

# The student with complex disabilities at school: educational and didactic intake from an inclusive perspective.

Ilaria D'Angelo <sup>1\*</sup>, Noemi Del Bianco <sup>1</sup>, Simone Aparecida Capellini <sup>2</sup> and Catia Giaconi <sup>1</sup>

1 University of Macerata, Italy; i.dangelo@unimc.it; n.delbianco@unimc.it; catia.giaconi@unimc.it

2 Universidade Estadual Paulista Júlio de Mesquita Filho; sacap@uol.com.br

\* Correspondence: i.dangelo@unimc.it

**Abstract:** Starting from the analysis of recent Istat data from 2024, we explore the emerging challenges associated with the inclusion of students with complex disabilities in the school system. First and foremost, it is necessary to create an accessible physical, educational, and social environment for students with complex disabilities. In this sense, crucial is the role of multidisciplinary collaboration and the school community in fostering an inclusive environment. This aspect requires close cooperation between the school, family, and professionals to ensure effective and individualized paths. Finally, we delve into the vital role of teachers in promoting an inclusive classroom environment and managing students' social interactions. In addition, to address the obstacles to school inclusion for students with complex disabilities, training for teaching staff is vital. This paper underscores the need for further research and interventions to tackle these challenges and enhance the educational experience of students with complex disabilities in mainstream education.



**Copyright:** © 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

**Keywords:** school; complex disability; inclusion; accessibility.

## 1. Introduction

The present contribution focuses on the pedagogical challenges of inclusive education in Italian schools, specifically on the educational and didactic intake of students with complex disabilities. The latest report on School Inclusion by Istat (2024) highlights that approximately 4.1% of the total enrolment in Italian schools consists of students with disabilities, which amounts to nearly 338,000 students. The report further notes that 39% of these students have multiple disabilities, with intellectual disabilities being the most prevalent among them.

Several studies (Ianes, Cramerotti, 2013; Mura, 2018; Dell'Anna et al., 2022) have highlighted the increasing complexity and emerging challenges faced by students with complex disabilities in school settings, making it difficult to achieve full school inclusion. These challenges arise primarily due to difficulties in managing daily organisation, such as travel, personal assistance, and communication barriers.

The faculty faces significant challenges in delineating Individualized Educational Plans (IEPs) that are permeated by trajectories of meaning and significance to achieve an educational and didactic intake, which can contribute to the full participation of students with complex disabilities within the school context. The heterogeneous nature of students with complex disabilities raises significant concerns among teachers who require extensive support, highly individualised measures, and qualified personnel in both educational and didactic intake.

This contribution aims to reconstruct the characteristics of different contexts within the school system that can be designed to ensure greater levels of participation. In this sense, the reflection moves about the need to start from the reading and design of contexts to achieve a meaningful and quality school inclusion experience for students with complex disabilities.

The discussion focuses on exploring the synergy that could be established between the school and the local area and the role that the school community can play in contributing to the process of inclusion of students with complex disabilities.

## 2. Students with complex disabilities and the school

The possibility of students with complex disabilities to fully participate in various opportunities provided by living environments is mainly dependent on the presence of staff who are capable of mediating accessibility (Beadle-Brown et al., 2012; D'Angelo, 2020). The significance of living environments in relation to the provision of opportunities for complete social and educational participation is noteworthy. The International Classification of Functioning, Disability and Health (ICF) construct (WHO, 2001; 2007) may serve as the theoretical framework for analysing the school ecosystem. The ICF framework offers a conceptual model for the inclusive design of different life contexts by improving an individual's participation while identifying and eliminating social and environmental obstacles and defining and promoting supports and facilitators (WHO, 2001).

Furthermore, the ICF framework can help us overcome one of the critical challenges associated with attitudes toward students with complex disabilities, including perceptions related to severity and immutability (Giancaterina, 2017; D'Angelo, 2020). The ICF paradigm aims to describe life situations by eliminating distinctions related to causes or aetiology. It describes human functioning according to the multiple dynamics existing between biological, individual, and environmental factors.

