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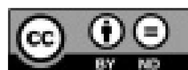

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Implementing Augmentative and Alternative Communication at a Rehabilitation & Educational Center (Specialists' Interaction with the Family)

Wdrażanie komunikacji alternatywnej i wspomagającej w Ośrodku Rehabilitacyjno-Edukacyjnym (pole współpracy z rodziną)

KEYWORDS

child with severe intellectual disability, augmentative and alternative communication, educational evaluation, parental cooperation with the school, Rehabilitation & Education Center

ABSTRACT

Close cooperation between the home environment and the educational setting is an important element of the effectiveness of augmentative and alternative communication (AAC). The author's aim was to examine the quality of this cooperation using the example (case study) of one of Poland's Rehabilitation and Education Centers (OREs) in Wrocław. The author carried out an evaluation study in parallel with the center's internal evaluation. She used a survey addressed to teachers, specialists, and parents, as well as individual conversations, document analysis, and observation. The practical effect of the evaluation study was the formulation of detailed recommendations for the center. The author stated that the effectiveness of implementing AAC in work with children and young people—OREs' participants—is low, mainly due to the inharmonious cooperation between the families and the educational center. The second important factor is the uneven use of AAC in both settings. Teachers and specialists use almost all situations during the day to establish communication with the ORE participants—they employ a variety of communication methods and utilize the most modern devices—while parents, who have difficulties adequately using AAC at home, point to the high costs

of the communication devices and express a conviction that the ORE is adequately fulfilling the AAC tasks, which releases the parents from the obligation to develop communication at home.

SŁOWA KLUCZE

dziecko z głęboką niepełnosprawnością intelektualną, komunikacja alternatywna i wspomagająca, edukacyjne badania ewaluacyjne, współpraca, rodziców ze szkołą, Ośrodek Rehabilitacyjno-Edukacyjny

ABSTRAKT

Ścisła współpraca środowiska domowego ze środowiskiem edukacyjnym jest istotnym elementem efektywności wdrażania alternatywnej i wspomagającej komunikacji (AAC). Celem autorki było zbadanie jakości tej współpracy na przykładzie (*case study*) jednego z wrocławskich Ośrodków Rehabilitacyjno-Edukacyjnych (ORE). Autorka przeprowadziła badania ewaluacyjne równolegle z wewnętrzną ewaluacją ośrodka. Posłużyła się ankietą adresowaną do nauczycieli i specjalistów oraz rodziców, rozmowami indywidualnymi, analizą dokumentów i obserwacją. Praktycznym efektem badań ewaluacyjnych było opracowanie szczegółowych rekomendacji dla ośrodka. Autorka stwierdziła, że efektywność wdrażania AAC w odniesieniu do dzieci i młodzieży – uczestników ORE – jest niska, głównie ze względu nieharmonijną współpracę środowiska domowego i środowiska edukacyjnego. Drugim ważnym czynnikiem jest nierównomierne korzystanie z AAC w obu środowiskach. Nauczyciele i specjaliści wykorzystują niemal wszystkie sytuacje w ciągu dnia, aby nawiązywać relację komunikacyjną z uczestnikami ORE, stosują różnorodne sposoby komunikacji, posługują się najnowocześniejszym urządzeniami, natomiast rodzice mają trudności z optymalnym wdrażaniem AAC w środowisku domowym, wskazując na wysokie koszty urządzeń do komunikacji oraz wyrażając przekonanie, że ORE wypełnia adekwatnie zadania z zakresu AAC, co zwalnia ich z obowiązku rozwijania komunikacji w domu.

AAC Intervention

In recent years there has been a remarkable development of augmentative and alternative communication (AAC) in Poland, in terms of theory (proposing to grant AAC the status of a language—see Kochanowicz 2012: 85), of the practical use of various methods of communication and communication aids and adapting them to the individual needs and abilities of users, of popularizing methodological and technological knowledge, training specialists, developing scientific and research tools, creating expert and opinion-forming teams, and formulating proposals for global solutions (Loebel 2006: 30; Smyczek et al. 2006). As in Western countries, Poland uses technologically advanced communication aids (breath-activated, touch systems, eye tracking, brain-computer interfaces [BCI] or imaging methods to detect and activate brain signals) (Elsahar et al. 2019: 17; Kochanowicz 2019: 109–119).

