INCLUSIVE TEACHING APPROACH: AUTISM AND SIGN LANGUAGE

APPROCCIO DIDATTICO INCLUSIVO: AUTISMO E LINGUA DEI SEGNI

Domenico Tafuri

Università degli Studi di Napoli "Parthenope"

domenico.tafuri@uniparthenope.it



Anna Chiara Stellato

annachiara.stellato@uniparthenope.it

Università degli Studi di Napoli "Parthenope"



Emma Saraiello

Università degli Studi di Napoli "Parthenope" emma.saraiello@uniparthenope.it





Double Blind Peer Review

Citazione

Tafuri, D., Stellato, A.C., & Saraiello, E. (2023) Inclusive teaching approach: autism and sign language, Giornale Italiano di Educazione alla Salute, Sport e Didattica Inclusiva - Italian Journal of Health Education, Sports and Inclusive Didactics. Anno 7, V 2. Edizioni Universitarie Romane

Doi:

https://doi.org/10.32043/gsd.v7i2.911

Copyright notice:

© 2023 this is an open access, peer-reviewed article published by Open Journal System and distributed under the terms of the Creative Commons Attribution 4.0 International, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

gsdjournal.it

ISSN: 2532-3296

ISBN: 978-88-6022-470-5

ABSTRACT

A central problem of children with Autism Spectrum Disorders (ASD) is the inability to develop communication skills. Language development is a frequent goal of many educational programmes for autistic children. In this context, an alternative strategy that can facilitate the communicative and relational dimension is represented by the use of Sign Language (SL). The The use of LS stands as an example of good practice, highlighting how one can recover that social and playful dimension that is lost when disability, in this case Autism, is considered only as a pathology to be treated. Therefore, this paper identifies the use of Italian Sign Language (ISL) as an effective teaching approach for inclusion.

Un problema centrale dei bambini con disturbi dello Spettro Autistico è l'incapacità di sviluppare capacità comunicative. Lo sviluppo del linguaggio è un obiettivo frequente di molti Programmi Educativi per bambini autistici. In questo contesto, una strategia alternativa che possa facilitare la dimensione comunicativa e relazionale è rappresentata dall'utilizzo della Lingua Italiana dei Segni (LIS). L'uso della LIS si pone come esempio di buona pratica, evidenziando come si possa recuperare quella dimensione sociale e ludica che si perde quando la Disabilità, in questo caso l'Autismo, è considerata solo come una patologia da trattare. Pertanto, questo lavoro identifica l'uso della Lingua Italiana dei Segni (LIS) come un approccio Didattico efficace per l'Inclusione.

KEYWORDS

Autism Spectrum Syndrome, Sign Language, Inclusion.

Sindrome dello Spettro Autistico, Lingua Italiana dei Segni, Inclusione.

Received 20/05/2023 Accepted 20/05/2023 Published 20/05/2023

Introduction

Autism Spectrum Disorders (ASD) are a heterogeneous set, in terms of complexity and severity, of neurodevelopmental deficits characterised by persistent impairment in communication and social interaction (Teague et al., 2020). This syndrome is increasingly diagnosed among children, who often have communication difficulties caused by damage to the phonatory-auditory apparatus that prevents them from expressing thoughts, needs and desires (Myers et al., 2007). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5, 2023) itself states that already from early childhood, children with ASD present a deficit in communication, which is often accompanied by a delay in vocal language development. The autistic child tends to be prone to isolation, showing little attention and detachment from the surrounding environment, a factor that further influences language, which requires social interaction in order to develop (Piaget, 1967). Thus, autistic children experience a sense of detachment from reality, experiencing frustration caused by the inability to express their needs and requirements.

With regard to the relationship between children with ASD and communication with the outside world, an important distinction must be made. There are, in fact, two major categories of autism: verbal and non-verbal. In the first case, despite the various difficulties, the child is still able to express and manifest his emotions, feelings, desires and needs. The second type, on the other hand, includes all conditions in which the child cannot express him with speech at all, but uses other means, such as gestures, eye movement or, in general, his behaviour (Bellando, Fussell, & Lopez, 2016). There are also extreme cases in which autistic children are unable to express themselves even through non-verbal communication. In both cases, the child uses different forms of communication to ask for help. These pathological conditions are extremely serious and difficult to deal with because they are a demonstration of the child's total apathy towards the surrounding reality and the people around him (Howell, Bailey, Bradshaw, & Langdon, 2021).

The distinction between verbal and non-verbal autism should not, however, be regarded as fixed and static, because there are many cases in which a child who has always communicated through the use of speech suddenly closes in on himself for a longer or shorter period. On the contrary, it can also happen that children who had never made their voices heard sporadically decide to make sounds, perhaps simple letters or syllables. A child with verbal autism may be able to produce a correct, clear and functional form of communication, but in most cases, it is equally problematic (Lei, Jones, & Brosnan, 2021). The main defects that can be found are the even obsessive repetition of certain words or phrases, the incorrect adjustment of the volume of one's voice, phonetic and grammatical errors, and the inversion of pronouns, the latter disorder probably associated with the child's inability to

distinguish the role and figure of different people, including himself. There are also many children who speak excessively fast and incomprehensibly or, on the contrary, extremely slowly and monotonously, and cases of dyspraxia are common. To solve language-related problems, it is necessary to intervene in a gradual, but above all customised manner according to the specific difficulties and needs of each individual child and taking into consideration his or her actual abilities, skills and competences (Bury, Jellett, Spoor, & Hedley, 2023).

