

Translated Bookchapter:

Boenisch, Jens & Sachse, Stefanie K. (2020):

Kernvokabular – Bedeutung für den Sprachgebrauch.

In Boenisch, Jens & Sachse, Stefanie K. (Eds.). Kompendium

Unterstützte Kommunikation. Stuttgart: Kohlhammer, p. 108 – 116.



Core vocabulary – importance for daily communication¹

Jens Boenisch, Stefanie K. Sachse

To explore the communicative situation of students with physical disabilities and little to no functional speech, a nationwide study was conducted in Germany from 2001-2002. Results indicated that augmentative and alternative communication (AAC) aids were largely unused, despite the wide provision of AAC aids for these students – both children and adolescents. Only few students used their communication boards (4%) or speech output devices (8%) for daily communication. Most students predominantly used forms of unaided communication, such as facial expressions, gestures, vocalizations, or eye movements (Boenisch 2003 & 2009). The results of this study raised the question why the communication aids were not used in everyday life? International research on language use and vocabulary selection in AAC was reviewed: What kind of vocabulary is needed to enable daily communication?

1. Vocabulary selection

Vocabulary selection has been a topic of the professional AAC discourse from the start (see Beukelman et al. 1989). Adequate vocabulary enables both successful daily communication and the development of the communicative competence of the person

using AAC. Which words make this possible? The analysis of the vocabulary used by children, adolescents, and adults provide important insights.

Language analyses – insights into vocabulary used by speaking children

Language analyses provide information about the frequency of the usage of words. Boenisch et al. (2007) analyzed the vocabulary of speaking children with and without physical disabilities.

Kindergarten Study: This study examined the vocabulary used by 46 children with physical disabilities and 25 children without disabilities, aged 2.3 - 7.7 years in different play contexts (e.g., dolls house) (Boenisch et al. 2007). The situations were captured on video, the utterances of both groups of children were transcribed and analyzed (e.g., number of different words, frequency of words used, word classes used). Overlaps in high frequency words of both groups would support the hypothesis that these words are acquired independent of a physical impairment. If that is the case – these words should be considered when selecting vocabulary for AAC systems.

A total of 55,500 words were recorded and analyzed. Each group used approximately 1,600 different words.

¹ Many thanks to Franziska Boenisch for the translation and Prof. Susan Balandin for the final revision!

First results: When comparing the most frequently used words of the two groups studied, there was almost no difference between the 100 and even the 200 most frequently used words. The frequency of the word usage was also similar: Comparatively few different words made up a high percentage of words used in spoken language. The 100 most frequently used words made up 66 % of all spoken words. The 200 most frequently used words made up 80% of all spoken words. In other words, out of the 1,600 different words used, 200 were used all the time (e.g., *yes, a/an, that, there*: more than 1,000 times). The

remaining 1,400 were used infrequently – often just once or twice (e.g., *occupied, visit, work*).

It was noticeable that only 20 % of the 100 most frequently used words were nouns – this was unexpected as it had been assumed that more nouns would be used in a play context (e.g., *doll, bed, room, baby*). Overall, relatively few content words (i.e., nouns, complete verbs, adjectives) were used. On the contrary, the majority of the most frequently used words were function words such as pronouns, auxiliary verbs, conjunctions, adverb (see table 1). More content words occurred after the 200 mark, with a relatively low frequency of use.

Table 1. The 50 most frequently spoken words of children with physical disabilities
(n = 46; 3-7 years; 23,000 words)

Pronouns	(Auxiliary) Verbs	Adjectives	Adverbs	Prepositions
ich, du, wir, man, es, mein <i>I, you, we, one, it, my</i>	sein, haben, können, machen, kommen, gucken, müssen, wissen <i>to be, have, can, do/make, come, look, need to/must, know</i>		da, hier, nicht, noch, jetzt, so, auch, rein, denn, hin, doch, zu, dann <i>there, here, not, still/even/else, now/yet, so, too/also, in/into, just because, over, however/but, to, then</i>	mit, auf, in <i>with, on, in</i>
Conjunctions	Articles	Interjections	Interrogatives	Nouns
und, aber <i>and, but</i>	ein, das, die, der, den <i>a, that, the</i>	ja, nein, mal, oh, mmh, ah <i>yes, no, times, oh, mmh, ah</i>	was, wo <i>what, where</i>	Auto, Bett, Papa, Mama, Ball <i>car, bed, dad, mum, ball</i>

Many combinations are possible with these 50 words (e.g., *I am, and you? Where else? I do! Not now. Come on.*).

