

Script for language assessment on Augmentative and Alternative Communication perspective: construction and content validation

Instrumento de avaliação de linguagem na perspectiva da Comunicação Suplementar e Alternativa: elaboração e validação de conteúdo

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ABSTRACT

Purpose: Content development and validation of a language assessment instrument lined on Augmentative and Alternative Communication (AAC). **Methods:** The instrument was elaborated from a bibliographic review, along with the clinical experience of the researcher. Then, It was evaluated by expert judges in the area and a new final version was constructed, with computed collaboration. **Results:** The Instrument was developed in four content axes, with instructions and suggestion of contexts and graphic symbols. Based on the evaluation of judges, the instrument was improved and the final version was proposed. **Conclusion:** The instrument, named CSA_Linguagem, was proved to be operational, easy, of rapid application and low cost. However, this research has limitations, there are no standardized language assessment tools that consider the use of graphic symbols as communication possibilities.

Keywords: Autistic disorder; Communication aids for disabled; Evaluation studies; Rapid evaluation; Nonverbal communication

RESUMO

Objetivo: Desenvolver e validar o conteúdo de instrumento de avaliação de linguagem pautado na Comunicação Suplementar e Alternativa (CSA). **Métodos:** O instrumento foi elaborado a partir de revisão bibliográfica, em conjunto com a experiência clínica da pesquisadora. Em seguida, foi avaliado por juízes especialistas na área e uma nova versão foi construída, incorporando as colaborações dos juízes. **Resultados:** O instrumento foi elaborado em 4 eixos de conteúdo, com instruções e sugestão de contextos e símbolos gráficos. A partir da avaliação dos juízes, o instrumento foi aprimorado e proposto, em sua versão final. **Conclusão:** O instrumento denominado CSA_Linguagem se mostrou operacional, de fácil e rápida aplicação e baixo custo. Contudo, esta pesquisa tem limitações, na medida em que não há instrumentos de avaliação de linguagem padronizados, que considerem a utilização de símbolos gráficos como possibilidade de comunicação.

Palavras-chave: Transtorno autístico; Auxiliares de comunicação para pessoas com deficiência; Estudos de avaliação; Avaliação rápida; Comunicação não verbal

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INTRODUCTION

The absence or delay in language acquisition in the first years of a child's life raises concerns about his development and may suggest several etiologies and procedures.

Regarding a child with complex communication needs, the interpretation of a few productions is possible, but tends to be restricted to unintelligible vocalizations, actions, gestures and body expressions, requiring more references for the interpretation of such as graphic symbols.

Considering that in the process of language acquisition, in a context where language is understood not as a strict learning product, it is indispensable to place the subject in the position of sense creator and, for this, the interlocutor must interpret the child's productions in order to give them form and meaning, inserting them in networks of signification^(1,2).

They become, therefore, fundamental, references for interpretation, which can be made with graphic symbols and at that moment there is the possibility of insertion of these subjects in the language proposed by the Augmentative and Alternative Communication (AAC).

AAC can be defined as a set of tools and strategies that a subject can appropriate to solve the challenges of everyday communication and that has effects when the intention and the meaning proposed by him are understood by the other. How this will occur, that is, the form or the means are less important, what really matters is the success in sending the message⁽³⁾.

AAC is an area of clinical and educational practice research that assists in the limitations of activities and restrictions of social participation of subjects with complex communication needs⁽⁴⁾.

With AAC's graphic symbols, oral language gains materiality and is moved by the speech effect of the other ("speech that is listening")⁽⁵⁾. This materiality allows the dialogue, which results in a favorable change in the relationship of the subject with the language⁽⁶⁾, a necessary and important change when we attribute to language a constitutive role, a condition for the meaning and birth of the subject⁽⁷⁾.

Symbol systems or graphic symbols are understood in this study as a familiar image, or not, though they may have special connotations for more of their obvious and conventional meaning. Thus, a word or phrase represented by an image becomes symbolic when it implies something beyond its manifest and immediate meaning⁽⁸⁾. The symbol is the representation of something experienced and thus a meaning by the one who uses it to communicate, and in this study, always refers to graphic symbols, which can be drawings, figures or pictures⁽⁹⁾.

