Revision articles

Delimitation of the area named augmentative and alternative communication (AAC)

Delimitação da área denominada comunicação suplementar e/ou alternativa (CSA)

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ABSTRACT

In this study, a historical review was carried out on the delimitation and dissemination of Augmentative and Alternative Communication AAC, both nationally and internationally. The aim was to understand how such area is developing. It is assumed that AAC is a semiotic activity comprising verbal and non-verbal, sign-based materials for mediating dialogic interactions, thereby, facilitating language acquisition and learning processes involving subjects with significant speech impairments. The purpose is to identify developments and general trends in order to establish an overview of the research area. The access to events, facts and knowledge behind AAC was carried out by a literature review of national and international publications, specially in the United States, Canada and Brazil from the 1950s until present day. An understanding of the main components constituting the research area was achieved for the past five decades. The definition of AAC as a specific area has taken place from the 1950s, both nationally and internationally. To conclude, we advocate that AAC should not be considered and organized as a specialized area, but should be associated with different language-oriented, health and education disciplines, which consider the historicity and complexity of the pertaining phenomena.

Keywords: Communication Aids for the Disabled; Speech, Language and Hearing Sciences; Education

RESUMO

Realizou-se um resgate histórico acerca da delimitação e difusão da Comunicação Suplementar e/ou Alternativa (CSA) em âmbito internacional e nacional, a fim de elucidar como a área vem sendo constituída, bem como uma revisão da literatura para identificar as principais concepções de linguagem que vêm fundamentando a produção acadêmica em CSA no contexto internacional e nacional Parte-se do pressuposto de que a CSA é uma atividade semiótica composta por signos verbais e não-verbais que medeiam as interações dialógicas, favorecendo a apropriação da linguagem, a aprendizagem e, portanto, a constituição do sujeito com significativas limitações de fala. Pretende-se apreender movimentos e tendências comuns que permitam estabelecer um panorama geral de constituição desta área. O acesso aos acontecimentos, fatos e conhecimentos que participam da delimitação da CSA se deu a partir de revisão de fontes documentais e de revisão de literatura, nacional e internacional, que abordavam, especialmente tais movimentos nos Estados Unidos da América (EUA), Canadá e Brasil, a partir da década de 1950 até a atualidade. Puderam-se apreender, nas cinco últimas décadas, elementos que participaram da constituição de tal área em âmbito internacional. Chega-se a conclusão que a CSA passa a ser identificada como uma área específica a partir de 1950, internacionalmente e no Brasil, a partir do final da década de 1970. Defende-se a ideia de que a CSA não deve ser considerada e organizada como uma área especializada deve sim ser constituída por diferentes disciplinas atreladas às áreas da saúde e da educação que, voltadas à linguagem, considerem a historicidade e complexidade dos fenômenos envolvidos.

Descritores: Auxiliares de Comunicação para Pessoas com Deficiência; Fonoaudiologia; Educação

INTRODUCTION

Augmentative and/or Alternative Communication (AAC) is an expanding area in clinical-educational, academic-scientific settings at national and inter-national levels. In fact, there has been a substantial increase in the publications on the theme, that is why it is justified, in this context, the need to carry out a historical review on the delimitation and expansion of the AAC at national and international levels in order to elucidate how the area has been systematized in theory and practice.

Aiming at giving the reader a view about some essential aspects for understanding the theme, it is deemed important to explain how AAC is conceived in this study. It is a semiotic activity comprising verbal and non-verbal signs, which mediate dialogical interactions, favoring language and knowledge appropriation of individuals suffering from severe speech impairments.

Entailing verbal (oral and written language) and non-verbal signs (facial expressions, gestures, body movements, signs in the Portuguese language, sign language, pictures, drawings, systems of pictographic and ideographic symbols), the AAC enables such manifestations when being put to work in the language, and taken as a semiotic activity/task, they are meaningful and can be interpreted. Thus, it contributes for individuals with severe speech impairments to be the authors of their discourses[1].

This study aims to analyze how AAC has been delimited while a specific area at national and inter-national levels, and which language conceptions are prevalent in this process.

METHODS

This is a bibliographic research study in documental sources such as books, published journal articles, national dissertations and theses primarily addressing such movements in the United States of America (USA), Canada and Brazil from the 1950s up to now.