The data shows that a small number of words is used frequently. What is special about these words is their appearance in almost every sentence, regardless of whether the speaker has a physical disability or not.

The most frequently used words of a language are also known as ‘core vocabulary’ (see Baker et al. 2000;

Beukelman et al. 1989; Balandin & Iacono, 1999; Banajee et al. 2003; Trembath et al. 2007). Core vocabulary refers to the approximately 200 most frequently used words of a language. It makes up 80 % of spoken language and is used flexibly, independent of personal living circumstances and topic. It is comprised of mainly of function words, which are not specific to a situation/ topic (pronouns, auxiliary verbs, adverbs, prepositions, articles, conjunctions), and used in combination with content words (nouns, verbs, adjectives).

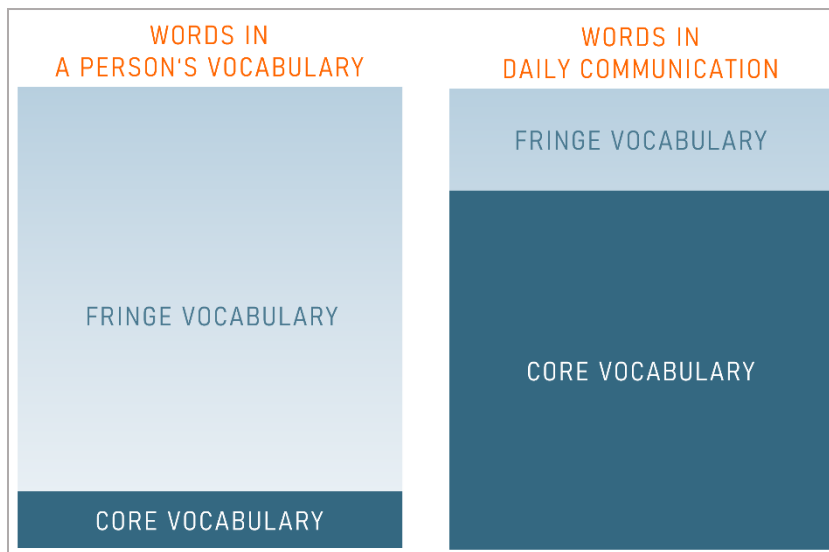


Fig. 1: Core and fringe vocabulary in a person's vocabulary and in daily communication.

For reference: a speaking child starting primary school uses approximately 5,000 words (active vocabulary, left). Out of those 5,000 words approx. 200 are the core vocabulary, which makes up to 80 % in daily communication (right).

'Fringe vocabulary' refers to words which are used less frequently. It comprises of mostly content words. These are necessary to exchange views about different topics and to use decontextualized language (e.g., car, refuel, traffic jam, fasten seat belt).

School Study (Boenisch 2014): This study aimed to answer the following questions: What vocabulary students with cognitive impairments (CI) use? Do they use the same core vocabulary or does this group use more content words than the control group? To

answer these questions, the vocabulary used by students with CI (8 – 16 years, n = 44) was compared to the vocabulary of students in general education (n = 58). Results indicated that students with CI used the same core vocabulary as the control group. When comparing the 200 most frequently used words of both groups, the wordlists are almost identical. Additionally, there were almost no differences in the use of different word classes or in the frequency curves (see Fig. 2, and for more detail - Boenisch 2014).