AAC symbols can be organized on a communication board and presented by means of electronic devices, or not, i.e., at low (figures and drawings on paper), medium (vocalizers) or high technology (electronic equipment, computers or mobile devices), aimed at promoting communication⁽¹⁰⁻¹²⁾.

In this context, speech-language pathology studies are essential, both in intervention and evaluation. However, how to evaluate possibilities and / or the use of these symbols if there are no tools, instruments or procedures? Mainly, assuming that AAC interventions cannot be restricted to recognizing, naming and pointing visual symbols, considering language as constitutive of subjectivity and not only as a code of communication⁽¹³⁾.

Evaluation instruments have been increasingly used as aids for speech language therapy. In clinical practice, they allow the documentation of clinical care and can often be important

aids for targeting, defining objectives and aspects that should be prioritized, and to better allocate available resources⁽¹⁴⁾.

In a general overview, there is a shortage of literature on language assessment instruments for children with complex communication needs, as well as the absence of evaluation tools from the AAC perspective and, especially, with this conception of language.

In Speech Language Therapy, there are two available Brazilian evaluation instruments: the ABFW Test⁽¹⁵⁾ - Children's Language Testing in Phonology, Vocabulary, Fluency and Pragmatic Areas (Teste de Linguagem Infantil nas Áreas de Fonologia, Vocabulário, Fluência e Pragmática) -, specifically the Pragmatic Assessment Subtest and the Behavioral Observation Protocol (Protocolo de Observação Comportamental, PROC)⁽¹⁶⁾. Both propose to evaluate communication in the absence of orality, but use language as a code, in which speech is approached in the deviant aspects of universal linguistic norms⁽¹⁾.

None of the mentioned instruments addresses AAC as a communication strategy, from a perspective of language development, the focus of this research.

On the other hand, from the AAC perspective, there are studies that have evaluated children with motor impairment, more specifically chronic non-evolutionary encephalopathy^(17,18). Cesa⁽¹⁷⁾ developed a phonoaudiological protocol of conversational evaluation to be used in the evaluation of means, communicative acts and the adjacent pairs observed in the conversational context. Evaluation protocols were also developed to identify communicative skills in the school⁽¹⁹⁾ and family contexts⁽²⁰⁾, designed for students with disabilities, without orality and used by teachers. All of these protocols are focused on communication strategies, but do not yet directly target the use of AAC as language.

Broadening the issue to the international scope, it is important to highlight a study that analyzed 30 years (1985-2014) of AAC Journal publications⁽²¹⁾ (Augmentative and Alternative Communication Journal). The authors subcategorized the results into studies that reported interventions (those with impact of an independent variable on participants' performance), descriptive studies (those with observational or qualitative methods), experimental studies (those that describe the effect of an independent variable, intervention, with non-AAC users) and studies targeted for instruments and measurements (tool development and evaluation). The study showed small interest for research in this area, only 7% in the study period, but with a growing increase, and in the first 15 years of the journal (1985-1999), there were five articles and in the following period, it raised to 14 articles. Even with the growth in the area, this number is still small, and further research is needed. The authors concluded that it is difficult to identify measurement tools that are reliable and valid. Research with AAC is often very challenging due to the heterogeneity of the population, the complexity of systems and interventions, and the complex nature of the communication process⁽²¹⁾.

It should be highlighted that research on language assessment, focusing on AAC for people with complex communication needs is incipient.

Thus, this research aimed to develop and validate the content of a language evaluation instrument based on AAC.

METHOD

This research was developed according to the ethical norms recommended for research with human beings and approved by the Ethics Research Committee of the Pontifícia Universidade Católica de São Paulo (PUC-SP), under protocol No. 1.227.183. All individuals involved signed the Free and Informed Consent Form.