The perspective adopted by the ICF allows for the observation to be decoupled from pathology, deficit, lack, inability, etc., and centred in reference to what the person can do and how he or she is doing it, that is, by describing his or her functioning. In this perspective, «the configuration of the learning and participation context becomes the centre of gravity of inclusion action» (von Prondzinski, 2019, p. 164). Due to the specific functioning profiles of individuals with complex disabilities, the design of facilitators alone is insufficient to ensure access to the opportunities being offered. The particular expertise of caregivers or staff in mediation is also required. Indeed, the possibility for people with complex disabilities to take advantage of the opportunities that living environments offer depends, to a large ex-

tent, on the presence of qualified support staff who can mediate accessibility (Beadle-Brown et al., 2012).

According to recent national and international studies on school inclusion of students with complex disabilities (Alquraini, Gut, 2021; Dell'Anna, 2021; Dada et al., 2023), school inclusion can be viewed as a process that continuously seeks new approaches and strategies to respond to individual differences, remove barriers, and design facilitators, while also being a «tripartite goal - presence, learning, and participation - where presence in the school context constitutes only the first requirement to ensure adequate levels of learning and enable participation in educational activities and involvement in meaningful social relationships» (Dell'Anna, 2021, p. 211).

To fully comprehend the dynamics of such a direct inclusive process, we will analyse the results of recent national and international studies on school inclusion of students with complex disabilities, offering a cross-sectional analysis of them at different levels of the school ecosystem. Our attention will first focus on the organisational and administrative aspects of the school and the territory, followed by an examination of the role of different actors in the school community.

### 3. Designing inclusive contexts: the role of the school community

Starting from a reconstruction that moves from the meso to the micro-school system (Brofenbrenner, 1989), several perspectives of analysis can be read from a pedagogical perspective (Foreman et al., 2007; Horrocks and Morgan, 2011; Jones, Riley, 2017; Martin, Alborz, 2014; Maes et al., 2020; Dell'Anna, 2021).

Among these, an initial trajectory of analysis concerns multidisciplinary collaboration among the various professionals involved in the educational and instructional care of the person with complex disabilities.

Such students often require a high level of assistance and support; in this sense, dedicated professionals such as, for example, the autonomy and/or communication assistant<sup>1</sup> are involved. From a pedagogical point of view, the joint work between the various professional figures is characterised by synergistic intentions, the result of educational co-responsibility effectively shared by both school personnel and specialists (Foreman et al., 2007; Horrocks, Morgan, 2011; Jones, Riley, 2017; Martin, Alborz, 2014).

In line with such thinking, we mention the necessary collaboration that must take place between school and family (Dell'Anna, 2021; Quirk, Ryndak, Taub, 2017; Alquraini, Gut, 2012).

Particularly, as reconstructed in previous studies (D'Angelo, 2020; Caldin, Giacconi, 2021), parents of people with complex disabilities must be able to see their expertise and experience recognised in reference to knowing and reading their children's needs. They must be able to play an active role in the educational planning process (e.g., working on common goals, sharing perspectives, etc.). Therefore, an intake that effectively promotes cooperation between families and schools is based

---

<sup>1</sup> The figure of the assistant for autonomy and communication arises from the legal reference of Article 13 of Law 104/92 ("obligation for local authorities to provide assistance for the autonomy and personal communication of pupils with physical or sensory disabilities") in the wake of Article 42 of Presidential Decree 616/77 "on assistance to the mentally and physically handicapped".

on the enhancement of their respective competencies, passing through the recognition of family members as expert figures, decisive in the construction of individualised educational paths of meaning and quality (Giancaterina, 2017; D'Angelo, 2020).

Entering into the merits of reading the micro-school system, being aware that even for the student with complex disabilities, “inhabiting the school context” means arriving at a sense of belonging that allows him to appropriate the collective dimension of which he is an integral part.

Inhabiting the school context means, therefore, reflecting on the elements of physical, educational and social/relational accessibility.