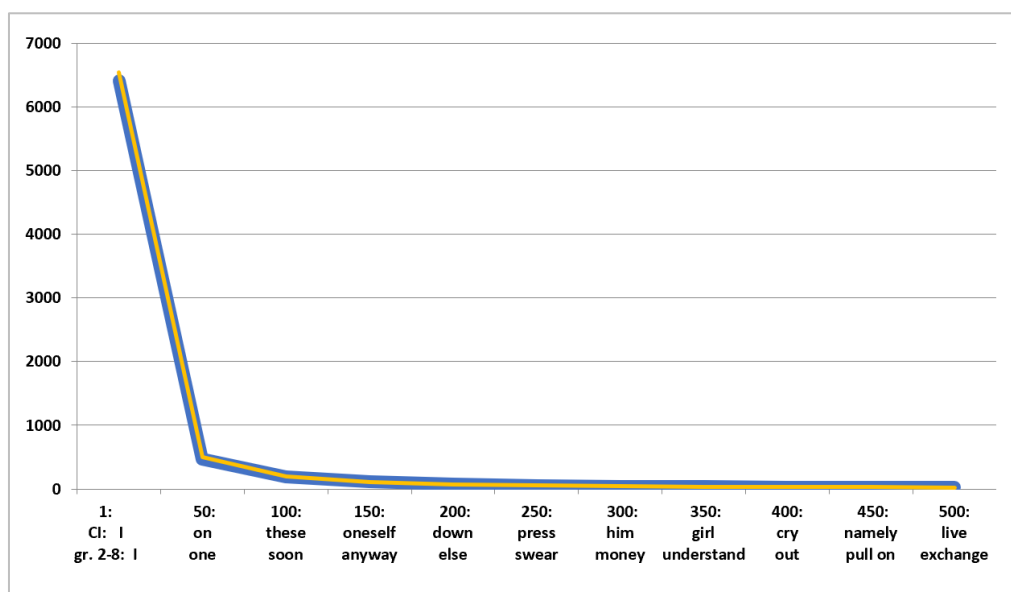


Fig. 2: Frequency of the top 500 words of students with cognitive impairments (CI: grades 2-10, n = 125,454 words, blue line), students without disability (grades 2-8, n = 125,607 words, yellow line)

These results are in line with international studies – i.e. by Baker et al. (2000), Balandin and Iacono (1999), but also studies exploring the language usage/core vocabulary of bilingual children (see Robillard et al. 2014), of students with English as a second language (see Boenisch & Soto 2015), and of the use of core vocabulary in free writing (see Clendon & Erickson 2008). It can be noted that core vocabulary serves as a universal vocabulary regardless of the topic, language, a person's age, or the presence/absence of a disability. "Core vocabularies are small in size and do not change across environments or between individuals" (Banajee et al. 2003, p. 68).

Core vocabulary in AAC

One of the outcomes of the German studies was a list with the German core vocabulary. A search for these words on the infrequently used AAC devices revealed that core vocabulary was rarely present. However, without core vocabulary flexible communication is hardly possible. Core vocabulary, which is predominantly not context-specific, allows flexible communication in a variety of situations, despite consisting of relatively few words: (e.g., *Me too; Not you – I will do that; Can I have that? I can do that, too*). In everyday life, contexts are typically determined by the current situation. This implies that only a few content words are needed to communicate effectively. Core vocabulary is essential for successful communication and to experience the feeling of 'I can join in on a conversation'. These few words play an important role in successful daily communication using AAC.

These findings are contrary to traditional concepts often used in speech and language therapy as well as teaching foreign languages (e.g., English, French, German as second language). Content words dominate the traditional methods (see Vilbusch 2018). Even in AAC, the focus on content words was prevalent for many years. Therefore, communication was often limited and topic specific (e.g., selecting food, personal interests). Words such as *pizza, tomato, onion, cheese, eating, delicious*, hardly

facilitate active participation in conversations while preparing and eating the pizza. Rather, phrases such as '*I want more, too. Excuse me? Can you turn that off? That is not true*' are not only useful in this situation but also in many others.

Furthermore, vocabulary consisting mostly of content words limit the possibilities of expression. Nouns enable labelling or can be used to demand something, but they do not support the use of a range of communicative functions (e.g., negotiating, reasoning, confirming).

Based on this, one can conclude what type of vocabulary is needed on communication aids for successful daily communication: a combination of core and fringe vocabulary. While core vocabulary can be selected from the wordlist, the selection of fringe vocabulary should take personal interests into account.

The challenge arising from these findings was how to provide core vocabulary on the communication devices. That is, core vocabulary should not be 'randomly' added to communication devices (e.g., on an additional page with 'small words'), rather, it should be possible to combine core and fringe vocabulary flexibly, as in actual usage.

2. Cologne Communication Materials with core and fringe vocabulary

One way to arrange core and fringe vocabulary is provided in the Cologne Communication Materials (see Boenisch et al. 2007; Boenisch 2017): Core vocabulary is arranged like a frame around flip-pages with topic-related fringe vocabulary. This way, core and fringe vocabulary can be combined flexibly (see Fig. 3 & 4).