The CSA_Linguagem instrument was elaborated based on a literature review on theoretical and methodological aspects of language acquisition and development, as well as on language evaluation, plus the clinical experience of the researcher (systematic observation of clinical situations). The instrument proposes to evaluate language aiming at possibilities with AAC to mediate the communicative interaction, considering the graphic symbols as communicative support in dialogic context from ludic situations in order to evaluate the subject's communication possibilities.

One of the most studied methods to obtain the validity of a measure is the content validity⁽²²⁾. Thus, after the development, the instrument was submitted to the evaluation of expert judges regarding clarity and pertinence of the items presented^(23,24).

The procedure took place in three phases. The first phase was the preparation and development of the preliminary version of the CSA_Linguagem instrument. The instrument was structured with instructions and guidelines for application, material, procedure and issues to be observed.

Three interactional contexts were suggested, which took place in playful situations based on graphic symbols, as support for the interpretation of communicative behaviors. The themes suggested in the instrument were music, animals and means of transportation, selected from elements present in the children's repertoire, considered as social and cultural motivators, according to the researcher's clinical observation. Based on these themes, AAC materials were developed in the aided technique, i.e., thematic communication boards, with low-tech PCS (Picture Communication Symbols) system symbols (printed and plastic cards). Both the PCS system and themes and figures are just suggestions, the graphic symbols can be modified according to the system availability, as well as something that has social and cultural meaning.

In the second phase, the selection of specialists and the elaboration and application of an evaluation questionnaire were carried out. Ten speech-language pathologists with clinical

experience and recognized expertise in the care of children with complex communication needs using AAC were selected⁽²²⁾.

A preliminary version of the CSA_Linguagem sent to judges, together with an evaluation questionnaire, to verify if the items were adequately measuring the instrument they proposed to evaluate and to make suggestions and / or modifications when necessary.

In the third phase, the necessary adjustments pertinent to the theoretical assumption of the CSA_Linguagem instrument were made (initial version and elaboration of the final version).

RESULTS

The contributions considered pertinent to the research purpose and the theoretical and methodological foundations used in the elaboration of the instrument were incorporated in the CSA_Linguagem instrument (Annex 1).

The initial version of the instrument had 9 questions and, from the judges' contributions, 7 were added, totaling 16 questions (Chart 1).

It was found that most of the judges' suggestions (regarding the application procedures) were regarding the higher level of detail in the instructions, objectives, location specification and application time, as well as the standardization of the graphic symbols used. Suggestions were fully incorporated into the elaboration of the new version. The guidelines for the application of the instrument consisted of recommendations on location, duration of the proposal and the application context.

For the instrument application, the location should be small, with no visual attractions and the speech therapist should preferably be alone with the child. The proposal lasts 10 minutes of free interaction, mediated by graphic symbols that may have meanings for the child. It is suggested to use the Picture Communication Symbols (PCS) figures, arranged on thematic boards with three blocks (representing animals, means of transport and music), each of 4 symbols in the aided technique, arranged in the form of loose cards (fixed with velcro on a sheet, related to the theme) and low technology. These symbols are presented to the child aiming at free interaction and seeking to establish verbal and / or nonverbal communication in dialogic activity.

Regarding the content of items that comprise the thematic axes of the instrument, most of the suggestions were incorporated

Chart 1. Comparison between the initial and final versions of the CSA_Linguagem instrument, with regard to introduction, guidelines and procedure

		Version one	Version two	Judges' suggestion
Introduction	#	Does not have	Instrument Objective	Clarify the objective
Guidelines for application	*Location	Basic explanation	More detailed	Explain the location
	*Duration	Five minutes of initial introduction	Duration of the proposal: 10 minutes	Specify suggested time and proposal
	*Context	Brief context	More detailed context	Explain the activity better
	*Material	Picture Communication Symbols (PCS) System	Suggested PCS, but suit with possibilities and availability	System of suggested graphic symbols
	#	Does not have	Description of a standardization	Explain a standardization of symbols
Procedure	*	Mentioned the filming	Explanation about the filming performance	Explain who will carry out the filming and how it will be done