Beginning with the analysis of physical accessibility aspects, the school infrastructure and classroom must also meet the criteria of safety and usability for students with complex disabilities (Maes et al., 2020; Colley, 2013; De Bortoli et al., 2012). Characteristics of the physical environment, such as light and sound (e.g., intensity, refraction, origin of the light source, quality of sound, frequencies, reverberation, and noise), must be attended to ensure maximum participation in the school setting. Recall, in fact, that students with complex disabilities may have sensory impairments and/or hyper- or hyposensitivity to environmental stimuli, so ensuring an environment (e.g., classroom corner) with appropriate sensory characteristics can be an important prerequisite to opportunities for learning and interpersonal relationships (Arthur-Kelly et al., 2007; van der Putten et al., 2011).

In line with what was highlighted earlier, it seems appropriate to focus on the learning context as well.

The functioning profile of students with complex disabilities often requires adaptation of curricular objectives according to differentiated planning. Based on curricular objectives, teachers are called upon to plan content, teaching strategies and individual supports consistent with the strengths and needs of such students. In this direction, assistive technologies (Alquraini, Gut, 2012) and augmentative and alternative communication strategies (Dell'Anna, 2021) often play a key role. Internationally, several curricula have been developed for students with complex disabilities (the VijfWijzer program in the Netherlands, Routes for Learning in Wales, and The Elaborate Curriculum 5-14 in Scotland)<sup>2</sup> which aim to provide individualised learning models for designing instructional interventions.

However, there are still few studies investigating the effectiveness of specific teaching strategies (peer tutoring, community-based educational activity, self-management and positive behavioural interventions, multicomponent-packaged in-

---

<sup>2</sup> «These different curricula reflect different rationales concerning the focus of learning (Alwell and Cobb 2009; Colley 2013; Kontu and Pittimaa 2010). In the developmental approach, the sequence of typical development is the framework from which learning goals and activities are derived. In connection with the sensorimotor developmental stage of children with profound intellectual and multiple disabilities, often activities in which children can have specific and targeted sensory and motor experiences are offered. [...] More recent curricula start from a subject-based approach, taking an inclusive perspective to decide which common subjects are taught to all children of a certain age. This includes, for example, numeracy (e.g. experiencing difference in weight), physics (e.g. learning about things floating in water) and music (e.g. learning about different music genres). Subject-based curricula struggle with the reconciliation of subject-led working and the specific developmental and learning needs of students with profound intellectual and multiple disabilities (Tadema 2007). They do however offer pathways to participation in regular classrooms, where the general curriculum is largely focused on differentiated instruction in key learning areas (Alwell, Cobb, 2009)» (Maes et al., 2020, p. 44).

terventions) (Alquraini, Gut, 2012; Dada et al, 2023) and little information is available about the nature and type of goals that are drafted within Individualised Educational Programs, and numerous critical issues emerge concerning their evaluation (Dell'Anna, 2021; Taub, McCord, Ryndak; 2017).

Moving on the level of the social/relational dimension, as previous reconstructions (D'Angelo, 2020) have already shown, close relationships with teachers and classmates, built over time, contribute to a sense of security and well-being for students with complex disabilities (Maes et al., 2020). Furthermore, research findings (Alquraini, Gut, 2012; Dada et al., 2023) show that the educational success of students with complex disabilities is closely related to the dynamics of interaction with peers, dynamics that can facilitate the achievement of the goals of their Individualised Education Plans. In this direction, it is important to carefully consider the composition of the class group, avoiding it being excessively large and promoting an inclusive and welcoming classroom climate (Alquraini, Gut, 2012; Ferreira et al., 2017). In this direction, it is important to carefully consider the composition of the class group, avoiding it being excessively large and promoting an inclusive and welcoming classroom climate (Alquraini, Gut, 2012; Ferreira et al., 2017). It should be noted that for students with complex disabilities, interaction with peers is not always a given due to communication difficulties. This difficulty is accentuated by the fact that the latter is mainly pre- or proto-symbolic, based on movements, sounds, body postures, facial expressions or muscle tensions (Alquraini, Gut, 2012). Therefore, there is a need for pedagogical strategies and practices aimed at fostering communication, interaction, and active involvement of all students, as well as creating an educational environment that reflects diversity and promotes everyone's participation.

#### 4. Conclusions

As this paper has shown, the actions conducted regarding the design of contexts that can ensure the maximum degree of participation of students with complex disabilities are transversal and systemic.