In line with the Charter of Autistic People's Rights (1996) concerning their right to a full and independent life within their possibilities and access to inclusive and appropriate education, several treatment methodologies have been validated that consist of structured cognitive-behavioural interventions designed according to a personalised methodology, taking into account the specific symptoms and characteristics of each individual, in order to develop their social and language skills, a necessary condition for social inclusion (Mirenda, 2005). Among these, Alternative and Augmentative Communication (AAC) systems represent a valuable set of communication methods and strategies used to enhance the communication skills of individuals with autism. Several AAC systems exist and are used to support communication in autism. AAC systems in autism must support so-called independent functional communication, which refers to their having to be expendable in different life contexts and with different communicative partners (Ganz, 2015).

The principles of AAC, in fact, focus on the need to develop maximum generalisability of the use of the communicative tool or strategy in different situations and contexts, so as to foster the subject's communicative abilities as much as possible (Donato, Spencer, & Arthur-Kelly, 2018). In recent years, efforts to provide children with ASD with an effective communication system and a means of learning have involved the use of sign language. From this perspective, Sign Language (SL) as an alternative and augmented means of communication, articulated on a visual-gestural channel, can offer a valid solution to foster communication between the autistic child and the surrounding world. Through its communicative channel, the SL provides the ability to communicate and overcome language barriers, to improve communication and social interaction by developing important skills, such as the ability to look the other person in the eye during communication and the understanding of others' facial expressions and gestures, skills that are often deficient in autistic children (Manwaring, Mead, Swineford, & Thurm, 2017). The use of hand signs is, therefore, considered an indispensable resource for children for whom spoken language is impaired, including many children with ASD. The scientific literature documenting the effectiveness of this approach is mixed, although several authors (Bonvillian & Nelson, 1976) claim that in some children with hearing and minimally verbal ASD, sign language acquisition can be successful when all attempts at verbal language acquisition have failed. A growing number of studies arising from the need to verify the benefits of the use of sign language in terms of the acquisition of communication skills by children with autism have highlighted the potential effectiveness on language development and educational success achieved through this type of intervention (Bonvillian & Nelson, 1976; Carr, 1979; Carr, Binkoff, Kologinsky, & Eddy, 1978; Cohen, 1981; Konstantareas, Oxman e Webster, 1977; Yoder e Layton, 1988). Bebko (1990) suggests that intermodal language acquisition (speech and sign language) can be a valuable resource in teaching functional communication skills to hearing children who are echolalic. A review of eight studies on the use of sign language to teach communication skills to hearing children with ASD (Schwartz & Nye, 2006) indicated a significant positive effect on the development of communication and interpersonal skills, although the authors pointed out that the studies in question did not provide enough information to allow for replicability and were not generalisable due to the single-subject design of seven of the eight studies. Several studies have been able to demonstrate the effectiveness of sign language learning especially in improving long-term sign memorisation skills (Gaines, Leaper, Monahan, & Weickgenant, 1988) in contrast to the poor word retention often evident in spoken language interventions.

Coinciding with the improvement of sign communication by autistic children, most studies have reported an increase in attention span, motivation, and improvement in social behaviour (Carr, 1979; Carr & Kologinsky, 1983; Konstantareas, Webster, & Oxman, 1979) as well as the ability to acquire a broad lexicon of signs to combine in order to generate short sentences (Bonvillian & Blackburn, 1991; Konstantareas, 1985; Layton, 1987). The inability of these children to learn and reproduce a large number of signs accurately has raised concerns about potential problems with the development of motor skills in autistic children. Several studies, in fact, have reported a great deal of systematic information on difficulties in fine motor development and the incidence of motor disorders in children diagnosed with autism (Damasio & Maurer, 1978; Wilson, Enticott, & Rinehart, 2018). Indeed, it has been suggested that autism may be "as much a disorder of motor behaviour as of cognitive behaviour" (Bram, Meier, & Sutherland, 1977).

Considering what has been discussed so far, it is evident that it is becoming increasingly important to recognize the potential of Sign Language (SL) in areas not exclusively related to deafness and to disseminate good practices related to its use in individuals with communication disabilities (Pallavicino, 2004). There is therefore a need to implement the use of SL in order to bridge the communication gap and respond to the desire of children with autism and with communication deficits to express their emotions and feelings. The aim of this paper is, therefore, to analyse the application of LS as an effective teaching approach for inclusive purposes for

children with Autism Spectrum Disorders, focusing on the effectiveness of language and communication stimulation.

1. The importance of teaching sign language in Autistic Spectrum Disorders

Sign language is one of the possible declinations of the faculty of language, i.e. the inherent human capacity to generate and develop a complex system of signs through which events, states of affairs, actions of the world outside and inside the speaker are signified (Frolli et al., 2022). The existence of this language proves that man, in order to realize this innate disposition, is able to work out alternative means of natural expression when the vocal language becomes unavailable. Sign languages have the same semiotic characteristics as speech languages and like them have specific structural features (Shield, Pyers, Martin, & Tager-Flusberg, 2016). The development of sign languages consists of a gestural semiosis that can be found in both deaf and hearing people during the preliminary stages of language acquisition. In the first months of life, hearing individuals use gestures and vocalisations indiscriminately, which prepare them for the linguistic phase proper; gestures change and, within their linguistic code, evolve into a multimodal system in which they co-occur with spoken language (Durrleman, & Franck, 2015).