Having said that, however, there is rarely any reflection on the collaboration efforts between teachers, specialists, and parents in the implementation of AAC. Their cooperation seems to be indispensable for AAC to be effective, i.e., for the good of the child, who cannot develop their communication skills if they function in two dichotomous microsystems: the education center and their home. Therefore, many teachers and specialists, as well as parents, are striving to ensure that an AAC user who is, for example, learning to use graphic symbols for an object, can use the same symbol in a similar situation at home (the generalization of skills outside an educational setting). Only then, as researchers and practitioners agree, can we assume that communication barriers caused by various external factors (environmental or practical barriers) or internal factors (barriers of access or of opportunities) have been overcome (Grycman, Kaczmarek 2014: 34–35).

In an article from 2015, presenting their research on early intervention and augmentative and alternative communication, researchers from Georgia State University in Atlanta also drew attention to the fundamental role of the interactions between teachers, specialists, and parents. Their study was published 30 years after the launch of the journal *Augmentative and Alternative Communication*, in which researchers from around the world publish findings on AAC for a wider readership (Romski et al. 2015). Interdisciplinary research has dispelled all doubts as to the legitimacy of introducing AAC and organizing AAC interventions (i.e., personalized and targeted practice aimed to address gaps in the users' communication competences) (Beukelman et al. 2015: 235) at an early developmental stage of a child with complex communication needs/disorders (Grycman 2015: 5; Romski et al. 2015: 2).

The researchers from Atlanta, after performing a meta-analysis of scientific data from 143 articles, drew several important conclusions (Romski et al. 2015: 16). First and foremost, an AAC intervention not only does not impede speech production in the early stages of language competence, but stimulates it. This discovery should be widely disseminated, even outside the AAC community. Secondly, most of the articles on AAC interventions that they analyzed examined tools for developing a child's speech and the AAC language (graphic symbols and manual symbols). It was found that that substitute communication systems, other than speech, are created for some children, while better conditions for learning speech are used for others, if this process is regarded as incomplete. This two-way impact—supporting speech development and introducing an alternative language at the same time, the merging of the two methods—is essential for long-term success in communication. Thirdly, the family plays an important role in boosting the language skills of a child with complex communication needs. Research has shown that parents and other communication partners not only are able to use the AAC strategy, but that their participation in the successful use of AAC techniques is critical (Romski et al. 2015: 17).

Since the use of AAC cannot succeed without interactions with family members, I have decided to explore such interactions based on one specific example. My case study focuses on the AAC cooperation between the Rehabilitation and Educational Center (ORE) and the parents of the participants of rehabilitation and educational sessions. In the 2018–19 school year, I became the coordinator of a team (consisting of the director of the center, a speech therapist, and two rehabilitation and educational teachers), whose aim was to conduct an internal evaluation in one of the Educational Development Centers in Wrocław. Self-evaluation has been made possible relatively recently, as part of the pedagogical supervision system defined in the Regulation of the Ministry of National Education of August 25, 2017 on Pedagogical Supervision (Journal of Laws 2017, item 1658, § 22–24).

I am aware that there is a fundamental difference between an internal evaluation and a scientific evaluation study, as the purpose of the former is primarily to provide useful information to the people responsible for an educational institution and to help them plan practical activities, while scientific evaluation studies aim to understand the educational reality and to expand pedagogical knowledge (Fitzpatrick et al. 2011: 9–10). My activities in the ORE were therefore of a dual nature: coordinating the internal evaluation and conducting an evaluation study designed to gain insight into an important educational problem. I was inspired by Hans-Georg Gadamer, who wrote that all understanding is always something more than just recreating someone else's point of view (Gadamer 2007: 510).