During the development of the materials vocabulary analyses were considered, but also other researchers' views on the design of communication displays (e.g., Erickson & Clendon 2009; Beukelman et al. 1989; Murray & Goldbart 2009; Zangari & van Tatenhove 2009). Appropriate arrangement can support daily communication and language development of people who use

AAC. For example, word classes are arranged in a way that support simple sentence structures from left to right, in the reading direction of languages such as German or English. Additionally, grammatical forms (e.g., plural) are provided and word classes are color-coded, based on the speech development materials of Maria Montessori. Boards of varying complexity but with a uniform structure were developed to ensure consistency regarding the positions of the symbols to support the development of the person's vocabulary (see Sachse, Wagter,

& Schmidt 2013). For people who are not yet able to use 140 symbols from the beginning, boards with 100 empty symbol fields are available. The positions of the symbols are the same as the one board with 140 symbols. Every symbol has a specific position, regardless of the symbol's visibility. As the vocabulary grows, more symbols are provided. The consistent positions of the symbols/ words prevent having to relearn them when transferring to a more complex board or the binder (see fig. 3 & 4).

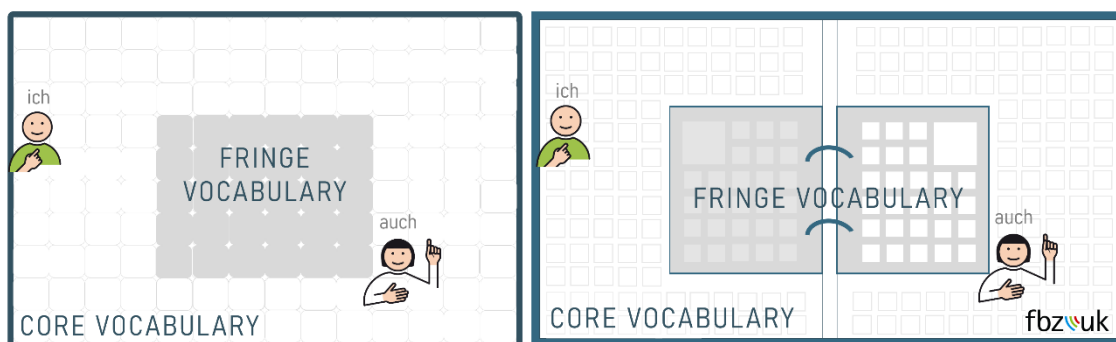


Fig. 3 & 4: Cologne Communication Board and Communication Binder: Different devices with a similar structure (symbols © Metacom)

In addition to the boards and binders, an electronic version with a similar structure was developed based on the core vocabulary research (MyCore, see Sachse, Wagter, & Schmidt 2013). The different aids provide an example of a multimodal yet consistent communication system. However, it is not enough to provide the communication aid to facilitate daily communication. The question, how to teach the (core) vocabulary in a way that allows people who use AAC to actively use it, remains.

3. Using Core Vocabulary

What is the best way to teach core vocabulary? Many of the core words do not produce imagery – in other words they are 'opaque'. Unlike words such as *milk* or *driving*, there is no image to associate with words such as: *too*, *that*, *with*. These words are depicted by relatively opaque symbols. Initially, this appeared to be difficult. However, it has contributed to a

reorientation of intervention and positive developments in the German AAC-debate. Those difficulties required thorough considerations of how to implement core vocabulary from the start (see Boenisch & Sachse 2007). Therefore, modelling and motor planning became more important.

3.1 Core Vocabulary, Modelling, and Focus words

This chapter about teaching core vocabulary is titled 'using core vocabulary' because the usage of the communication aids is learned through the use of core vocabulary in real-life situations. This implies that daily communication and activities provide the framework for AAC-usage and intervention. The *nonspecific* nature of core vocabulary allows for frequent use of the communication aids. Modelling plays a particularly important role: caregivers and assistants use core vocabulary in everyday conversations, thus demonstrating how to

use and to combine the words in order to contribute to a discussion.

Modelling spontaneously can be challenging for the caregiver(s) and assistants. For this reason, the Focus Words Concept was developed (see Sachse & Willke 2020). The main idea of this concept is to always ‘focus’ on a few words and use those frequently.

In order to support modelling in the classroom, posters of the Cologne communication board and of the communication binder (the core frame) were printed. These posters are equipped with Velcro®-symbol cards. When teaching, aside from only hearing the words, words and word orders can be made ‘visible’ with the symbol cards (e.g., ‘we can ...’ vs. ‘can we...’). Heel-Beckmann et al. (2013) reported positive experiences when using an extended vocabulary board at a special school for students with CI: the authors observed progress in the use of the vocabulary. They also reported that speaking children benefited from the use of the posters.