Books under the title of Augmentative and Alternative Communication (AAC) were reviewed and, at national level, books and book chapters under the titles of Comunicação Suplementar e/ou Alternativa (Suplemental and/or Alternative Communication); Comunicação Ampliada e/ou Alternativa (Expanded and/or Alternative Communication); Comunicação Aumentativa e Alternativa (Augmentative and Alternative Communication); Comunicação Alternativa (Alternative Communication).

Specialized national and international periodicals on AAC and Speech-Language Therapy were identified, as follows: AAC journal, since 1985; and Revista CEFAC, since 1999; Revista Distúrbios da Comunicação, since 1997; Revista da Sociedade Brasileira de Fonoaudiologia, since 1997; Fono atual, since 1997, and Pró-Fono: a journal for scientific updating since 1997.

Other dissertation and thesis databases were also searched from Programs of Master's Degree and Doctorate in Education, Speech, Language and Hearing Sciences and Psychology, which have been carrying out research on AAC at national level, such as: Laboratory of Technology and Alternative Communication linked to the Postgraduation Program in Special Education at the State University of Rio de Janeiro (Universidade Estadual do Rio de Janeiro, UERJ, in Portuguese); Laboratory of Assistive Technology from the Department of Occupational Therapy, Federal University of Rio de Janeiro (Universidade Federal do Rio de Janeiro, UFRJ); Departament of Master's Degree and Doctorate in Experimental Psychology at the University of São Paulo (Universidade de São Paulo, USP); Postgraduation Program in Special Education at the Federal University of São Carlos (Universidade Federal de São Carlos, UFSCAR); Master's Degree and Doctoral Program in Education at the Federal University of Espírito Santo (Universidade Federal do Espírito Santo, UFES); Master's Degree in Health, Interdisciplinarity and Rehabilitation at the School of Medical Sciences, University of Campinas (Universidade de Campinas, UNICAMP); Postgraduation Program in Education at the Federal University of Rio Grande do Sul (Universidade Federal do Rio Grande do Sul, UFRGS), and Master's Degree and Doctoral Program on Communication Disorders at Tuiuti University of Paraná (Universidade Tuiuti do Paraná).

LITERATURE REVIEW

Although research studies, held in the 17th, 18th and 19th centuries, evidenced the use of non-verbal language among human beings[2,3], it can be appre-hended that AAC was significantly identified as a specific, expanding area in the United States, Canada and European countries between the late 1950s and early 1960s.

By the middle of the 20th century, two outstanding movements, which can be related to the AAC expansion were taking place: - medical/pharmacological

breakthroughs, resulting in the increase of newly-born, children and adult survival rates, which ensued permanent neurological sequelae; - actions regarding social inclusion, related to social and political movements, involving education, health and labor, mainly after the Second World War [2,3].

Studies point them out as recurring actions in Northern European Countries and in the USA in the 1950s and 1960s, associated with humanitarian initiatives, aiming at greater awareness on the rights of the so-called minority groups (including disabled individuals), highlighting the principles of equality, solidarity, the right to be different and justice[2,3].

Bound to such movements, disabled individuals' rights started to be discussed, systematized and spread by means of highly impacting documents, such as the Universal Declaration of Human Rights (UDHR), outlined by authors from several countries in 1948[4].

In the subsequent decades to the UDHR, changes involving the education of the disabled were specifically identified in the USA, primarily regarding the implementation of special education policies. Thus, it can be mentioned the school pro-integration movement, objectifying to provide better learning conditions to the so-called handicapped population [3].

In the USA, since 1975, after the bill 94-142 (*The Education for All Handicapped Children Act*) passed, the so-called integration movements of the disabled have gained strength, as they advocated equality in educational opportunities to every child[2].

In this sense, different associations were set up in the United States as well as in Europe in the 1970s, objectifying to strengthen the pro-integration movement, share and tout experiences and knowledge lived by people with different impairments in clinical and educational settings[2].

As for the impact of such initiatives to consolidate the AAC as an specific area, several associations, as well as initiatives adopted by professionals who worked with individuals suffering from cerebral palsy, and advocated "communication" as every citizen's primary right, started to systematize and implement approaches regarding the rehabilitation and social integration of individuals with severe speech impairments.

That fact fostered research on alternative languages, bringing about new intervention practices for individuals with significant speech limitations[3].