The deaf child, on the other hand, exposed from birth to a sign language, develops a progressive shift from a gestural and a-systematic prelinguistic system to a complete semiotic system whose signs are systematic and conventional. This makes it clear that Sign Language is a natural language because it stems from the deaf 's disposition to signify the world to themselves from the semiotic material that is most inherent to them: Signs. This gestural matter is systematised and codified into linguistic forms by means of a selection of traits that each signers makes on the basis of the practical-perceptual experience he shares with his peers, giving rise to a veritable code that is both natural and conventional and arbitrary, since the traits are selected on the basis of the relationship that signers establish from time to time between the different meanings and signifiers of the language (Sparaci et al. 2022). The Sign Language is defined to all intents and purposes as a natural-historical language, as it evolves over time in parallel with the linguistic community of reference: the deaf are embedded in an ever-changing geographical, social and cultural context.

Sign language, like all vocal languages, has variations in both the diachronic and diatopic dimensions. All of the sign languages attested in the world show great variability in terms of both the number of signers and standardisation, because, being oral languages, they lack a form of writing that facilitates this process; moreover, while for speech languages, thanks to schooling, a variety recognised by the community as a standard language has become established, sign languages, on

the other hand, are subject to slow and poor standardisation, presenting numerous differences even within the same country of reference (Pezzuoli, Tafaro, Pane, Corona, & Corradini, 2020). Considering the training and integration pathway of an ASD child, we see that, according to this perspective, it is important for the child to know Italian and Italian Sign Language (ISL). Bilingual education for ASD children is now considered by many researchers to be an appropriate method for their social inclusion (Brignell et al., 2018). Sign language enables the ASD child to spontaneously develop language and thinking, while spoken language helps him to interact with hearing people. The use of the bilingual method allows the child to learn lessons while acquiring the linguistic competence of Italian. Other methods that can be used are: Italian Signed Exactly and Italian Signed, bearing in mind, however, that Italian Signed Exactly is an artificial linguistic code that combines the lexical vocabulary of sign language, the morphological structure of Italian and markers such as typing, facial expressions, movement, posture and configuration. Sign Language is more than that, it is a communicative system that exploits the visual-gestural channel; it has all those characteristics that make a communication system a real language: articulation, composition, arbitrariness, grammar, syntax (Bhat, Srinivasan, Woxholdt, & Shield, 2018). The use of Sign Language enables the ASD child to build social relationships, and open up to others with confidence in himself and his abilities. It is therefore important to ensure that ASD children have the possibility of a bilingual education, speech and sign language, that takes into account all cognitive elements of learning (Arunachalam, & Luyster, 2016). For the autistic pupil, in fact, the human and affective dimension is even more important so that he can improve the acquisition of cognitive and psychological skills that are indispensable for the growth of his self-esteem and autonomy.

2. Didactic approach with Sign Language support in children with ASD

Sign language has been used very successfully in the treatment of autism in Italy since the 1970s, so much so that it is now defined as a second language in association with traditional verbal communication. Today, it is no longer regarded as an additional support and communication tool, but as a real resource available to educators in order to foster the integration of children with autism spectrum disorders within a social group, be it the family or the school classroom (Genç Tosun, Köse, & Okatan, 2022). The teaching approach used to develop LS acquisition is divided into several interconnected phases. To date, in most cases the approach that is applied involves: (i) Applied Behavioural Analysis (ABA); (ii) Educational programmes; (iii) Speech and Language Therapy support. Through ABA, the different behavioural, cognitive and language skills are taught to children in a progressive and gradual manner, trying to create positive reinforcement in them that can become a stimulus for future learning. During this phase, the child must be

taught how to speak and communicate with the world around him, how to take care of himself, read, write, work and lead as normal a life as possible. Social interactions must also be stimulated by trying to create interests and passions in them (Denmark, Atkinson, Campbell, & Swettenham, 2019). Educational programmes, developed especially within the school context, must enable children to develop the indispensable skills and abilities that will enable them to continue their studies and obtain a qualification that will guarantee them the possibility of entering the world of work in the future. Depending on the level of severity of the pathology, therefore, the family, with the support of the clinical, pedagogical and educational staff, will assess on a case-by-case basis whether the child will be able to attend a normal school, with the correct support, or specific institutions. For all children with specific difficulties in speech and language articulation, specific sessions that teach them various alternative communication techniques should be included in the educational plan from an early age (Eltyeb, & Taha, 2023).

The support of speech and language therapy is essential for a child with ASD to acquire the ability to communicate with others. Specific speech therapy enables the autistic child to learn to articulate various syllables, breathing techniques and, finally, the articulation of complete words and sentences (Karimovna, 2022). Speech therapy sessions, it is now proven, become more effective when combined with sessions that teach the use of Sign Language. There is increasing scientific evidence, in fact, confirming the close connection between these two language modalities even in cortical stimulation. This approach is essential even when the difficulty of expression through speech does not appear to be excessively severe. In general, in fact, there are autistic children who present only simple problems in the articulation of speech, while in some cases it may even go as far as total and absolute inability to speak, passing through all intermediate forms of difficulties (Peterson, Slaughter, Moore, & Wellman, 2016). Very often, for example, children automatically and involuntarily repeat what they hear, without their utterances having any meaning or foundation. This type of problem is called echolalia. The link between speech and gestures, which in ordinary people is normal and taken for granted, may even be absent in sufferers, so that children not only do not speak, but do not even gesture to make themselves understood and communicate in a seemingly simple and spontaneous manner (Mottron, 2017).