Research Perspective

In my research, I used the case study method. According to Robert Yin, it is an empirical study of specific phenomena happening here and now, analyzed in the real-world context (Yin 2018: 13). Helen Simons writes that the purpose of such research is to obtain a deeper understanding of an issue, program, policy, institution, or system, and also to learn how to improve them and to take action for the common good (Simons 2009: 21). Henryk Mizerek argues that the feature which distinguishes a case study from other research methods is the focus of the researcher's attention (description and explanation) on what is special, exceptional, and unique in the studied case (which may be a program, institution, person, or group of people) and the discovery of the principles that determine this uniqueness and singleness (Mizerek 2017: 13). According to Mizerek, a case study

> does not … mean abandoning the use of quantitative data collection and measurement methods. The starting point ... is the question of what the examined case is, what is its nature and character, what to do to make sure that the research outcomes fully reflect its uniqueness (Mizerek 2017: 13).

I have structured the case study as an evaluation study for assessing the value of a program or project (Simons 2009). Together with the team, I identified all the participants of the evaluation; we defined its basic goals, established the rules of team cooperation, and developed a plan of the evaluation activities and their implementation and popularization and for monitoring the effects; we specified the method of sharing experiences from the interactions between the evaluation participants and decided how the report should be presented to the Pedagogical Council and the parents. These steps are in line with the developmental evaluation model developed by the prominent American evaluation consultant Michael Quinn Patton (Jaskuła 2012: 93).

The internal evaluation at the ORE lasted from October 5, 2018 to August 27, 2019. The purpose was to gather information on the use of AAC methods at the center and in the home setting, as well as to evaluate the effectiveness of AAC and to recommend activities for improving the communication skills of participants of rehabilitation and educational sessions.

In the educational setting, the study group included two directors of the center, 10 teachers from rehabilitation and educational teams (oligophrenopedagogues), and 7 specialists: a psychologist, a typhlo-pedagogue, 3 speech therapists, a hand therapist, and a catechist. We distributed 19 questionnaires to the participants, of which 16 were handed back to us. In the home setting, the study covered 31 parents of children from rehabilitation and educational groups (who were mainly being treated with the Pëto method of guided learning). We analyzed the 15 completed questionnaires. We made a comprehensive assessment of the effectiveness and conditions for introducing AAC communication in the center and in the home on the basis of the questionnaires, documentation analysis, and observation of sessions at the ORE. In addition, interviews with teachers and parents were important, because, as Gadamer wrote, conversations help overcome the temporal, cultural, or psychological distance that separates us from another person:

> Conversation is a process of coming to an understanding. Thus, it belongs to every true conversation that each person opens himself to the other, truly accepts his point of view as being valid, and transposes himself into the other to such an extent that he understands not the particular individual, but what he says. (Gadamer 2007: 387)

The main research problem that I formulated in the two parallel evaluation studies was the effectiveness of introducing AAC in OREs and in the homes of participants of rehabilitation and educational programs, i.e., children and adolescents with a medically certified severe intellectual disability.

The supporting research questions were as follows: 1) Do the participants of rehabilitation and educational activities communicate using AAC methods, and if so, to

what extent and in what situations? 2) What communication aids and AAC technologies can/do ORE patients use? 3) What is the availability of communication aids and AAC technologies in the home? 4) What are the forms of cooperation between families and specialists in the implementation of AAC?

The starting point for the preparation of the questions for the survey was the opinion expressed by teachers and specialists during the interviews that only some patients have incorporated the AAC communication system at home, and that only one teacher was convinced of its effectiveness. In turn, all parents maintained that they had implemented the AAC communication system in their homes. We decided to verify this by means of contingency questions (ORE vs. the home) about AAC communication.

Results

The first instruction in the questionnaire, which was addressed to both teachers/specialists and parents, was to identify all situations in which the AAC system is used in the ORE. The responses are presented in Table 1.