Thus, the 1970s featured a research increase on the non-verbal language manifestations *(Nonverbal Communication)*, focusing on the body language. Then,

studies on the sign language as a clinical and educational practice towards speech-impaired individuals began[5].

In the 1950s, 1960s and early 1970s, there were several attempts on alternative clinical and therapeutic interventions focusing on that population. However, the seminal impact for the delimitation of the AAC area was provided by the introduction of a system named *Blisssymbolics (BLISS)*, developed by the Australian Charles K. Bliss at a Canadian pediatric center.

Based on the Chinese ideographic writing, Bliss entails pictographic and ideographic symbols, which initially aimed to build up a system of universal writing[6].

The successful use of the Bliss system has enabled the advancement on new clinical and educational actions towards speech-disabled subjects, as well as studies and research on alternative languages since mid-1970s[6].

Grounded in experiences and accounts of clinical interventions implemented with the use of the Bliss system for people suffering from cerebral palsy, other systems were created in the 1980s and 1990s objectifying to promote speech and communication of speech-disabled subjects [2].

In the 1980s, several factors fostered the delimitation and consolidation of the AAC at national and international levels: significant increase in research related to this theme, progress in policy systematization, and implementation of measures aiming at warranting disabled people's rights, technological development of assistive resources for people suffering from several impairments.

In that period, one of the landmarks for the institution of the AAC area was ASHA (*American Speech-Language-Hearing Association*) decision to set up an ad hoc Committee on the communicative process of nonspeaking persons in 1978[2].

The official name for this area - *Augmentative and Alternative Communication* (AAC) - was proposed by Lloyd (1985) and his collaborators. The objective was to standardize a single term to be adopted in publications, thus, guidelines and recommendations were also created[7].

Lloyd and Blischak[7] point that some expressions used in English, such as *augmentative*, are not easily translated into other languages. (LLOYD; BLISCHAK, 1992, p. 104).

The term *augmentative* means *supplemental*, translated into Portuguese as supplemental to speech, and *alternative* refers to non-speaking subjects, that is why

they need an alternative language. Authors argue that there are not non-speaking subjects – even those with severe speech impairments produce some speech under certain conditions. Thus, that does not have to do with a speech alternative, but a speech supplement[8].

Terminology is quite complex, due to the difficulties in version adopted in certain idioms, which may have different meanings according to the AAC-related areas of knowledge, and the theoretical background adopted in each study[1].

However, in Brazil, some authors pointed out certain heterogeneity in the use of the term, not only in the Speech-Language Therapy, but also in the Education area[9,10], being commoner the use of the expression Supplemental and/or Alternative Communication in national periodicals of both areas since 2007[11].

Another event which contributed to the AAC system-atization was the relation established between teams of professionals from that area and the ones from the Assistive Technology (TA) area. Such a partnership resulted in the AAC incorporation to the TA area regarding the development of communication technol-ogies, such as *softwares* of synthesized speech and vocalizers (communicative resources which emit taped or synthesized voice. By pressing a symbol/button/key, or by typing a word, you can hear words and sentences[2].

The development of such technologies in the USA, according to Almirall[12], particularly in the 1980s and 1990s, resulted in the classification of AAC resources as low and high technology (regarding the electronic devices).

In the early 1980s, several symposiums and meetings were also organized by the *Blisssymbols Communication Institute* (BCI) and the *Ontario Institute for Studies in Education,* resulting in the foundation of the *International Society for Augmentative and Alternative Communication-I*SAAC), as well as in the creation of regional and international groups related to that society[2].

It is appropriate to point out that ISAAC currently congregates over fifteen associations in fifteen different countries, including Brazil. Every two years, interna-tional conferences are organized by ISAAC in different countries. Up to now, sixteen international conferences have already been held.

Evidencing the consolidation of this area, still in the 1980s, there was the creation and introduction of AAC-related disciplines in 107 institutions of higher studies in the USA, and the first doctoral and post-doctoral courses on AAC were offered by the Education Department of the Purdue University (WL, USA) in 1983 [2].

According to Hourcade *et al.*[3], still in the 1980s, an event which brought about legislation changes in the educational context was the declaration of the world year of the disabled.

In that moment, many movements organized in different European countries and in the USA advocated the need to change the prevalent integration paradigm at that time, supporting special education. Criticism against that paradigm would point inclusive education as the way to be followed. Such a perspective was grounded in the assumption that it was not enough disabled students' access to the regular school; it was also essential to provide the means for quality education[2].