#Included content; *Modified content

Chart 2. Comparison between versions one and two of the CSA_Linguagem instrument, regarding the instrument axes and questions

Axis	Questions	Version one	Version two	Judges' suggestion
I. Communicative Intention	*1, 2 and 3	Simple examples	New and better explained examples	Explain better with the example.
	#4	Does not have	Child's response with the look	Include a further response option
	#5	Does not have	Response with more than one communication resource	Include more response possibilities at the same time
	#6	Does not have	Include the question	Include the communicative intention, initiating the dialogue
II. Functional management of graphic symbols	*7, 8, 9	Simple examples	More clearly explained examples	Explain better with the example.
III. Questions and comments involving the graphic symbols	*10, 11, 12	Simple question	More objective questions and example addition	Make it clearer
IV. Emission of verbal sounds	#13, 14, 15 and 16	Does not have	Questions about verbal emission	Insert questions to investigate vocalizations

#Included content; *Modified content

into the final CSA_Linguagem version, taking into account the need to make the examples clearer, as well as the possibility of including other manifestations of responses by subjects (communicative look, intention and initiative). The 4 axes remained, with the addition of some subitems and responses remained as: yes (consistent answers), sometimes (unsystematic responses) and no (absence) (Chart 2).

In the first axis, "communicative intention", the child is evaluated as to the interest in graphic symbols, if he uses them to communicate, or if communication occurs through gestures, if he responds using the look, or with more than one communication resource, if an interaction is initiated using the graphic symbol.

In the "Functional management of graphic symbols" axis, the script proposes to evaluate the child as for the sharing of graphic symbols, spontaneously, when requested, or reproducing the use made by the other.

In the "Responses to verbal and non-verbal stimulus" axis, that is, involving questions and comments mediated by graphic symbols, the child's responses are evaluated when the therapist expresses himself verbally or when he uses graphic symbols or gestures as support.

Finally, in the last axis, "Emission of verbal sounds", it is verified if the child emits some kind of sound with communicative intention, showing or looking at the graphic symbols, if he emits sounds only in a contextualized way or with intonation (Annex 1).

The CSA_Linguagem instrument was presented with a different content from what was initially proposed, incorporating a large part of the modifications suggested by the judges, making the instrument clearer, simpler, objective and with clearer instructions on the application and punctuation procedures.

DISCUSSION

In the evaluation form filled by judges, there was a clear need to reformulate the preliminary version elaborated by the researcher aiming to give greater clarity and objectivity to instructions and application procedures, as well as to the

writing of items that make up the instrument, specifying the skills evaluated. These contributions are in agreement with what is postulated about the process of construction and elaboration of the content of an instrument^(23,25,26).

Analyzing the judges' suggestions regarding the items that make up the instrument, it was found that many of them were in accordance with the ASHA (American Speech-Language-Hearing Association) recommendation, in a document that specifies the speech therapist's role and responsibilities regarding the AAC⁽⁴⁾. This technical document places the absence of standardized assessment tests in the AAC and some general principles are recommended for evaluation procedures.

The concern with aspects mentioned in the document such as the need to better describe and define the place of application and the presence of companions, for example, are among modifications suggested by judges for the CSA_Linguagem instrument. Likewise, there was concern in better detailing and describing how the patient's manifestations can be observed, in the sense of communicating, which can be verified in the suggestions for each of the items, such as the importance of the responses to verbal and non-verbal stimuli.

In the same document, it is possible to find instructions regarding the need for assessing communication skills and contextual identification so that these skills can be promoted and improved as part of the future intervention process⁽⁴⁾. It was observed that these recommendations are in accordance with the guiding principles, from which the CSA_Linguagem instrument was elaborated, specifically with regard to the structuring of the instrument around interaction axes that involve different contexts.

In the area, there was a predominance of works whose bases are anchored on this type of language conception, in which communication is reduced to only some of its functions. However, the elaboration of principles guiding the content of the CSA_Linguagem instrument, as well as the observations suggested by judges have sought, as far as possible, to more comprehensively approach the difficulties of children with complex communication needs.