Table 1. AAC Situations in the Educational Development Center (ORE)

Situations where AAC is used in the ORE	Answers of teachers and specialists	Parents' answers
Greeting ritual	16	15
Physical and educational activities according to Pëto's Guided Learning	13	10
Feeding therapy	14	11
Farewell ritual	15	15
Speech therapy sessions	10	15
Celebrations and school events	15	13
Trips to the sensory garden	13	10
Trips to a public space (cafe, zoo, museums, theater, etc.)	14	9
The child's own activity	16	6
Other	Sensory integration classes, art therapy, hand therapy, thematic classes, or individual classes	–

The responses from the two groups varied somewhat, because although parents generally expressed a belief that the AAC system was incorporated at the ORE itself, few thought that it was also used during the child's own activity or trips to the sensory garden or public spaces. All parents indicated that speech therapy was the place where AAC is applied, while teachers and specialists gave less generalized answers because they know that one of the Center's speech therapists works exclusively according to the Castillo-Morales concept.

The second question meant for both groups concerned the parents' use of communication situations at home; the responses are presented in Table 2.

Table 2. AAC Communication Situations in the Home

Situations where AAC is used in the family home	**Answers of teachers and specialists**	**Parents' answers**
When spending free time (playing, watching TV, walking, or shopping)	8	14
During a meal (e.g., choosing a meal or messages such as "enough" or "more")	11	10
When getting dressed (e.g., choosing an outfit)	8	10
During the bathroom routine (e.g. "What do you need to brush your teeth?")	4	8
In every possible situation	6	9
Never	1	0

According to teachers and specialists, parents most often communicate with their child during a meal. The parents confirmed this, but added that spending free time together with their child is an equally common occasion for communication. One teacher was extremely pessimistic about parents' use of AAC in the home setting.

With the help of the next question, we tried to find out what types of AAC communication are used in the ORE according to the declarations of teachers and specialists and the knowledge of parents on this subject. The answers of both groups are presented in Table 3.

Table 3. Types of Communication in the Educational Development Center (ORE)

Types of communication in the Educational Development Center	Answers of teachers and specialists	Parents' answers
Words (the children's names or days of the week)	16	11
Graphic symbols (pictures): the Picture Communication System (PCS)	16	15
Manual signs (gestures) – the MACATON vocabulary	16	9
Pictures	15	13
Objects (concrete items)	16	11
Affective reactions (interpreting emotions, e.g., from facial expressions and bodily movements)	16	9
Physiological responses (interpreting physiological responses, such as sweating)	16	5
Other	Signal stimuli	–

We were surprised that only a few parents expressed the opinion that their children's physiological reactions, affective reactions, or manual signs (gestures) are interpreted as messages at the ORE, while all teachers declared that they interpret them as such.

The purpose of the next question was to discover what aids and communication devices the parents used at home. We posed the same question to the teachers and specialists to compare their responses with those of the parents. The responses are presented in Table 4.

Table 4. Types of AAC Communication in the Home

Types of communication in the family home	Answers of teachers and specialists	Parents' answers
Words (the children's names or days of the week)	0	2
Graphic symbols (pictures): the Picture Communication System (PCS)	4	10
Manual signs (gestures) – the MACATON vocabulary	4	6
Pictures	4	8
Objects (concrete items)	6	12

Types of communication in the family home	Answers of teachers and specialists	Parents' answers
Affective reactions (interpreting emotions, e.g., from facial expressions and bodily movements)	12	13
Physiological responses (interpreting physiological responses, such as sweating)	16	8
Other	–	–

The parents' responses show that when communicating with their child, they most often interpret their affective reactions and objects (concrete items). Some use graphic symbols and photos, while only two parents use inscriptions (the child's name). The teachers and specialists believed that parents mainly interpret physiological and affective responses in terms of communication.

The next questions were related to AAC aids and communication tools used at the ORE. We asked both groups, of teachers/specialists and of parents. Their answers are in Table 5.

