

The process of recording spelled signs using the Sign Writing System – SignWriting

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Abstract: This research aims to map the spelled signs used in Libras, describing the difference between rhythmic spelling and fingerwriting, using SignWriting as a record of the signs. For the research corpus, a look will be kept at some authors who contributed to Libras, in the grammar of Libras Strobel and Fernandes (1998), Felipe and Monteiro (2008), Ferreira (2010), Quadros and Karnopp (2004) Gesser (2009), Segala and Kojima (2012) for the writing of sign language the authors Stumpf (2005), Barreto and Barreto (2015), Carneiro (2017), Nascimento (2018) and Pontes (2023) were used. The research is of a bibliographic-descriptive nature, with a qualitative approach. The research methodology will be based on reading books, articles, magazines, dissertations and theses that have an approach to rhythmic spelling, in order to carry out a selection of signs spelled in Libras.

After selection, the Corpus is created, describing the signs spelled in Libras that are used by the deaf community of Cacoal - Rondônia.

As a result, some signs, when registered, have phonetic losses or require the addition of another grapheme to be clear, and many, even though they are spelled signs, are not in the spelled sign register.

Keywords: Libras; Sign Writing; Spelled Signs.

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Abstract: The present research aims to map the spelled signs used in Libras, describing the difference between rhythmic spelling and typing, using SignWriting as a record of the signs. For the research corpus, a look will be kept at some authors who contribute to Libras, the grammar of Libras Strobel and Fernandes (1998), Felipe and Monteiro (2008), Ferreira (2010), Quadros and Karnopp (2004) Gesser (2009), Segala and Kojima (2012) for writing sign language, the authors Stumpf (2005), Barreto and Barreto (2015), Carneiro (2017), Nascimento (2018) and Pontes (2023) were used. The research is bibliographic-descriptive in nature, with a qualitative approach. The research methodology will involve reading books, articles, magazines, dissertations and theses that have an approach to rhythmic spelling, in order to make a selection of signs spelled in Libras. After the selection, the Corpus is created, describing the signs spelled in Libras in which they are used by the deaf community of Cacoal - Rondônia. As a result, some signs when registered have phonetic losses or require the addition of another grapheme to be clear, and many, even though they are spelled signs, are not in the register of spelled signs.

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INTRODUCTION

With the creation of the Libras course in Brazil, it has been growing researchers in the area of Libras, thus trying to understand how the language works we delve into readings focused on Libras, in order to facilitate communication with the deaf student, when searching for bibliographies in the area it was observed that little research is done on the subject, with these factors the record of these signs can contribute to the enhancement of the language, to the linguistics, as well as facilitating the deaf community in knowledge, as well as cooperate with new researchers or curious people who want to emerge in Libras, because, for those unfamiliar with the language, they believe that all signs are made with fingerwriting, with the theme, can break certain myths.

The emergence of the theme comes from the fact that we work in the classroom Federal University of Rondônia - Unite, as translators interpreters of Libras, in Cacoal Campus, during some classroom signal exchanges, some concerns about what would be in Libras fingering and rhythmic spelling. Thus, because we are in an academic field, we decided to research about the thematic, trying in this way to contribute to our knowledge and to those who questions you may have on the topic. The relationship with sign writing in this case SignWriting as a record for being one of the writings of Sign Languages and for being one of our

researchers studying SignWriting, as well as a means of contribution we decided perform the spelling of the signs.

The research methodology will be based on reading books, articles, magazines, dissertations and theses that have an approach to rhythmic spelling, for thus, carry out a selection of signs spelled in Libras. After the selection, it will be constituted the Corpus, carrying out a description of the signs spelled in Libras in which are used by the deaf community of Cacoal - Rondônia. The research is bibliographic-descriptive character, with a qualitative approach. According to Gil (2002, p. 45):

The main advantage of bibliographic research lies in the fact that it allows the researcher to cover a much wider range of phenomena than could be researched directly. This advantage becomes particularly important when the research problem requires data that are widely dispersed across space.

The research aims to map the spelled signs used in Libras, describing the difference between rhythmic spelling and fingerwriting, using as recording of signs or SignWriting.