Core vocabulary plays an important role in all forms of communication – whether it is spoken, whether a communication device or signs are used. To support the use of both the Cologne Communication Board and signs, SINGmap was created – a poster with signs in the positions of the words on the 140-board (see Dangschat & Ender 2017 and Dangschat & Plachta 2020).

3.2 Motor Planning

Due to the fixed positions of the words on the communication boards and the similar movement patterns required to access them, words can be primarily remembered through motoric automation. This implies that the iconicity of a symbol is less important for its use than was thought previously. Fixed positions mean that it is not necessary to be able to find a specific symbol in changing locations to be able to learn its use in different contexts. Fixed positions are important – many people who use AAC memorize the position of symbols more easily than remembering the symbols themselves (see Hüning-Meier & Pivitt 2003,

03.003.001). That also applies for plural forms or verb endings: They are neither explained theoretically nor trained in isolation, but rather used repeatedly with the corresponding hand or eye movements to locate the respective fields until the use of the forms becomes gradually automatic. In this way the motoric automation helps to access words and grammatical forms in daily communication and supports the development of the communicative abilities of the person who uses AAC.

4. Focus on Core Vocabulary

The focus on core vocabulary and the related changes in teaching vocabulary has led to a paradigm shift in AAC. These insights also led to discussions about vocabulary selection in foreign language education and teaching German as second language (GSL). Up to now, in GSL there was a strong focus on teaching content words and academic language. As part of a research project, teaching materials for GSL were developed based on core vocabulary. These materials were used in more than 70 kindergartens and primary schools in North Rhine-Westphalia to support the language development of migrant children (see Boenisch et al. 2018). Early findings from the project indicate that the focus on core vocabulary supports the language development of the children positively. Additionally, flexible use of core vocabulary is an important foundation for proficient linguistic usage. This foundation is relevant for the development of academic language: using core vocabulary allows reasoning (‘because...’), correlating (‘this is also the case for’), comparing (‘it is like...’), or contrasting different perspectives (‘it could be this or that’). Core vocabulary also plays an essential role in knowledge acquisition and success in school (e.g., when describing temporal or historical events, explaining processes, or when understanding text exercises). Thus, core vocabulary is essential not only for speech and language development, but also for proficient language use, the development of world knowledge, and academic language.

References

- Baker, B./Hill, K./Devyllder, R. (2000). Core Vocabulary is the same across environments. Verfügbar unter <http://www.csun.edu/~hfdss006/conf/2000/proceedings/0259Baker.htm> [23.05.2019].
- Balandin, S./Iacono, T. (1999). Crews, wusses, and whoppas: core and fringe vocabularies of Australian meal-break conversations in the workplace. In: *Augmentative and Alternative Communication*, 2, 95-109.
- Banajee, M./Dicarlo, C./Stricklin, B. S. (2003). Core Vocabulary Determination for Toddlers. In: *Augmentative and Alternative Communication*, 2, 67-73.
- Beukelman, D./Jones, R./Rowan, M. (1989). Frequency of word usage by nondisabled peers in integrated preschool classrooms. In: *Augmentative and Alternative Communication*, 4, 243-248.
- Boenisch, J. (2014). Die Bedeutung von Kernvokabular für unterstütztes kommunizierende Kinder und Jugendliche. In: *LOGOS*, 3, 164-178.
- Boenisch, J. (2017). Kernvokabular - Schlüssel zur gelingenden Kommunikation bei Kindern mit komplexer Behinderung. In: *Sprachförderung und Sprachtherapie* 4, 208-216.
- Boenisch, J. /Ling, L./Heitmann, L./Fretter, D. (2018). Kernvokabular trifft DaZ. Neukonzeption eines inklusiven didaktischen Sprachförderkonzeptes auf Kernvokabularbasis für Flüchtlingskinder mit Deutsch als Zweitsprache. www.fbz-uk.uni-koeln.de/fileadmin/images/1-Daz/2018_Zwischenbericht_KvDaZ.pdf
- Boenisch, J./Musketa, B./Sachse, S. (2007). Zur Bedeutung des Vokabulars für den Spracherwerb und Konsequenzen für die Gestaltung von Kommunikationsoberflächen. In: Sachse, S./Birngruber, C./Arendes, S. (Hrsg.): *Lernen und Lehren in der Unterstützten Kommunikation*, von Loeper: Karlsruhe, 355-371.
- Boenisch, J./Sachse, S. (2007). Sprachförderung von Anfang an. In: *Unterstützte Kommunikation*, 3, 12-20.
- Boenisch, J. & Sachse, S.K. (eds.) (2020). *Kompodium Unterstützte Kommunikation*. Kohlhammer: Stuttgart.
- Boenisch, J. & Sachse, S.K. (2020). Kernvokabular – Bedeutung für den Sprachgebrauch. In: Boenisch, J. & Sachse, S.K. (eds.) (2020). *Kompodium Unterstützte Kommunikation*. Kohlhammer: Stuttgart, S. 108 – 116.
- Boenisch, J./Soto, G. (2015). The oral core vocabulary of typically developing English-speaking school-aged children: Implications for AAC Practice. In: *Augmentative and Alternative Communication*, 1, 77-84.
- Clendon, S./Erickson, K. A. (2008). The Vocabulary of Beginning Writers: Implications for Children with Complex Communication Needs. In: *Augmentative and Alternative Communication*, 4, 281-293.
- Dangschat, H./Ender, K. (2017). Gebärden im Fokus. Kommunikation mit SIGNmap und SINGbox. In: Lage, D./Ling, K. (Hrsg.): *UK spricht viele Sprachen*. von Loeper, Karlsruhe, 21-36.
- Dangschat, H. & Plachta, S. (2020). Teilhaben mit Gebärden: Strategien zur Etablierung von lautsprachunterstützten Gebärden (LUG). In: Boenisch, J. & Sachse, S.K. (eds.) (2020): *Kompodium Unterstützte Kommunikation*. Kohlhammer: Stuttgart, S. 233 – 239.
- Erickson, K.A./Clendon, S. A. (2009). Addressing Literacy Demands Of The Curriculum For Beginning Readers And Writers. In: Soto, G./Zangari, C. (Eds.): *Practically Speaking: Language, Literacy, and Academic Development for Students With AAC Needs*. Baltimore, 195-215.