Table 5. AAC Aids and Communication Tools in the Educational Development Center (ORE)

Communication aids and tools used in the ORE	Answers of teachers and specialists	Parents' answers
Communicators: e.g., Big Mack, step by step, QuickTalker, iTalk2	16	15
iPAD	11	5
PCEye Mini Tobii Dynavox eye tracker	8	5
E-tran board	16	3
Paper communication boards	14	11
Dynamic communication boards (on the computer screen)	8	6
Books for communication	16	11
Single graphic symbol (Picture Communication Symbols)	16	12
The child's communication passport	16	10
Books for shared reading	16	8
Objects (concrete items)	16	10

The ORE teachers and specialists use a wide variety of aids and communication tools, but they use eye trackers and dynamic tables (on the computer screen) less often. The parents, however, believed that the ORE used E-tran boards the least frequently and iPADs rarely, which is not only contrary to the responses of the ORE staff, but also to reality, because the ORE has many devices of this type (iPADs).

The next question was designed to help us determine the scope of the use of aids and communication devices in the home according to the declarations of parents and the conjectures of teachers and specialists on this subject. The responses from representatives of both groups are presented in Table 6.

Table 6. AAC Aids and Communication Tools in the Home

Communication aids and tools used in the family home	**Answers of teachers and specialists**	**Parents' answers**
Communicators: e.g., Big Mack, step by step, QuickTalker, iTalk2	10	2
iPAD	3	2
PCEye Mini Tobii Dynavox eye tracker	0	0
E-tran board	4	2
Paper communication boards	7	5
Dynamic communication boards (on the computer screen)	0	2
Books for communication	6	5
Single graphic symbol (Picture Communication Symbols)	12	8
The child's communication passport	6	2
Books for shared reading	5	5
Objects (concrete items)	10	11

According to the teachers and specialists, parents most often use single graphic symbols (PCSs) and objects (concrete items), which was corroborated by the parents' answers. On the other hand, the largest discrepancy in the answers concerns communicators, which are used by much fewer parents at home than the teachers and specialists believed.

Inspired by Gadamer's guideline that an encounter in a common world of understanding is made through conversation (Gadamer 2007: 521), we asked parents in individual interviews about the use of instant messaging at home. We heard that the high price of the technologically advanced AAC communication aids is a major problem for them. In turn, the teachers and specialists remarked in individual interviews

that many parents exhibit gaps in the knowledge, skills, and motivation needed to use AAC communication correctly, and these gaps do not necessarily result from financial difficulties (many parents own communicators). Thus, they confirmed the reports of other practitioners:

> As shown by the practice of experienced centers, it is extremely difficult to instruct families of non-speaking children in school settings. Neither meetings with parents, nor even the annual meetings of teachers in the children's homes provide adequate opportunities for families to learn to use the individual communication system of a non-speaking child. (Smyczek et al. 2006: 12).

The last area of investigation was the cooperation of parents and the ORE in implementing AAC communication. The answers indicated by the teachers/specialists and the parents are in Table 7.

Table 7. Forms of Cooperation Between the Educational Development Center (ORE) and the Parents

Forms of cooperation between the ORE and the parents	**Answers of teachers and specialists**	**Parents' answers**
Individual consultations with the educator	15	12
Individual consultations with specialists (e.g., with a speech therapist)	15	11
Printing PCS graphic symbols	10	10
Consultations on creating/updating a book for communication	9	6
Consultation on the selection of communicators (communication devices)	12	6
Open classes	12	3
Tutorial, e.g., on teaching gestures/teaching to use the food selection board, etc.	10	1

The most common form of collaboration indicated by both groups of respondents is individual consultations of parents with teachers and specialists, often about the choice of communicators. It is surprising that only one parent mentioned receiving instructions for teaching gestures or using the food selection board, while the majority of the teaching staff declared that they provide such instructions. In general, the parents are more critical of their relationship with the ORE in the surveys, but in individual conversations the situation is reversed.

The interviews did not reveal any problems in the exchange of information between the teachers/specialists and the parents on the communication needs and

progress of the children. The parents confirmed that they regularly received information on AAC communication during the general meetings, meetings with educators, and sessions with the therapeutic team. When asked what they would change in terms of implementing and developing AAC communication and cooperation between the Educational Development Center and the family, they replied, "basically nothing. The cooperation between my family and the center suits me." "Everything is OK." "There is no need to change." "I wouldn't change anything. The center carries out the Introduction to AAC program in a very professional manner. The teacher and speech therapist work with the parents, devoting a lot of time to explaining any questions and doubts that may arise."