For the research corpus, a look will be kept at some authors that contribute to Libras, to the grammar of Libras Strobel and Fernandes (1998), Felipe and Monteiro (2008), Ferreira (2010), Quadros and Karnopp (2004) Gesser (2009), Segala and Kojima (2012) for writing sign language the following were used: authors Stumpf (2005), Barreto and Barreto (2015), Carneiro (2017), Nascimento (2018) and Bridges (2023).

For this research, 28 spelled signs were selected, carried out description of the signal, a table will be presented to describe each signal and how it was signaled, SignWriting will be used for the record. research is divided into Introduction, development with theoretical support on history of sign language, SignWriting, typing vs rhythmic spelling, transcription of the spelled signs with presentation and description of how it occurs and what the signs used in Cacoal by the deaf community, analysis and final considerations.

1. THE HISTORY OF SIGN LANGUAGE

Sign language has existed since the existence of deaf people, but not holds a fixed origin of how it was actually created. There is a record of the existence of the deaf person in religious writings, but sign language begins

in Pedro Ponce de Leon, considered the first teacher of the deaf, monk Benedictine in Onan. Pontes (2023, p.18) explains:

Sign languages have existed since deaf people needed a communication process to interact with their sensory peers without hearing. Writings show the presence of deaf people in documents such as the Holy Bible. Mark 7:32 points out that a deaf man came to him, who had difficulty speaking; and they begged him to put his hand on him." In this biblical brought-passage and in others, it is possible to identify the deaf person, but the use of sign language is not mentioned. For many centuries, sign language was not recognized as a language, and was treated as gestures, mime or pantomime.

Being considered one of the pioneers in the education of deaf people, Ponce de Leon used typing, writing and oralization as methodology, as means of communication. The first school for teachers of the deaf was one of its achievements that contributed to the teaching of sign language and development pedagogical of deaf people from other countries.

Later, Charles Michael L'Eppé, known for using signs methodical and be the "Father of education for the deaf", responsible for formalizing the French sign language. L'Eppé was based on the gestural communication used by deaf people in Paris. This systematization indirectly influenced the development of Libras, which currently consists of French sign language and signs used by Brazilian deaf people. Thus, Giroletti (2017, p. 46):

There is much conflicting and somewhat mysterious information about the true beginnings of Sign Language, for example, who taught L'Épée sign language. Did he learn it himself from the deaf beggars who lived on the streets? It is known that around 1755, he began a method in France to teach the deaf to read, in which he associated words with pictures, and that it was the abbot Charles Michel de L'Épée who founded the first school for the deaf that had public support, and trained several teachers in France and Europe.

Sign language in Brazil began at the request of Dom Pedro II, when requesting the arrival of the French professor Ernest Huet, founder of INES - Instituto National College for the Education of the Deaf, formerly named, National College for Deaf-mutes, of both sexes:

In June 1855, Huet presented Emperor Pedro II with a report whose content revealed his intention to found a school for the deaf in Brazil. In this document, he also reported on his previous experience as director of an institution for the deaf in France: the Institute for the Deaf-Mutes of Bourges. (INES, 2021).

In this way, Huet used the combined method, the alphabet, signs and speech, and consequently triggered a repercussion, elevating the name of the institution and attracting people from different places.

Because it is the only educational institution for deaf people in Brazil and even in neighboring countries, for a long time, INES received students from all over Brazil and abroad, becoming a reference for the issues of education, professionalization and socialization of deaf individuals. (INES, 2021)

Sign language until then was not seen as a language, it did not have the linguistic standardization like other oral languages. Thus, the North American researcher American William C. Stokoe was an important figure for sign languages, because, through his research, he triggered the normalization of the signals, making not just gestures, but a language. Stokoe was considered the “father of language” of American signals”, but his contribution did not only benefit the North-Americans, but other countries that used sign language, and deaf people from worldwide. Stokoe structured sign language, Quadros and Karnopp (2004) claim that:

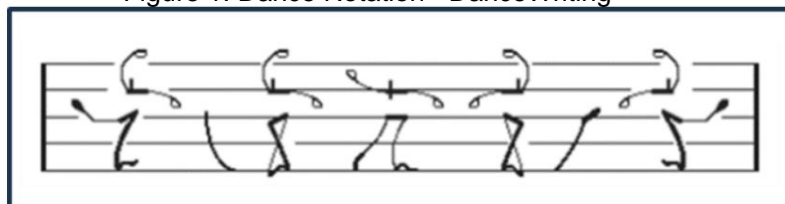
Stokoe proposed a structural linguistic scheme to analyze the formation of signs and proposed the decomposition of signs in ASL into three main aspects or parameters that do not carry meanings in isolation, namely: a. Hand configuration (CM). B. Hand location (L) [...] being used here as a synonym for Point of Articulation (PA). C. Hand movement (M) (Quadros; Karnopp, 2004, p. 48).