- Heel-Beckmann, C./Bümk, M./Kohnen, M./Schmidt, C. (2013). Kreativer Umgang mit der Wortschatztafel im Unterricht. In: Hallbauer, A./Hallbauer, T./Hüning-Meier, M. (Hrsg.): UK kreativ! Wege in der Unterstützten Kommunikation. von Loeper: Karlsruhe, 71-78.
- Hüning-Meier, M./Pivitt, C. (2003). Nichtelektronische Kommunikationshilfen – Eine Übersicht. In: von Loeper/ISAAC (Hrsg.): Handbuch der Unterstützten Kommunikation. von Loeper, Karlsruhe, 03.003.001-03.012.001.
- Murray, J./Goldbart, J. (2009). Cognitive and language acquisition in typical and aided language learning: A review of recent evidence from an aided communication perspective. In: Child Language Therapy, 1, 31-58.
- Robillard, M./Mayer-Crittenden, C./Minor-Corriveau, M./Bélangier, R. (2014). Monolingual and Bilingual Children With and Without Primary Language Impairment: Core Vocabulary Comparison. In: Augmentative and Alternative Communication, 3, 267-278.
- Sachse, S./Wagter, J./Schmidt, L. (2013). Das Kölner Vokabular und die Übertragung auf eine elektronische Kommunikationshilfe. In: Hallbauer, A./Hallbauer, Th./Hüning-Meier, M. (Hrsg.): UK kreativ. Wege in der Unterstützten Kommunikation. von Loeper: Karlsruhe, 35-53.
- Sachse, S.K. & Willke, M. (2020). Fokuswörter in der Interventionsplanung und -umsetzung. In: Boenisch, J. & Sachse, S.K. (eds.): Kompendium Unterstützte Kommunikation. Kohlhammer: Stuttgart, p. 224 – 232.
- Trembath, D./Balandin, S./Togher, L. (2007). Vocabulary selection for Australian children who use augmentative and alternative communication. In: Journal of Intellectual and Developmental Disability, 4, 291-301.
- Vilbusch, S. (2018). Die Rolle von Kernvokabular im DaZ-Anfangsunterricht am Beispiel einer Analyse ausgewählter Lehrwerke. Bachelorarbeit. Universität zu Köln.
- Zangari, C./van Tatenhove, G. (2009). Supporting More Advanced Linguistic Communicators in the Classroom. In: Soto, G./Zangari, C. (Eds.): Practically Speaking. Language, Literacy and Academic Development for Students with AAC Needs. Baltimore, 173-193.