In the USA, the need to implement another paradigm, as well as other procedures regarding the education of disabled students, emerged from concerns with the school performance of that population, resulting in a movement called *Regular Education Initiative*, which advocated that such a population should attend a regular class[2].

According to Zangari[2], after that initiative, govern-mental programs were implemented, offering clinical-educational services to severely speech-impaired children in the USA, Canada, United Kingdom and New Zealand.

Rehabilitation-committed health professionals were requested to offer courses on the AAC use to special education teachers from regular schools. Several inter-vention models were then developed and published as *guidelines*, whose goal was to provide clinical settings primarily with related methods and techniques[2].

During the 1990s, the paradigm of inclusive education gained strength with two world movements: the Conference of Jomtien in Thailand in 1990, and the World Conference on Special Needs Education in Spain in 1994, ensuring the Salamanca Statement.

The Salamanca Statement influenced effective actions in the American educational system, promoting practices aiming at disabled students' inclusion in regular education, as well as they fostered curricular reforms, academic organization of the schools, teachers' qualification, parents' active participation, acquisition and use of new technological resources to facilitate such students' inclusion[2].

The enrolment increase of disabled students in schools over the USA[13], along with actions performed

by American associations, influenced the formation of *National Joint Committee for the Communication Needs of Persons with Severe Disabilities in 1992*, which advocated the implementation of actions towards greater social participation and inclusion of disabled people, and the idea that communication would be the first step for social inclusion.

Concrete actions on the part of the American government enhanced research on development and acquisition of technological resources for severely disabled people, as well as the creation of research centers[14].

Apart from research related to highly technological resources and AAC, other themes were addressed in the USA, among others: language acquisition, methodological aspects on AAC research, literacy and school user of pictographic systems, clinical intervention and multiprofissional team, and social interactions and AAC users[14].

Such initiatives, held in the late 1990s, contributed to a closer articulation between information devices and AAC in the decade of 2000. The study carried out by Light and McNaughton[14] provides elements to apprehend the offer of a wide range of development techniques on AAC in the USA and Canada.

Apart from the assistive technologies for the development of communication hardware and software devices, authors evidenced significant increase on users of AAC resources, due to the expansion of professionals who worked with technologies capable of promoting communication and interaction of severely speech-impaired subjects[14].

Moreover, according to the above-mentioned authors, the use of mobile technology (tablets, I-Pads and mobile phones) with touch screen, and the development of different softwares and applications, many of them freely provided, were the primary factors for the AAC spread in the United States over the 2000s. Being cheaper than the so-called vocalized hardware, those devices quickly spread among consumers, thus, generating specific market on AAC products. Meanwhile, several sites and blogs were released so that parents and health professionals could suggest AAC applications and programs[4].

This environment of technological development was essential for the establishment of diversified proposals and practices in the educational context, including: research on literacy and use of computerized technology; creation of consumer-friendly websites e webcasts; development of curricular materials;

proposals of ongoing education in a partnership with the Federal American Teachers Association[14].

Although AAC delimitation followed unique ways in different countries, elements, which participated in its constitution, can be apprehended at international level over the past five decades. Therefore, taken the specificities of the AAC trajectory in different countries, the events and movements presented here can be considered trend managers, which had international impact in the consolidation of this area.

In order to apprehend the unique aspects, which participated in the AAC delimitation in Brazil, it should be pointed out studies of Brazilian researchers, who performed a historical review of this process.

Before proceeding with this discussion, it is worth highlighting that there are accounts on AAC practices adopted in Brazil before the 1970s, although records are scarce from that period, once those unique experiences were not published as articles or books[15].

Studies concerning the delimitation of this field point that AAC was noticeably adopted in Brazil in 1978 by the Psychology Department of the Associação Beneficente Quero-Quero (São Paulo State), founded in 1976[15]. It is recorded that the AAC was moved from this department to the Speech-Language Therapy, and the linguistic environment of the whole association got permeated by the AAC as well as the Bliss System of Communication, the first system of pictographic symbols adopted in Brazil[15].