There are many ABA techniques that have been developed over time and among them, one of the most used and effective is called Mand and aims to teach autistic children how to make their requests to others. The term Mand means request and consists precisely of an organised system that enables the autistic child to understand what he needs and to externalise his need (Valentino, & Shillingsburg, 2011). In some cases, motivation is innate in the child, but in many others, it is not, so it becomes crucial for the therapist to stimulate forms of reinforcement that lead the child to really become aware of his or her needs. The

Mand technique can be used to get children to use a bimodal method developed between speech and sign language. If, in fact, he begins to express his needs through the two communication channels, a system of gratification and reward can be put in place that will also prompt him on subsequent occasions to structure requests consistent with the situation he is facing.

3. Inclusive teaching approach for promoting the use of Sign Language with Autistic Children

The latest data collected by the National Autism Associations (ANGSA, ANFFSA, Associazione Autismo Italia) are increasingly worrying, as the number of autistic children with verbal communication problems is constantly growing and, in general, around 50 per cent of autistic children have more or less severe problems. The difficult feeling that is generated is a chain reaction that results in a sense of frustration, anguish, loneliness and apathy on the part of the children and, helplessness and uselessness in their caregivers. These considerations led to the decision to use Sign Language as an inclusive didactic approach to support people with autism. Since the use of Alternative Augmentative Communication (AAC), i.e. all those forms of language that do not employ the voice and speech, but any other part of the body according to the abilities of each individual subject, other forms of communication have been tried to complement, amplify and enhance verbal communication (Berenguer, Martínez, De Stasio, & Baixauli, 2022).

In AAC, therefore, verbal and non-verbal language coexist and merge with one another. Of all these particular forms of communication with the outside world, the one best known and most exploited in interventions for children with ASD is Sign Language. It is, in fact, easier to teach an autistic child than teaching vocal articulation. In order for a child to learn to pronounce a new word, he must first listen to it carefully, break it down into its constituent syllables and then try to repeat it. The use of signs, on the other hand, is quicker because the child, even after seeing the movement once, can remember and successfully repeat it through an imitative process based on a channel, visual-gestural, that is not altered (Kusumastuti, 2019). Communication through signs, however, must be as unambiguous and standardised as possible so that anyone can use it without difficulty. However, it is clear that, depending on the precise needs, abilities and difficulties of each child, it can be adapted and reworked by the educator.

The advantages associated with the use of sign language, especially in comparison to other forms of AAC, are determined by several intrinsic factors. Firstly, SL is immediate and fast. If, for example, instead of using sign language, an autistic child were asked to communicate using picture boards, he would take several minutes to choose the drawn boards which, placed next to each other, would allow him to express his thoughts. If we imagine that a child wants to say that he or she wants to watch television in the kitchen while eating a snack, he or

she would have to choose from all the tables at his or her disposal, his or her own photograph and drawings of the kitchen, the television and a child eating. It is evident that all these operations can take some time and can also lead to slightly different interpretations of the child's thinking. The child himself might get bored while searching for the various cards due to excessive time, just as the interlocutor might lose attention while waiting. The use of Sign Language, on the other hand, would allow the child to express himself unambiguously, through a few, immediate and simple signs (Hinzen, Slušná, Schroeder, Sevilla, & Vila Borrellas, 2020). Moreover, it can be generalised in a much simpler and more effective manner, so that it can be used in any situation and context. If, for example, picture tables are used, it is unlikely that the child will always have at his disposal all the tables he may need to express his concepts and ideas. Sign Language, on the other hand, once learnt, can be an immediate communication tool forever (Dunlap, 2018). Finally, LS is able to stimulate the same brain areas involved in verbal communication. Many brain systems that control the production of speech and sign are similar. A child exposed to sign language from an early age, without realising it, activates the portion of the brain that commands and enables the articulation of words. This means that, with the passage of time, there may also be marked improvements in his ability to speak. The results of investigations conducted on these brain systems have literally debunked previous beliefs that there was a fear that if a child with autism began to communicate through the use of sign language, he or she would run the risk of forgetting the use, even if limited, of voice or, in any case, becoming disincentivised from doing so over time (Plavnick, & Vitale, 2016). In fact, it is quite the opposite because using Sign Language with time and perseverance also helps with speech. All this is made possible by the fact that this type of language exploits visual perceptions and stimuli, which in most cases in autistic children are not impaired at all, instead of auditory ones that, on the other hand, may be deficient or otherwise impaired (Goldin-Meadow, & Brentari, 2017). A didactic methodology that contemplates the use of Sign Language comes very close to those cognitive-behavioural techniques that show good results in the therapy of autism, favouring and soliciting the child's attention spans, sharing with them the strong structuring of activities and the clarity of the request expressed to the child. Other reasons that explain the choice of such a technique as well as the success achieved in numerous experiments (Hein, 2019) include the relative ease with which autistic children demonstrate the acquisition and use of a marked vocabulary, despite the fact that they can hardly speak, the efficiency of manual sign communication (Yoder, & Layton, 1988) that generates positive feedback that reaches both the educator and the autistic child, and finally, the iconicity of certain signs associated with the decrease in phonetic stimuli. A further positive aspect related to the use of SL concerns the improvement of the relational aspect, as many autistic children, following the use of SL, started to accept physical contact with reference figures. Teaching an autistic child how to communicate using Sign Language is really very simple and intuitive because it actually takes advantage of the normal process of communication and development that any child goes through while growing up. Specifically, Sign Language seeks to promote the acquisition and knowledge of certain names, situations and images (Sengupta, Lobo, & Krishnamurthy, 2017). The most widely used method for teaching and using sign language with autistic children involves three stages:

- Step 1: you show a picture to the child and then show the corresponding sign with your hands while, out loud, you say the corresponding word. So, if, for example, you have to teach Sign Language how to identify the word 'ball', you show the child a photograph or drawing of this object and then move your hands to reproduce the corresponding sign. In the meantime, the word 'ball' is pronounced (this must be done even if the child has a hearing defect and is unable to hear the educator's voice because he or she will, however, be able to see the movement of the lips).
- Step 2: Depending on the age, developmental stage and level of severity of the pathology and disability, the child is urged to try to reproduce the sound of the word they have just heard and to move their hands to copy the sign corresponding to it. The aim, therefore, is to create in the child's mind an association between the word and the sign so that this can, with time, become increasingly automatic and spontaneous. At this stage of learning, recognition of the child's achievements becomes crucial and, consequently, any form of gratification towards the child becomes useful. A smile, a hug, a nod can be effective positive reinforcers that encourage the child to learn and learn.
- Step 3: We move from saying to doing and then, as far as possible, physically hand the object over to the child. This phase is crucial because it unconsciously allows the child to make the link between sound, sign and reality stronger and stronger. In cases where the autism spectrum syndrome is milder or, in any case, the child is older and already able to read and write, a more direct teaching approach can be adopted. In this case, we start by teaching and memorising all the letters of the alphabet. This can also be done in a simple and fun way. Knowing all the letters of the alphabet can be a real lifeline while communicating because, if for whatever reason, one no longer knows or remembers the specific sign associated with a specific word, it can still be reproduced by spelling it out letter by letter. We then proceed by teaching the child the signs associated with simple words, up to more complex ones. By juxtaposing the various memorised signs and copying the sentence structure from the teacher, you will come up with sentences that make sense.

Each school adopts different techniques to teach children Sign Language and its use. What is presented is only one possible course of action. Each child, then, is a world of its own and it is precisely for this reason that it becomes essential to adapt and customise any technique and procedure. In this process, therefore, the professionalism, skills and preparation of the teacher and educator become crucial (Flannery, & Wisner-Carlson, 2020). If, even after a period of intervention, the child is unable to develop any form of communication through speech and language, it becomes essential to start and proceed with the use of a bimodal method (speech and sign language), which has proven to be effective in improving scholastic results. Children exposed to the bimodal method with Sign Language and Italian Sign Language in particular learned to describe, name simple figures and objects. With the support of typing, they are able to write under dictation and later switch from typing to lip dictation.

Finally, they can attain discrete skills in reading and writing, such as reading aloud frequently used two- and three-syllable words and, on demand, producing the corresponding signs (thus understanding what is read) (Gray, Bownas, Hicks, Hutcheson-Galbraith, & Harrison, 2021). They are able to write words and short sentences in block letters under dictation and, with the help of typing dictation, no spelling errors can be detected. Overall, there was a significant increase in attention spans. In addition, the use of visual modes of communication such as sign and image facilitates the maintenance of eye contact with the interlocutor and requires a high level of communicative engagement that the children do not shy away from. There has been progress in making requests in an increasingly explicit and agreeable manner, significantly losing that sense of frustration that comes from not being understood. It has been found that what the child is able to ask for or produce spontaneously is the single sign and not the ISL sentence, a sign that is used as a keyword with a broader meaning. The progress in the communicative and consequently social area is of profound significance as it demonstrates that ILS in the case of autism, as in that of deafness, has served to slowly decrease the barrier that existed between the child and other people (Carpenter, Happé, & Egerton, 2019). The use of sign language, while bringing improvements in the linguistic and communicative sphere, inevitably leads to the child becoming more and more aware of his or her own being, needs and learning the rules of sharing. These important steps forward come after years of teaching and insertion in a protected environment of specialised schools; in fact, what is still missing in the common school experience is the possibility of sharing a language, the Sign Language precisely, with peers and not only with adult and specialised figures.

Conclusion

Thinking about a different way of communicating opens up new ways for all those who need an alternative way of expressing themselves, always bearing in

mind that the use of alternative and augmentative forms of communication do not interfere with the use and learning of a vocal language, on the contrary, they are a means of stimulating and facilitating vocal production. In relation to a person with Autistic Spectrum Deficit, an inclusive teaching approach using Sign Language enhances the teaching-learning process, but first and foremost it fosters the development of communication skills, allowing the autistic person to positively relate to the world around him. In particular, SL has been proposed as an effective teaching tool with respect to the three symptom categories: the tendency towards social isolation with qualitative abnormalities in social interaction; and communication and language difficulties; the limitation of the repertoire of activities and interests with the presence of stereotyped behaviour. Therefore, the present work has shown how, through the application of the bimodal method, the distance that exists between what the child thinks and what he actually makes explicit, between what he is told and what he understands, is reduced.