The final version of the instrument was improved, especially with regard to the introduction and instructions for application and the contents relevant to the theoretical assumptions of the proposal were better explained.

In this sense, the CSA_Linguagem instrument proposes parameters that help the speech therapist to evaluate the possibilities and limits of the use of the AAC, given the symbolic and language resources of each subject.

The proposed objective was contemplated in the sense of advancing in the validation process of the content of an evaluation instrument, from the AAC perspective.

CONCLUSION

The elaboration of the CSA_Linguagem instrument relied upon data collection and collaboration of experienced professionals in the construction of a complex instrument. The population with complex communication needs, which is the target population for the application of this instrument, is heterogeneous and with complex language conditions, which makes it difficult to collect data and standardize elements to be included in the evaluation. However, the elaboration and validation of the CSA_Linguagem content was successfully completed.

This research has some limitations, since there are no standardized language assessment tools that consider AAC as a communication possibility. Therefore, it was not possible to meet the criterion of comparing the CSA_Linguagem instrument with other available tools for the purposes of instrument validation.

The proposed instrument does not intend to supply language evaluation, but to provide subsidies and open horizons for the reflection of possibilities of communication, in addition to orality. It is believed that it can subsidize researchers and clinicians in the investigation of AAC possibilities in subjects with complex communication needs, regarding the identification of skills and important possibilities for language acquisition and development.

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Annex 1. Instrumento CSA_Linguagem

INSTRUMENTO DE AVALIAÇÃO DE LINGUAGEM UTILIZANDO A COMUNICAÇÃO SUPLEMENTAR E ALTERNATIVA

Nome: _____ Responsável: _____

Data de nascimento: ___/___/___ Idade: _____ Gênero: () F () M

Nível de escolaridade: () Creche () Pré-escola () não escolarizada

Introdução: Este instrumento tem por objetivo avaliar as possibilidades do uso de símbolos gráficos como estratégia de comunicação em crianças com necessidades complexas de comunicação e assim promover discussão sobre os ajustes necessários em situações conversacionais que podem ser direcionadas a partir de um sistema de CSA para utilização na terapia fonoaudiológica.

Orientações para aplicação do instrumento:

Local: Criança (C.) e terapeuta (T.) sozinhos em uma sala, preferencialmente pequena e sem atrativos visuais para haver o menos possível de dispersão e dificuldade de manutenção de foco e atenção. Se a criança demandar um acompanhante, o mesmo poderá ser admitido, recebendo instrução de não interferir.

Duração proposta: dez minutos de interação livre com a utilização dos símbolos gráficos (sugeridos abaixo). Em caso de recusa pela criança, anotar a duração específica a cada sujeito.

Contexto da atividade: T. se apresenta à criança e interage livremente visando estabelecer comunicação verbal e/ou não verbal. Mostra os três blocos de símbolos gráficos descritos abaixo, apresentando um tema por vez, independentemente da ordem. Faz comentários e perguntas a respeito, enquanto apresenta os símbolos. T. deve apontar, pegar o símbolo gráfico e fixá-lo em uma prancha com velcro, buscando sempre o estabelecimento de atividade dialógica. Por exemplo: “Uma maçã! Ah eu adoro maçã!” ou “Um trem! Piuí!” ou “Que porquinho fofo!” ou “Vamos cantar uma música?”. Sempre falando e mostrando.

Material: Devem ser elaborados cartões em papel e plastificados individualmente. Sugestão de tamanho: 10 x 10 cm. Foram selecionados quatro símbolos gráficos agrupados em três categorias semânticas, sugeridos a partir de elementos presentes no repertório infantil, considerados como motivadores sociais e culturais. Por exemplo: meios de transporte (carro, trem, caminhão, bicicleta), animais (cachorro, gato, galinha, porco) e músicas (sapo, dona aranha, palma e pintinho amarelinho) (Figura 1).