The AAC dissemination, firstly with the expansion in the use of the Bliss system, according to Miranda[16], gained strength in the late 1970s when Special Education was institutionalized in Brazil, which resulted in the expansion of special education associations and schools, comprising 800 institutions at the end of the decade. Concomitantly, it was necessary to search for new procedures of clinical and educational interventions aiming at the rehabilitation and education of people with disabilities. The Associação Quero-Quero, one of the first to use the AAC in Brazil, became reference and was broadly requested to guide the AAC implementation in other clinical and educational settings[15].

Records highlight that in the 1980s, the Bliss System was introduced in the Associação de Pais e Amigos do Excepcional (Association of Parents and Friends of the Disabled – APAE in Portuguese) from Niteroi (Rio de Janeiro State, Brazil), and in the Sociedade Pestalozzi (Pestalozzi Association) from Rio de Janeiro (Brazil), in 1981, by the occupational therapist **Nádia Browning.** In

the late 1980s, the PIC systems – *Pictogram Ideogram Communication*, and the PCS system – *Picture Communication Symbol* were introduced in schools from São Paulo and Florianópolis[17]. Currently, the PCS system is better used, and it has been replacing the Bliss system of communication[15].

In the mid-1980s, the introduction of the AAC practice in Brazilian educational settings was consolidated with the paradigm insertion of disabled students' integration in schools. This change, as referred above, had occurred in the American educational policies a decade before.

In the 1980s, that movement fostered the search for different AAC approaches, which could enable not only the appropriation of language, but also the teaching-learning process experienced by disabled students.

The dissemination of the AAC was significant in the 1990s, in educational and clinical settings. It can be can be tracked down in specialized clinical units at special education institutions, hospitals and rehabilitation centers, primarily in São Paulo and Rio de Janeiro[15].

Another factor involved in the consolidation of the AAC in Brazil was the official translation of the PCS system to Portuguese by Mayer and Johnson Publishing Company in 1998, under the title "Guia dos Símbolos de Comunicação Pictórica", distributed by Clik Assistive Technology, at the time known as Clik Technological Resources for Education, Communication and Facilitation. With the publication of the PCS system in Brazil and, later, the sale of the Boardmaker® software, this system of pictorial signs started being the best used in clinical and educational settings at national level[13].

Also in the 1990s, there was the expansion of academic knowledge production on AAC in Brazil, carried out by active researchers, at first in three institutions of higher education as follows: USP, UNICAMP and UERJ[18].

In 1991, the first dissertation on AAC was presented, and in 1995, the first line of research was created under the name: Laboratório de Tecnologia e Comunicação Alternativa (Laboratory of Technology and Alternative Communication) - LATECA[19] within the Special Education Post-graduation Program, Universidade do Estado do Rio de Janeiro (State University of Rio de Janeiro), UERJ[18].

According to the latest search on LATECA site in 2015, about forty research works on ACC (under this reference on LATECA site) were developed in the afore-mentioned Program; among them, nineteen Master's

Degree dissertations and nine Doctoral theses, six books and eighteen articles on AAC and education, published in periodicals, as well as several articles published in annals of national and international congresses. Research themes were: characteristics of AAC instruments and resources and their users; teaching on the use of AAC by means of naturalistic teaching and responsive interaction; development of reading, writing and phonological awareness in students (AAC users); interaction between AAC users and their speaking partners; AAC use among families; AAC effects in people with aphasia; development of social skills in AAC users; features of communicative enunciations produced by children and young people by means of Alternative Communication systems in a transcultural study; ongoing education programs in human resources in order to introduce AAC in special and regular schools; initial qualification of teachers for the use of Assistive Technology and AAC resources; effects of the program to create reference Rooms of Multifunctional Resources in order to broaden the coverage to all schools in the municipality of Rio de Janeiro, Brazil.

Another team of researchers, who led part of their research on AAC, is from the Psychology Institute at Universidade de São Paulo (USP).

In general, studies and research at that higher education institution address the following themes: development of computerized systems of alternative communication (Imagoanavox); experimental research on the use of the AAC as a facilitating resource for the cognitive development[20].