In order to stem the risk of marginalisation of those who use Sign Language, there emerges the need on the part of the School to offer a shared context: the context of a language marked by a group, by an entire community, and a sharing that leaves room for peer identification, that allows one to not always feel like a minority. Numerous trials of teaching ISL to deaf and hearing children in joint primary and nursery schools throughout Italy have yielded excellent results. These studies have shown how effectively deaf and hearing children were able to learn ISL and how this process benefited them in meeting a different language and culture, not only facilitating the deaf child's inclusion in school but also raising their awareness of the other culture. The aim is to promote an inclusive, intercultural and personalised learning environment that encourages understanding of different cultures and languages, and uses flexible teaching methodologies. Each individual must be enabled to develop his or her potential and feel comfortable in the learning environment. These experiences are good models, experimentations that emphasize the importance of providing children with Special Educational Needs (SEN) with targeted teaching that is attentive to their needs, without it being decontextualized but rather put at the service of all. Such an approach avoids the error of a welfarist approach or a normalising policy. A welfarist approach, in fact, would risk marginalising children with special educational needs and create a false context of a 'special world for special children'. On the other hand, the normalising policy would create a problem that is too often underestimated, namely that of wanting to 'normalise' even those who are disadvantaged and have their own peculiarities and needs, leading the SEN pupil to isolation from the classroom environment.

Considering what has been discussed and the evidence available in the literature, it is possible to highlight how the use of sign language can be considered

a valid educational approach to overcoming language barriers in children with autism spectrum disorders.

References

- Abrahamsen, A. (2000). Explorations of enhanced gestural input to children in the bimodal period. In K. Emmorey & H. Lane (Eds.), The signs of language revisited: An antology to honor Ursula Bellugi and Edward Klima, Mahwah,NJ, Lawrence Erlbaum. Associates Inc. 358-399
- American Psychiatric Association (2023). DSM-5-TR. Manuale diagnostico e statistico dei disturbi mentali. Text revision. Arlington, VA: American Psychiatric Publishing. Edizione italiana: Manuale diagnostico e statistico dei disturbi mentali. Milano: Raffaello Cortina.
- Arduini-Fabbri (2008), Che cos'è la linguistica cognitiva. Roma: Carocci Ed.
- Arunachalam, S., & Luyster, R. J. (2016). The integrity of lexical acquisition mechanisms in autism spectrum disorders: A research review. *Autism Research*, *9*(8), 810-828.
- Bagnara- Corazza- Fontana- Zuccalà (a cura di) (2008) *I segni parlano. Prospettive di ricerca sulla Lingua dei SegniItaliana*. Milano: F. Angeli Ed.
- Ballarin-Bigotti (2010), La glottodidattica umanistico-affettiva e funzionale. Progetto A.L.I.A.S., Venezia: Università Cà Foscari.
- Barale F., Carrà G., Ucelli di Nemi S. (2003), "L'autismo, malattia della comunicazione", *Mente e cervello* 1, 62-67
- Barnes S., The use of sign language as a technique for language acquisition in autistic children: An applied model bridging verbal and nonverbal theoretical systems, phD dissertation California School of professional Psychology
- Battigliere G., Meazzini P., Psicopatologia dell'handicap: i primi passi" in HD,n.51/1993
- Bebko J. M. (1990). Echolalia, mitigation, and autism: Indicators from child characteristics for the use of sign language and other augmentative language systems. *Sign Language Studies*, 66, 61–78.
- Bellando, J., Fussell, J. J., & Lopez, M. (2016). Autism Speaks Toolkits: Resources for Busy Physicians. *Clinical pediatrics*, *55*(2), 171–175. https://doi.org/10.1177/0009922815594587
- Berenguer, C., Martínez, E. R., De Stasio, S., & Baixauli, I. (2022). Parents' Perceptions and Experiences with Their Children's Use of Augmentative/Alternative Communication: A Systematic Review and Qualitative Meta-Synthesis. *International journal of environmental research and public health*, 19(13), 8091. https://doi.org/10.3390/ijerph19138091

- Bhat, A. N., Srinivasan, S. M., Woxholdt, C., & Shield, A. (2018). Differences in praxis performance and receptive language during fingerspelling between deaf children with and without autism spectrum disorder. *Autism*, *22*(3), 271-282.
- Bonvillian J. D., & Nelson K. E. (1976). Sign language acquisition in a mute autistic boy. *Journal of Speech and Hearing Disorders*, 41, 339–347.
- Bram, S., Meier, M., & Sutherland, P. J. (1977). A relationship between motor control and language development in autistic child. Journal of Autism and Childhood Schizophrenia, 7, 57-67
- Brignell, A., Chenausky, K. V., Song, H., Zhu, J., Suo, C., & Morgan, A. T. (2018). Communication interventions for autism spectrum disorder in minimally verbal children. *The Cochrane database of systematic reviews*, *11*(11), CD012324. https://doi.org/10.1002/14651858.CD012324.pub2
- Buonomo V. Celo P. (2009), Continuismo/discontinuismo nelle lingue segnate. Una gestualità comune con le lingue vocali?. In «Ontogenesi, filogenesi e differenziazione dei sistemi comunicativi». Pavia: Altravista (vol. 8: 71-8).
- Bury, S. M., Jellett, R., Spoor, J. R., & Hedley, D. (2023). "It Defines Who I Am" or "It's Something I Have": What Language Do [Autistic] Australian Adults [on the Autism Spectrum] Prefer?. *Journal of autism and developmental disorders*, *53*(2), 677–687. https://doi.org/10.1007/s10803-020-04425-3
- Carpenter, B., Happé, F., & Egerton, J. (Eds.). (2019). *Girls and autism: educational, family and personal perspectives*. Routledge.
- Carr, E. G. (1979). Teaching autistic children to use sign language: Some research issues. Journal of Autism and Developmental Disorders, 9, 345-359.
- Carr, E. G., & Kologinsky, E. (1983). Acquisition of sign language by autistic children: II. Spontaneity and generalization effects. Journal of Applied Behavior Analysis, 16, 297-314
- Carr, E. G., Binkoff, J., Kologinsky, E., & Eddy, M. (1978). Acquisition of language by autistic children: 1. Expressive labeling. Journal of Applied Behavior Analysis, 11, 489-501.
- Cohen, M. (1981). Development of language behavior in an autistic child using total commu- nication. Exceptional Children, 47, 379-381.
- Crispiani P., Lavorare con l'autismo. Dalla diagnosi ai trattamenti, Edizioni junior, Bergamo 2002
- Damasio, A. R., & Maurer, R. G. (1978). A neurological model for childhood autism. Archives of Neurology, 35, 777-786.
- Danesin B. ,Dzingalasevic G. (2006) Comunicazione alternativa per bambini con autismo. Come viene utilizzata da genitori e insegnanti, Autismo e disturbi dello sviluppo 1, 93-105
- Denmark, T., Atkinson, J., Campbell, R., & Swettenham, J. (2019). Signing with the face: Emotional expression in narrative production in deaf children with autism