In this direction, it is essential to work synergistically, integrating the family's expertise with that of the various professionals and teachers' skills (De Bortoli et al., 2012; Petitpierre et al., 2007; Strogilos et al., 2011; Tétreault et al., 2014).

Although research about the school inclusion of students with complex disabilities is still limited, it seems appropriate to reflect on the skills that the curricular teacher and the teacher specialised in support activities must acquire to ensure this right.

In this direction, in the literature, some studies (Alquraini, Gut, 2012; Wehmyer, Shogren, 2016; Quirk, Ryndak, Taub, 2017; Dell'Anna et al., 2022) put the role of teachers in promoting students' motivation and involvement during the learning process (Maes et al., 2020): the interaction modes adopted by teachers are, in fact, crucial in enhancing the active involvement of students with complex disabilities (Beadle-Brown et al., 2016; D'Angelo, 2020)

Among educational best practices, the literature recalls how essential it is to promote the implementation of meaningful activities through active support modalities.

ties<sup>3</sup> (Stancliffe et al., 2008; Beadle-Brown et al., 2016; van der Putten et al., 2017; Van Keer et al., 2019).

In addition, building and maintaining an inclusive climate within the classroom are priority goals and core competencies for every teacher in the school setting. Teachers play a crucial role in monitoring and promoting students' social participation in order to prevent harmful effects from negative social experiences in school (Koster et al., 2009). In this regard, research (Ianes, Cramerotti, 2009) highlights the role of teachers not only as mediators in achieving full physical and educational accessibility but also in the social and relational context of the classroom. In this scenario, Hostyn and Maes (2009) identify several essential components for promoting constructive interpersonal relationships, including openness to the other, mutual respect, the ability to attune one's communicative behaviour to that of the other, and awareness of the characteristics of the communicative context.

Precisely because of students' complex care needs, teachers need knowledge and skills to identify and maximise teachable moments in daily care routines (Maes et al., 2020; Petitpierre et al., 2007), it is good, in fact, to remember how teachable moments can be meaningful learning opportunities (Imray, Bond, 2015; Petitpierre et al., 2007). For these reasons, teachers need ongoing training to increase their knowledge and skills. Specifically, for an ecological intake of students with complex disabilities, training should address the idiosyncratic aspects of communication. Training in reading and coding the expressive modes of people with complex disabilities would, in fact, allow the feelings of frustration and burnout often caused by the difficulty of understanding and corresponding to the person's needs to disappear (D'Angelo, 2020; Caldin, Giaconi, 2021).

Several issues are, therefore, still open in reference to the school inclusion of students with complex disabilities (Dell'Anna et al., 2022). Indeed, it is not only a matter of ensuring access to a shared space, that of the classroom, but of activating supports and strategies capable of making the student with disabilities fully active and participating in the school context (WHO, 2001; 2007).

In this direction, future research appears necessary to enter into the merits of both a focus on using intervention studies to facilitate the inclusion of children with complex disabilities and the training of teaching staff.

## References

- Ainscow, M. (2020). Inclusion and equity in education: Making sense of global challenges. *Prospects*, 49(3), 123–134.
- Alquraini, T., & Gut, D. (2012). Critical components of successful inclusion of students with severe disabilities: Literature review. *International journal of special education*, 27(1), 42–59.

---

<sup>3</sup> Active support is defined as: «an enabling relationship between staff or other carers and the people they support that provides just the right amount of assistance to enable a person to successfully participate in meaningful activities and social relationships, at home and in the community» (Mansell e Beadle-Brown, 2012, p. 86). The term is used in contrast to overly welfarist forms of support, in which the role of the person with PIMD is almost exclusively passive.