As for the offer of post-graduation courses on Special Education which approach the AAC, there was an expansion at six Institutions of Higher Education during the 1990s: Universidade Federal do Rio de Janeiro, Universidade do Estado do Rio de Janeiro (UERJ), Universidade Federal do Espírito Santo (UFES), Universidade Federal de São Carlos (UFSCar), Universidade Estadual Paulista (UNESP) e Universidade Estadual de Campinas (UNICAMP)[1]. Currently, two other institutions have featured a significant number of research and productions on the AAC, as follows: Universidade Federal do Rio Grande do Norte (Federal University of Rio Grande do Norte – UFRN, in Portuguese), whose studies primarily focus on autism-related aspects and speech-language impairments; and Universidade Federal do Rio Grande do Sul (Federal University of Rio Grande do Sul – UFRGS, in Portuguese), featuring research studies

on the development of softwares for Augmentative and/or Alternative Communication systems (SCALA), aiming at the literacy of people with autism (SCALA), teaching practices for Special Education and Inclusive Schools, and teachers' qualification on Information and Communication Technologies[1].

Recently, study developed by Krüger[1] on articles published in periodicals of Speech, Language Therapy, Education and Psychology, between 1990 and October of 2015, evidences increase in the knowledge production on the AAC area, evenly distributed among several researched professional fields. During that period, 29 articles, 29 dissertations and 6 theses on the AAC in educational settings were produced.

Additionally, in the past decade, Brazilian researchers and members of the ISAAC International created a branch in Brazil, officially set up in 2006. The Research Group on Special Education – Alternative Communication from the Post-graduation Program in Education at the UERJ, organized the 1st Brazilian Congress on Alternative Communication of ISAAC/ Brazil in 2005, which resulted in the publication of two volumes of research reports and expanded abstracts[21].

Following the first, ensuing events were organized, as follows: 2nd Brazilian Congress on Alternative Communication ISAAC/BRAZIL, in May of 2007, organized by the Post-graduation Program of the School of Medical Sciences at UNICAMP; the third one, in São Paulo State in 2009 at Universidade Presbiteriana Mackenzie; the fourth, at Universidade do Estado do Rio de Janeiro in 2011; the fifth, in 2013, organized by the Post-graduation Program in Education at Universidade Federal do Rio Grande do Sul, and the last one, held in 2015, by the School of Health Sciences at UNICAMP[1].

In summary, the AAC systematization is correlated with social and cultural changes, articulated with political proposals towards education, health and human rights. Interventions emerged from sociocultural events relevant in that period, either viewing the needs of treating communication/language/speech pathologies, or viewing the social consequences from the existence of speech-impaired subjects.

It is important to point out the efforts of research teams to tout the relevance of the AAC as a supplemental and alternative resource, which may participate in the language appropriation.

Anyway, it is important to argue over one of the contradictions present in the constitution and consolidation of this area. On one hand, the delimitation of the AAC as a specific area, highlighting the importance of the use of non-verbal signs to establish relationships with speech-impaired people. On the other hand, this process has been oriented in such a way that stresses specialization and knowledge fragmentation, apart from the marketing of specific AAC products.

It is worth recognizing that there is certain speech materialization/embodiment, which can be shared, contemplating more participation of another subject by means of pictographic systems; however, this phenomenon, as well as specific issues on the importance of the interactive process for language appropriation and subjects' constitution have been scarcely stressed in AAC research studies[1,22,23].

If the recognition of the AAC contributions to the communicative process, the creation and access to technologies and resources, and the studies, still scarce on the subjects' constitution in their processes of appropriation have fostered national and international researchers' investigation, it is worth arguing whether the trend for more and more specialized knowledge and practices effectively results in an advance or not.

In fact, specific, technical knowledge without correlation to different dimensions (cultural, political, economic, psychic ones) constituting subjects, language and their appropriation processes and use, becomes restraining and limited for the systematization of actions that fully address individuals and the communities they are inserted[24].

If the AAC delimitation as a specific area has expanded human and technical resources, involved in the development and use of new technologies, this does not necessarily result in the theoretical understanding of the use of non-verbal signs/symbols, or in the systematization of significant practices for the process of language appropriation, dependable on the AAC use.

The definition of the AAC as technological resources enhancing communication and the dissemination of its use exclusively dependable on qualification proposals focusing on the identification and handling/mastering of such resources, has reduced the area to an instrument which must be approached as a technical dimension.

That technicity of the AAC was already acknowledged and stressed by Paul[25] back in 1997, when he pointed that innovative technologies, called high technology, do not imply better interaction and communication for those who use them. The author pointed out the need of new discussions on language

appropriation, outdoing the techniques while handling such resources.

