNESCO (2005). *Guidelines for Inclusion: Ensuring Access to Education for All*.
- Vieira, D., Ribeiro, C., Ribeiro, R., & Cabral, L. (2022). Chronic Diseases of Childhood and the International Classification of Functioning, Disability, and Health: A Systematic Review. *Health*, 14, 751-765. <https://doi.org/10.4236/health.2022.147054>
- WHO (2002). *Towards a Common Language for Functioning Disability and Health: ICF*. World Health Organization.
- WHO (2007). *International Classification of Functioning Disability and Health: Children and Youth Version (ICF-CY)*. World Health Organization.