- Arthur-Kelly, M., Foreman, P., Bennett, D., & Pascoe, S. (2008). Interaction, inclusion and students with profound and multiple disabilities: Towards an agenda for research and practice. *Journal of Research in Special Educational Needs*, 8(3), 161–166.
- Beadle-Brown J., Hutchinson A. & Whelton B. (2012). Person-centred active support—increasing choice, promoting independence and reducing challenging behaviour. *Journal of Applied Research in Intellectual Disabilities*, 21, 210–218.
- Beadle-Brown, J., Leigh, J., Whelton, B., Richardson, L., Beecham, J., Baumker, T., & Bradshaw, J. (2016). Quality of life and quality of support for people with severe intellectual disability and complex needs. *Journal of Applied Research in Intellectual Disabilities*, 29(5), 409–421.
- Brinker, R. P., & Thorpe, M. E. (1984). Integration of severely handicapped students and the proportion of IEP objectives achieved. *Exceptional Children*, 51(2), 168–175.
- Bronfenbrenner, U. 1989. Ecological systems theory. In *Annals of Child Development*, edited by R. Vasta, 187–249. Greenwich, Connecticut: JAI Press. Vol. 6. Six theories of child development: Revised reformulations and current issue.
- Caldin, R., & Giaconi, C. (Eds.) (2021). *Disabilità e cicli di vita. Le famiglie tra seduttivi immaginari e plausibili realtà* (pp. 1-217). FrancoAngeli.
- Colley, A. (2013). *Personalised learning for young people with profound and multiple learning difficulties*. Jessica Kingsley Publishers.
- Cottini, L. (2021). *Didattica speciale per l'educatore socio pedagogico*. Roma: Carocci.
- D'Angelo, I. (2020). *Pedagogia speciale per i servizi alle persone con disabilità complesse*. Milano: FrancoAngeli.
- Dada, S., Wilder, J., May, A., Klang, N. & Pillay M. (2023). A review of interventions for children and youth with severe disabilities in inclusive education, *Cogent Education*, 10:2, 2278359, DOI: 10.1080/2331186X.2023.2278359
- De Bortoli, T., Balandin, S., Foreman, P., Mathisen, B., & Arthur-Kelly, M. (2012). Mainstream teachers' experiences of communicating with students with multiple and severe disabilities. *Education and Training in Autism and Developmental Disabilities*, 236–252.
- Dell'Anna, S. (2021). *Modelli di valutazione di un sistema scolastico inclusivo: Prospettive di dialogo tra implementazione, ricerca e (auto-)miglioramento*. Milano: FrancoAngeli.
- Dell'Anna, S. (2021). Alunni con disabilità gravi e multiple in contesto inclusivo. Una panoramica sulla letteratura internazionale. *L'integrazione scolastica e sociale*, 20(1), 211–221.

- Dell'Anna, S., Pellegrini, M., Ianes, D., & Vivanet, G. (2022). Learning, social, and psychological outcomes of students with moderate, severe, and complex disabilities in inclusive education: A systematic review. *International Journal of Disability, Development and Education*, 69(6), 2025–2041.
- European Agency for Special Needs and Inclusive Education. (2018). Evidence of the link between inclusive education and social inclusion: A review of the literature (S. Symeonidou, Ed.). <https://www.european-agency.org/resources/publications/evidence-literature-review>.
- Ferreira, M., Aguiar, C., Correia, N., Fialho, M., & Pimentel, J. S. (2017). Social experiences of children with disabilities in inclusive Portuguese preschool settings. *Journal of Early Intervention*, 39(1), 33–50.
- Foreman, P., Arthur-Kelly, M., & Pascoe, S. (2007). The impact of partner training on the communicative involvement of students with multiple and severe disability in special schools. *Journal of Intellectual and Developmental Disability*, 32(4), 233–247.
- Giancaterina, F. (2017). Accompagnamento e progetto di vita. In: R. Caldin, A. Cinotti, F. Serra (a cura di), *Disabilità famiglia e servizi. Impegni di alleanza, esperienze di valutazione*. Foggia: Edizioni del Rosone.
- Horrocks, E. L., & Morgan, R. L. (2011). Effects of inservice teacher training on correct implementation of assessment and instructional procedures for teachers of students with profound multiple disabilities. *Teacher Education and Special Education*, 34(4), 283–319.
- Ianes, D., & Cramerotti, S. (2009). *Il piano educativo individualizzato. Progetto di vita* (Vol. 1). Edizioni Erickson.
- Ianes, D., & Cramerotti, S. (Eds.). (2013). *Alunni con BES-Bisogni Educativi Speciali: Indicazioni operative per promuovere l'inclusione scolastica sulla base della DM 27.12. 2012 e della Circolare Ministeriale n. 8 del 6 marzo 2013*. Edizioni Erickson.
- Ianes, D. & Demo, H. (2021). Per un nuovo PEI inclusivo. *L'integrazione Scolastica e Sociale*, 20(2), 34–49.
- Ianes, D., & Dell'Anna, S. (2020). Valutare la qualità dell'inclusione scolastica: Un framework ecologico. *L'integrazione scolastica e sociale*, 19(1), 109–128.
- Imray, P., & Bond, L. (2015). Care as an educational concept. In *The Routledge Companion to Severe, Profound and Multiple Learning Difficulties* (pp. 163-171). Routledge.
- Istat. (2024). *L'inclusione scolastica degli alunni con disabilità. Report*. Roma: Istituto nazionale di statistica.
- Jones, P., & Riley, M. W. (2017). "Trying, failing, succeeding, and trying again and again": perspectives of teachers of pupils with severe profound multiple learning difficulties. *European journal of teacher education*, 40(2), 271–285.
- Koster, M., Pijl, S. P., Nakken, H., & van Houten, E. (2009). Social participation of students with special needs in regular primary education in the Netherlands. *International Journal of Disability*, 57(1), 59–75.