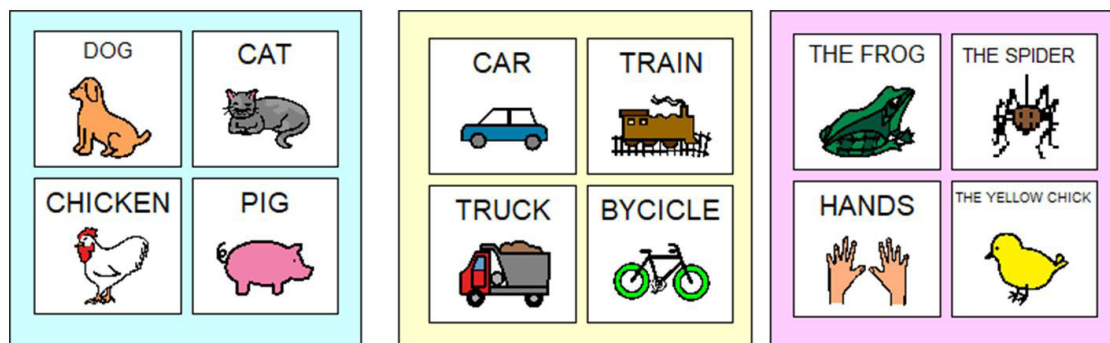


Figure 1. Graphic symbols suggested from Picture Communication Symbols

Procedimento de coleta de dados: As atividades devem ser integralmente filmadas com câmera fixa, para posterior análise dos itens descritos no instrumento. As respostas de cada questão devem ser assinaladas:

() não () às vezes () sim. Observações: _____

I. Intenção comunicativa

A criança:

1. Mostra interesse pelos símbolos gráficos? Ex: A criança olha atentamente ou fixamente para o símbolo
2. Comunica-se por meio dos símbolos gráficos? Ex: A criança pega o símbolo, vocaliza e entrega para o terapeuta
3. Comunica-se por meio de gestos? Ex: A criança pega na mão do terapeuta, puxa, cutuca ou aponta algo.
4. Responde a algum comentário ou pergunta utilizando o olhar? Ex: T. pergunta: “Cadê o caminhão?” A criança olha para o símbolo do caminhão.
5. Responde com mais de um recurso de comunicação? Ex: A criança olha, aponta o símbolo, vocaliza e olha novamente para T. em resposta a algo.
6. Inicia uma interação utilizando o símbolo gráfico? Ex: A criança pega o símbolo, entrega para T. iniciando um diálogo ou uma interação.

II. Manejo funcional dos símbolos gráficos

A criança:

7. Compartilha o significado dos símbolos gráficos de forma espontânea? Ex: A criança aponta uma figura e olha para T. espontaneamente.
8. Compartilha o significado dos símbolos gráficos somente quando solicitado pela T? Ex: T. pergunta e apresenta dois símbolos como opção de resposta, “Esse ou esse?” A criança pega um dos símbolos.
9. Utiliza os símbolos gráficos reproduzindo a utilização feita por T? Ex: T. retira um símbolo da prancha, a criança faz o mesmo.

III. Respostas ao estímulo verbal e não verbal (perguntas e comentários envolvendo os símbolos gráficos)

A criança

10. Responde quando T. se expressa apenas verbalmente? Ex: T. fala “Vamos cantar parabéns?” A criança sorri e bate palmas.
11. Responde com o suporte dos símbolos gráficos utilizadas por T.? Ex: T. diz: “Vamos cantar essa música?” (mostrando um símbolo). A criança começa a vocalizar na melodia da música representada.
12. Responde com o suporte de gestos utilizados por T.? Ex: T. gesticula uma música (batendo palma). C. olha, sorri e vocaliza cantando a música representada.

IV. Emissão de sons verbais

A criança

13. Emite algum tipo de som com intenção comunicativa?
14. Emite sons mostrando ou olhando os símbolos gráficos?
15. Emite sons somente de forma contextualizada?
16. Emite som com entonação?