Stokoe, in his research describes the first three parameters of the language of signs, after him other researchers discovered the other two parameters that make up sign language.

2. SIGNWRITING

Valerie Sutton, born in 1951, in the United States of America, being dancer, in 1972 created the dance notation system, DanceWriting, during the period of dissemination of the ballet writing the material came to the knowledge of sign language researchers in Denmark, drawing attention to this system. These researchers invited Sutton to develop a notation system that would record Sign Language.

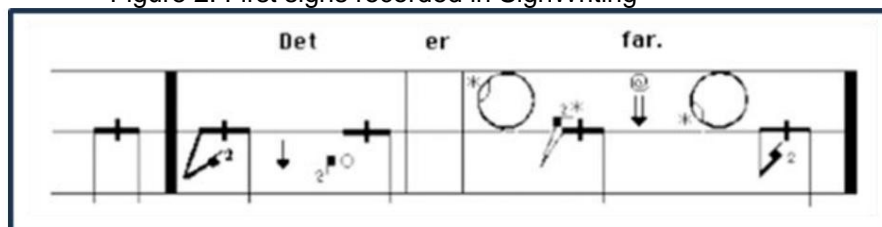
Figure 1: Dance Notation - DanceWriting



Source: Carneiro, 2017, p.10.

In 1974 Sutton created SignWriting, a system of “international writing [...] The notary emphasizes that she is not the owner of SignWriting, only its inventor.” (Barreto;Barreto,2015,p.71) When writing, the objective was to include all the details existing in the signage for the paper. When the author created the system I was not aware of the existence of other writings that I already had, much less about sign language, what made SignWriting different is that the author managed to put the movements into writing, something that few systems had achieved.

Figure 2: First signs recorded in SignWriting



Source: Source: Carneiro, 2017, p.10.

When writing, there is no standardization of the sign, what there is is the standardization of the rules for writing signs, thus respecting the signs of each country and regionality.

When Sutton created the system it was possible to find the notation only in paper, but with advanced technology writing has gained technological spaces that facilitated access and propagation, SignWriting was created in 1996, which is a sign writing keyboard and in 2004 the online site where it can be promoted with signs in SignWriting, this site is SignPuddle. Nowadays the site is very used and nurtured by researchers, lovers and scholars, access is online, being able to find different signs, which have variations of signs, one description by researchers, and new signs may be added and registered for more people, as well as being able to perform the translation for SignWriting of texts. Within the platform it is possible to find dictionaries of

several countries, texts and articles related to the topic, made available to downloads.

This system is complete for writing, as it allows you to identify the phonemes. Thus Barretos and Barretos (2015, p. 76) state the following:

SignWriting is a direct visual writing and a complete solution for writing sign languages. Each grapheme in this writing directly represents a phoneme of Sign Languages and shows us how it is realized. Most of these graphemes are visually iconic, allowing a quick association with the respective phonemes. The main categories of graphemes visually represent the head, face, trunk, limbs, hands and movements, while other graphemes represent dynamics and time. Their sizes are proportional to each other. Thus, SignWriting is a writing of non-arbitrary strokes [...]. Its graphemes directly represent how the phonemes of Sign Languages are realized.

The spelling of signs in SignWriting makes it easier to understand the morphemes of signs, the signs are represented in a linear way, just like the human body, many people associate this writing system with ideographic⁴.

For a long time when people talked about sign writing, they said they were drawings, ideograms or many other placements for writing, the authors Barretos and Barretos (2015) designate the writing of sign language as grapheme⁵.