- spectrum disorder. *Journal of autism and developmental disorders*, 49, 294-306.
- Donato, C., Spencer, E., & Arthur-Kelly, M. (2018). A critical synthesis of barriers and facilitators to the use of AAC by children with autism spectrum disorder and their communication partners. *Augmentative and alternative communication (Baltimore, Md. : 1985), 34*(3), 242–253. https://doi.org/10.1080/07434618.2018.1493141
- DSM-5 Criteri diagnostici. DSM-5, Cortina Raffaello, 2023, EAN: 9788832855173
- Dunlap, J. J. (2018). Interacting with individuals on the Autism spectrum. *American Nurse Today*, 13(4), 16-19.
- Durrleman, S., & Franck, J. (2015). Exploring links between language and cognition in autism spectrum disorders: Complement sentences, false belief, and executive functioning. *Journal of communication disorders*, *54*, 15–31. https://doi.org/10.1016/j.jcomdis.2014.12.001
- Eltyeb, E. E., & Taha, S. A. (2023). Using sign language in children with autistic spectrum disorders: special education teachers' attitudes and experience. *International Journal of Research in Medical Sciences*, *11*(2), 459.
- Flannery, K. A., & Wisner-Carlson, R. (2020). Autism and education. *Child and Adolescent Psychiatric Clinics*, *29*(2), 319-343.
- Frith U. (1996) *L'autismo spiegazione di un enigma,* Roma-Bari, Laterza La Grassa M. (2014), *La Lingua dei Segniper gli udenti. L'italiano per i sordi.* Roma: Aracne Fd.
- Frolli, A., Ciotola, S., Esposito, C., Fraschetti, S., Ricci, M. C., Cerciello, F., & Russo, M. G. (2022). AAC and Autism: Manual Signs and Pecs, a Comparison. *Behavioral sciences (Basel, Switzerland)*, 12(10), 359. https://doi.org/10.3390/bs12100359
- Gaines, R., Leaper, C, Monahan, C., & Weickgenant, A. (1988). Language and retention in young language-disordered children. Journal of Autism and Developmental Disorders, 18, 281-296.
- Ganz J. B. (2015). AAC Interventions for Individuals with Autism Spectrum Disorders: State of the Science and Future Research Directions. *Augmentative and alternative communication (Baltimore, Md.: 1985)*, *31*(3), 203–214. https://doi.org/10.3109/07434618.2015.1047532
- Genç Tosun, D., Köse, H., & Okatan, İ. (2022). Examining the Augmentative and Alternative Communication Systems Preferences of Individuals with Autism Spectrum Disorder. *Journal of Hasan Ali Yücel Faculty of Education/Hasan Ali Yücel Eqitim Fakültesi Dergisi (HAYEF)*, 19(2).
- Goldin-Meadow, S., & Brentari, D. (2017). Gesture, sign, and language: The coming of age of sign language and gesture studies. *Behavioral and brain sciences*, 40, e46.

- Gray, L., Bownas, E., Hicks, L., Hutcheson-Galbraith, E., & Harrison, S. (2021). Towards a better understanding of girls on the Autism spectrum: Educational support and parental perspectives. *Educational psychology in practice*, *37*(1), 74-93.
- Hein, A. (2019). Teaching American Sign Language to Children with Autism Spectrum Disorder (Doctoral dissertation).
- Hinzen, W., Slušná, D., Schroeder, K., Sevilla, G., & Vila Borrellas, E. (2020). Mind–Language? The significance of non-verbal autism. *Mind & Language*, *35*(4), 514-538.
- Howell, M., Bailey, T., Bradshaw, J., & Langdon, P. E. (2021). The preliminary validity and reliability of the Assessment of Barriers to Learning in Education Autism. *Research in developmental disabilities*, *116*, 104025. https://doi.org/10.1016/j.ridd.2021.104025
- Karimovna, N. Y. (2022). Autism and the importance of communication with patients of this disease. *Gospodarka i Innowacje.*, 23, 8-10.
- Konstantareas, M. M., Oxman, J., & Webster, C. (1977). Simultaneous communication with autistic and other severely dysfunctional nonverbal children. Journal of Communication Disorders, 10, 267-282.
- Kusumastuti, G. (2019). Using Sign Language to Enhance Vocabulary in Early Childhood with Autism. In *3rd International Conference on Special Education (ICSE 2019)* (pp. 103-106). Atlantis Press.
- Layton, T L. (1987). Manual communication. In T L. Layton (Ed.), Language treatment of autistic and developmentally disordered children (pp. 189-213). Springfield, IL: Charles C Thomas.
- Lei, J., Jones, L., & Brosnan, M. (2021). Exploring an e-learning community's response to the language and terminology use in autism from two massive open online courses on autism education and technology use. *Autism: the international journal of research and practice*, *25*(5), 1349–1367. https://doi.org/10.1177/1362361320987963
- Manwaring, S. S., Mead, D. L., Swineford, L., & Thurm, A. (2017). Modelling gesture use and early language development in autism spectrum disorder. *International journal of language & communication disorders*, *52*(5), 637–651. https://doi.org/10.1111/1460-6984.12308
- Mirenda, P. (2005). Comunicazione aumentativa e tecnologia assistiva. Che cosa sappiamo veramente? *Autismo e Disturbi dello Sviluppo*, 3, 295-319.
- Mottron, L. (2017). Should we change targets and methods of early intervention in autism, in favor of a strengths-based education?. *European child & adolescent psychiatry*, 26(7), 815-825.
- Myers, S. M., Johnson, C. P., & American Academy of Pediatrics Council on Children With Disabilities (2007). Management of children with autism spectrum