- Lancioni, G. E., Sigafoos, J., O'Reilly, M. F., & Singh, N. N. (2012). *Assistive technology: Interventions for individuals with severe/profound and multiple disabilities*. Springer Science & Business Media.
- Maes, B., Penne, A., Vastmans, K., & Arthur-Kelly, M. (2020). Inclusion and participation of students with profound intellectual and multiple disabilities. In *Belonging for People with Profound Intellectual and Multiple Disabilities* (pp. 41-58). Routledge.
- Martin, T., & Alborz, A. (2014). Supporting the education of pupils with profound intellectual and multiple disabilities: The views of teaching assistants regarding their own learning and development needs. *British Journal of Special Education*, 41(3), 309–327.
- Mechling, L. C. (2006). Comparison of the effects of three approaches on the frequency of stimulus activations, via a single switch, by students with profound intellectual disabilities. *The Journal of Special Education*, 40(2), 94-102.
- Mura, A. (2018). Orientamento formativo, disabilità e prospettive di emancipazione. *Diversità e inclusione: percorsi e strumenti*, 13–28.
- Nijs, S., & Maes, B. (2014). Social peer interactions in persons with profound intellectual and multiple disabilities: A literature review. *Education and Training in Autism and Developmental Disabilities*, 153-165.
- Petitpierre, G., Wolf, D., Dietrich, A., Benz, M., & Adler, J. (2007). Integration of education and care given to children with profound multiple disabilities in Switzerland. *Journal of Policy and Practice in Intellectual Disabilities*, 4(2), 141–151.
- Quirk, C., Ryndak, D. L., & Taub, D. (2017). Research and evidence-based practices to promote membership and learning in general education for students with extensive support needs. *Inclusion*, 5(2), 94–109.
- Taub D.A., McCord J.A. e Ryndak D.L. (2017). Opportunities to learn for students with extensive support needs: a context of research-supported practices for all in general Education classes, «The Journal of Special Education», vol. 51, n. 3, pp. 127–137. <https://doi.org/10.1177/0022466917696263>
- van der Putten, A., & Vlaskamp, C. (2011). Pain assessment in people with profound intellectual and multiple disabilities; a pilot study into the use of the Pain Behaviour Checklist in everyday practice. *Research in developmental disabilities*, 32(5), 1677–1684.
- UN Convention on the Rights of Persons with Disabilities (UNCRPD). (2008). <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/conventin-on-the-rights-of-persons-with-disabilities-2.html>
- Wehmeyer, M. L., & Shogren, K. A. (2016). Self-determination and choice. *Handbook of evidence-based practices in intellectual and developmental disabilities*, 561–584.
- World Health Organization (WHO). (2001). *International Classification of Functioning, Disabilities and Health*. Geneva, Switzerland.

---

World Health Organization (WHO). (2007). *International Classification of Functioning, Disability, and Health: Children & Youth Version: ICF-CY*. World Health Organization.