Due to this fact, it can be noticed, for example, AAC knowledge on the part of speech-impaired children's parents as well as professionals in the area of Speech-Language Therapy and Education, is only correlated to the pictographic systems and high-tech apparatus[26-29].

It was possible to evidence until now, through the knowledge of its theoretical background, articulated with political, social events of each mentioned date, that the AAC has been configured as an area primarily grounded in the technical and instrumental perspective. It features the prevailing language conceptions which have influenced studies and interventions on AAC in an implied way.

It is verified that the productions are basically grounded in three main theories/approaches of language acquisition/appropriation: behaviorism, cognitivism, and often interactionism.

The behavioral approach has underpinned studies and research on AAC[30-32] focusing on ready and previously defined clinical and therapeutic actions, involving speech/language impaired subjects.

Research studies objectifying to assess the linguistic performance of children diagnosed with speech-language delay, tend to analyze it in relation to the production of syntactic structures[33]. In this context, such researchers advocate that children using the AAC will only benefit from this alternative "speech" if they are exposed to these systems of gestures and/or pictographic symbols on a repetitive, daily basis, not only during therapeutic sessions. They believe that AAC introduction must take place in a systematic way, and only after its effective use, AAC users must be submitted to programs, such as *Structured Instructional Activities* [33].

Authors, who select the behaviorism to explain the process of language appropriation in speech-impaired children, suggest that conversation partners must offer those children the most possibly helpful input, regarding their potential for language teaching and their engagement in successful reciprocal interactions[34]. The author advocates the idea that children only develop their linguistic knowledge by means of stimulus-response; in that case, positive reinforcement would be the "ideal input." He criticizes the cognitivist theory, who has Piaget as its greatest representative. According to this theory, language acquisition and development are processes which evolve from the development of thinking. To Calculator[34], good training

with positive reinforcement would lead a child to language appropriation by means of the AAC.

The cognitivist approach, focused on the developmental Psychology, has also grounded studies related to the language appropriation of severely speech-impaired subjects, AAC users. Based on this assumption, such research studies have concluded that the use of a pictographic system with children diagnosed with speech and/or language delay may enhance the development of their cognitive skills, primarily, the language. It is pointed out in these studies that there must be requirements to use the AAC, as only children in the pre-operational stage are effectively capable of using the pictographic systems[35].

Moreover, some AAC studies and clinical, educational interventions, at international level, despite being a minority, are grounded in the interactionist approach by Vygotsky. Speech-language therapists and educators, who rely on this theory to underpin their interventions with children featuring the so-called "speech and language delay", stress the importance of the ZPD (Zone of Proximal Development) during verbal interactions with adults. They suggest the introduction of the AAC by carrying out several activities focused on a certain vocabulary, adapting a pictographic or ideographic system to underpin language learning, and accepting AAC as a way of communication under a cultural perception. Such authors view speaking adults as helpers in the child development, providing situations according to the age cognitive level, including those that make use of the AAC[31].

In Brazil, most AAC-related studies are linked with the behavioral and cognitive perspective of the language. However, there are research studies grounded in the Vygotskian conception, and in the Brazilian interactionist theory. Under this perspective, Chun's studies[36] are placed, who aimed to investigate the contribution of the AAC system, Picture Communication System (PCS) to the language appropriation of a speech-impaired child. Initially, language issues were addressed related to subjects with severe articulation disabilities, stressing the use of that system as a mediation instrument favoring language development. He concluded that the AAC was an instrument of semiotic mediation, enabling higher linguistic and cognitive development, and the identity constitution of the subject as a speaker.

Similarly, Trevisor and Chun[37] proposed to investigate the use of the PCS system as an instrument of mediation by means of a case study of an eight-year-old child with neurological impairments, featuring

significant speech disabilities. According to the Vygotskian perspective, the authors highlighted the importance of the language, not only for the subjects' constitution, but also for the development of superior psychological structures. They concluded that narrative construction by means of pictographic systems of communication, with the mediation of an adult, led to the language enhancement of the researched subject.

Reily[38] grounds his theoretical assumptions in the Vygotskian approach to clarify the instruments of language significance, and the need to use the AAC systems in family and school settings of speech-disabled children.