- disorders. *Pediatrics*, *120*(5), 1162–1182. https://doi.org/10.1542/peds.2007-2362
- Pallavicino A., 2004, L'utilizzo della Lingua dei Segni Italiana con un bambino con diagnosi di autismo: un'esperienza, In: "Psicologia Clinica dello Sviluppo", anno VIII, N.2, Milano.
- Perruca A., (1998) La pedagogia interculturale, in ID (a cura di), Pedagogia interculturale e dimensione europea dell'educazione, Pensa MultiMedia, Lecce
- Peterson, C., Slaughter, V., Moore, C., & Wellman, H. M. (2016). Peer social skills and theory of mind in children with autism, deafness, or typical development. *Developmental psychology*, *52*(1), 46.
- Pezzuoli, F., Tafaro, D., Pane, M., Corona, D., & Corradini, M. L. (2020). Development of a new sign language translation system for people with autism spectrum disorder. *Advances in Neurodevelopmental Disorders*, *4*, 439-446.
- Piaget, J., Lo sviluppo mentale del bambino e altri studi di psicologia, Einaudi, 1967 Pigliacampo R., (1987)Appunti di semiotica, Edizioni Il Sordudente, porto Recanati
- Pizzamiglio M.R., Piccardi L., Zotti A., Lo spettro autistico. Definizione, valutazione, riabilitazione, in neuropsicologia, Franco Angeli, Milano 2007 Ricci, C., (2001) *Manuale per l'integrazione scolastica: i principi, le competenze, la buona pratica*. Fabbri-Editore, Milano. Simple, P., Fisher, S.D. (1991). Theoretical is- sues in sign language research.
 - Simple, P., Fisher, S.D. (1991). Theoretical is- sues in sign language research. Chicago, IL: Chicago University Press.
- Plavnick, J. B., & Vitale, F. A. (2016). A comparison of vocal mand training strategies for children with autism spectrum disorders. *Journal of Positive Behavior Interventions*, 18(1), 52-62.
- Schwartz J. B., & Nye C. (2006). Improving communication for children with autism: does sign language work? *EBP Briefs*, 1(2), 1–17.
- Sengupta, K., Lobo, L., & Krishnamurthy, V. (2017). Educational and behavioral interventions in management of autism spectrum disorder. *The Indian Journal of Pediatrics*, 84(1), 61-67.
- Shield, A., Pyers, J., Martin, A., & Tager-Flusberg, H. (2016). Relations between language and cognition in native-signing children with autism spectrum disorder. *Autism research: official journal of the International Society for Autism Research*, *9*(12), 1304–1315. https://doi.org/10.1002/aur.1621
- Sparaci, L., Formica, D., Lasorsa, F. R., Raiano, L., Venuti, P., & Capirci, O. (2022). New Methods for Unraveling Imitation Accuracy Differences Between Children with Autism and Typically Developing Peers. *Perceptual and motor skills*, 129(6), 1749–1774. https://doi.org/10.1177/00315125221126215
- Teague, S. J., Newman, L. K., Tonge, B. J., Gray, K. M., & MHYPEDD Team (2020). Attachment and child behavior and emotional problems in autism spectrum disorder with intellectual disability. *Journal of applied research in intellectual disabilities: JARID, 33*(3), 475–487. https://doi.org/10.1111/jar.12689

- Valentino, A. L., & Shillingsburg, M. A. (2011). Acquisition of mands, tacts, and intraverbals through sign exposure in an individual with autism. *The Analysis of verbal behavior*, *27*(1), 95–101. https://doi.org/10.1007/BF03393094
- Vicari S., Caselli, M.C. (a cura di) (2002). I disturbi dello sviluppo. Bologna: Il Mulino. Wilson, R. B., Enticott, P. G., & Rinehart, N. J. (2018). Motor development and delay: advances in assessment of motor skills in autism spectrum disorders. *Current*
 - opinion in neurology, 31(2), 134–139. https://doi.org/10.1097/WCO.00000000000541
- Yoder, P J., & Layton, T L. (1988). Speech following sign language training in autistic children with minimal verbal language. Journal of Autism and Developmental Disorders, 18,217-228.
- Yoder, P.J., Layton, T.L. (1988). Speech following sign language training in autistic children with minimal verbal language. *J Autism Dev Disord* **18**, 217–229. https://doi.org/10.1007/BF02211948