By contrast, the teachers and specialists were more critical. They demanded to "exclude parents from therapeutic teams, because individual meetings in sessions should serve that purpose." They signaled "the need to meet the AAC team," for "more frequent meetings in AAC teams," "more individual meetings with parents," "recording communication situations," and "analysis of recordings in a group of specialists." They proposed "standardization of AAC procedures and of transferring the procedures to the home setting," "more one-to-one meetings, developing short and uniform procedures for using AAC," "more activities open to parents who are willing to cooperate," and "more emphasis on using AAC in the common room during afternoon activities (coaching the tutors to use AAC) to ensure continuity and consistency." They also noticed the limited competence of parents in using AAC at home: "parents' attitudes should be changed so that they become willing to continue our activities at home;" "motivating parents to arrange communication situations at home;" "higher demands from the parents." Other constructive suggestions from teachers were to set up an "AAC equipment rental (obtaining funding from the ORE from a targeted program)" and "to organize a mutual exchange of recordings of communication situations."

Conclusions and Recommendations

While researchers and practitioners report profound, positive changes in the education of children with complex communication needs, many of these children are deprived of the opportunity to acquire the basic functional skill of communicating at the level of their cognitive, sensory, and motor skills. In such a case, their participation in their own education may be severely restricted, and the individual exercise program may be incomplete and inadequate to the child's potential (Kochanowicz 2012: 75).

A measurable effect of the internal evaluation was the development of recommendations for OREs: to organize training for the parents of young AAC communicators, to provide parents with the help and communication devices available in the center,

to set up an AAC equipment rental program, or to train the Pedagogical Council in the use of eye tracking.

From the perspective of an interpretative researcher, however, I cannot stop at recommendations, but should attempt to understand the determinants relevant to the issue under study, i.e., the effectiveness of AAC implementation for ORE participants. Previously, research questions have rarely been formulated in such a way as to compare what teachers think about their therapeutic work on introducing AAC communication, and about the participation and collaboration of the families, with what parents think about their own contribution and the teachers' efforts. There is a discrepancy between the positions of the parents and that of the teachers/specialists.

The teachers and specialists take advantage of almost every situation during the day to establish a communication relationship and to use various methods of communication and the most modern devices; therefore, the parents exempt themselves from this obligation, expressing the conviction that the center fulfills the task of using AAC so well that they themselves do not see the need to radically change their attitude in the family setting (only two parents declared that they used instant messaging at home!). Just like many researchers have reported, (Chrzanowska 2020: 240) some parents noticed that AAC can play a helpful role in communicating with their children. At the same time, they argue that the range of AAC applications is limited due to their children's low level of cognitive skills.

At this point it should be noted that among the children and adolescents with a certificate of the need for rehabilitation and educational program it is possible to distinguish those who communicate with the use of verbal speech, have a sense of agency and a communicative intention, those who communicate only with the use of gestures, and those who communicate by means of physiological and affective reactions, facial signals, and inarticulate sounds (Marcinkowska 2013: 125–127). Therefore, a certificate of the need for rehabilitation is not always tantamount to very low communicative abilities, but for parents the fact that their child has such a certificate is important and influences their perception of their child's communication capabilities and needs.

Teachers perceive the child as a user of AAC and, depending on the diagnosis and their level of communication, they set goals for them: from enhancing behavioral processes leading to perceiving a person as a tool for satisfying their needs, through developing a communicative intention, to increasing the frequency of using graphic and manual symbols or vocalization for communication purposes. In further stages of using AAC, the group of communication partners gradually expands, the frequency and duration of one-on-one dialogues increases, and the number of communication aids using highly advanced technologies grows.

The model which promotes a harmonious cooperation of the educational institution and the family home in the implementation of AAC communication assumes that teachers and parents carry out self-reflection, analyze their own actions, and—most of all—work together. As argued by the researchers from Atlanta, the participation of parents in the effective incorporation of AAC techniques is necessary and crucial, as it determines the success of AAC intervention.

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