Studies, which aim to discuss clinical issues on the relation child and language, grounded in the Brazilian interactionist theory, are also present in the scientific production on AAC at national level. Vasconcellos[28] is one of the authors who ground her practice and research in Saussure's linguistics, and in the inter-actionist approach by De Lemos. In her studies, she focuses on the clinical performance upon language towards subjects suffering from cerebral palsy, and states that language acquisition/appropriation is independent from motor impairments. The author points out that the use of pictographic and ideographic systems enables non-articulated speech to embody meanings. Therefore, it is necessary for the therapist to be in a listening position to the patients' manifestations, lending his/her voice and writing, in a way that those manifestations "get embodied in the other"[28].

From her experience at a speech-language thera-peutic clinic, rendering services to people with severe speech disabilities, Panhan[39] systematizes her practice on the clinical interpretive approach used in the language clinic. The author concludes that the AAC only works if it is articulated with the clinical interpretive approach.

Grounded in the linguistics by Saussure, as well as in the interactionism by Lemos towards language acquisition, Carnevale[40] analyzes the problematics of subjects suffering from cerebral palsy with severe speech impairments. According to the author, speech goes beyond the communicative/expressive function, and has a constitutive function. Even those subjects do not escape from its effects, because the subject is inserted in a world of language; thus, speech is actually present, even if it is not orally effected.

CONCLUSIONS

From the analysis of the AAC delimitation, while a specific area, and the investigation of the prevailing language conceptions within a historic-bibliographic analysis, firstly it was verified that such an area was in the process of constitution at least six decades before it has been claimed in research studies on the area, which stress its creation only in the 1980s.

It could be concluded that the AAC started to be identified as a specific area in 1950 at international level. In Brazil, the AAC emerges in the late 1970s.

Regarding the international context, although the AAC was identified as a specific area in Europe as well as in the USA, studies point out that the USA had greater influence in its delimitation.

It is still pointed out that studies analyzing the trajectory of the AAC constitution, featuring economic, cultural and political factors, which influenced that trajectory, primarily in clinical, educational and academic settings, occurred predominantly in the USA, but also some relevant events took place in Canada and European countries between 1960 and 2000.

The AAC consolidated as an area within human rights movements towards disabled people and, in part, intertwined with the history of the delimitation of the special and inclusive education.

It was possible to apprehend that the instrumental conception of the language and the AAC have primarily grounded the academic production on the AAC. Productions grounded in that conception have their theoretical background in two main approaches for language acquisition/appropriation: behaviorism and cognitivism.

However, at international level, there are studies under a sociohistorical perspective primarily grounded in Vygotsky's statements.

At national level, it can be verified that, although the instrumental view prevails, there are studies which advocate the constitutive and dialogical aspect of the language and the AAC, most of them based on the interactionist conception of the language, and others are founded in the enunciative-discursive and sociohis-torical perspective.

Therefore, from the results apprehended in this study, it is evident that when the process of language acquisition/appropriation and the knowledge of people with significant speech disabilities are addressed, the AAC is recognized as the language type which favors dialogical interactions being established between

family, clinician, teacher and those people with severe speech impairments.

However, by means of this bibliographic review, it was possible to evidence the prevalence of a technical and instrumental conception towards the AAC by authors who are adopted as international reference, mostly some American ones, and some national authors as well.

Once it was verified that the instrumental approach of the AAC and language was significant for the sociohistorical delimitation of the area, the current study urges future research to create new approaches. Among them, clinical, educational and research practices grounded in a constitutive, dialogical perspective of the language, which conceives the AAC as a sign and, therefore, having a semiotic function.

It is also advocated the idea that the AAC should not be considered and organized as a specialized area, but it must entail and correlate to different disciplines from the health and education fields which, concerned with the language, consider the historicity and complexity of the involved phenomena.

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ERRATUM

In this article, "Delimitation of the area named augmentative and alternative communication (AAC)" with DOI number: 10.1590/1982-021620171927316, published in the journal Revista Cefac, 19(2):265-276, there was no mention of two authors:

Where it was:

Simone Infingardi Krüger[1]
Ana Paula Berberian[1]
Scheilla Maria Orlosqui Cavalcante da Silva[1]

Read:

Simone Infingardi Krüger[1]
Ana Paula Berberian[1]
Scheilla Maria Orlosqui Cavalcante da Silva[1]
Ana Cristina Guarinello[1]
Giselle Athayde Massi[1]