With the Milan Congress in 1880, much research focused on the sign languages were banned in the world, but signing did not stop, the deaf people had to use their languages in secret, and in Brazil it was no different. Thus, sign language was only recognized in 2002 in Brazil with law No. 10,436. Sign languages are natural languages, when writing it is easy to identify the parameters or rather the phonemes. When you learn the SignWriting performs certain analyses, as stated by Barreto and Barreto (2015, p 47-48):

4 Barreto and Barreto (2015, p. 78) describe it in the footnote: An Ideographic Writing is one that uses pictorial signs to represent objects, ideas and the sounds with which such objects or ideas are named in a given language. Ideographic writing does not represent linguistic entities, but ideas. Ex.: Kanji (used in Japan), Dongla (used in part of China) and Mandarin (also used in China) which is considered by many authors to be an ideographic writing.

5 This nomenclature was used by Barretos and Barretos to explain how to write signs. Thus (BARRETO; BARRETO, 2015, p.78) states that "because they are not used to writing Non-Arbitrary Lines, many people confuse it by calling Sign Writing (SignWriting) drawing. Drawings are lines made to represent reality or imagination."

When learning and using Sign Writing, your brain makes an in-depth (1) phonetic (2) phonological analysis of Libras. This happens as you observe, either consciously or unconsciously, the structure of Hand Configurations, Palm Orientations, Location patterns – that is, where the signs are made – Movements and Non-Manual Expressions, which are facial expressions and body expressions. At the same time, your brain assimilates (3) the morphology of Libras. That is, the internal structure of the signs, which are the smallest parts with meaning. [...] You also acquire their (4) syntax, (5) semantics and (6) pragmatics and also acquire more vocabulary of Libras much faster than traditional methods. Thus, in a very natural way, the brain associates new knowledge with old.

New connections are established. And studying and deepening Libras becomes much easier.

To communicate in sign language, users need to perform training courses, have contact with the deaf community and in some cases can study a degree course in Libras. To learn how to write, it is done in the form of a discipline in the undergraduate course in Libras in Brazil or in extensions offered by universities, or take technical courses for the knowledge, in some institutions they offer other types in addition to SignWriting of sign writing, but in Brazil it is one of the most used scripts. To write SignWriting the user needs to know the grammatical rules of Libras, in this case for Brazil, as well as knowing how to perform the notation and its rules orthographic.

In Brazil, one of the first researchers to publish on the SignWriting was Marianne Stumpf, where in 2005, she wrote a doctoral thesis with the theme “Learning Sign Language Writing through the system SignWriting: Sign Languages on Paper and Computer”. This innovative and insightful, which little is heard about, his work was a kickstart to new researchers to invest in the topic and unravel the details of how this works writing.

The deaf person is more visual than the hearing person, and has a greater perception SignWriting contributes significantly to your learning, as explained by Stumpf (2005, p.45):

The relationship between deaf people and sign language is the same as that between hearing people and their native language. They are not aware of the grammatical structures of their language, but they use them correctly and acquire fluency effortlessly. In order to learn a foreign language, hearing learners only achieve positive results after arduous and time-consuming study. The deaf person, on the other hand, has the natural difficulty of learning a foreign language, the fact that they do not have the mapping offered by speech and the even more relevant fact that, in most cases, they do not have a consistent sign language. [...]

Humans need food to survive, just as they need language to communicate with each other. At a certain point in history, this form of communication became the object of reflection and study. This is what happened with oral languages that have a written form.

Sign writing therefore provides several benefits to the deaf.

how to have “access to the written culture of the deaf population”. (Stumpf,2005,p.46).

Barretos and Barretos (2015, p.47) states that:

Sign writing helps to memorize, learn and organize thoughts in Libras more quickly. This happens because it records signs in a direct visual way, part by part, with highly iconic graphemes. This involves several areas of the brain, creating numerous connections at the same time.

Given the above, the benefits of SignWriting facilitate learning hearing and deaf people, when performing spelling, it makes the memorization process easier, signaling and records the signals in full. In addition to the benefits of learning for the deaf person, contribute academically to new researchers to delve deeper into the area, expanding the linguistic lexicon and facilitating the development in the language, and in cultural terms it recognizes linguistically as a writing belonging to a people who use sign language.

2.1. SIGNWRITING STRUCTURE

SignWriting has its signage from the signer's perspective, this means that when writing the signs it must be done in the way that is being seen by person who signals and never in the view of the observer, who is the person who visualizes the signage.

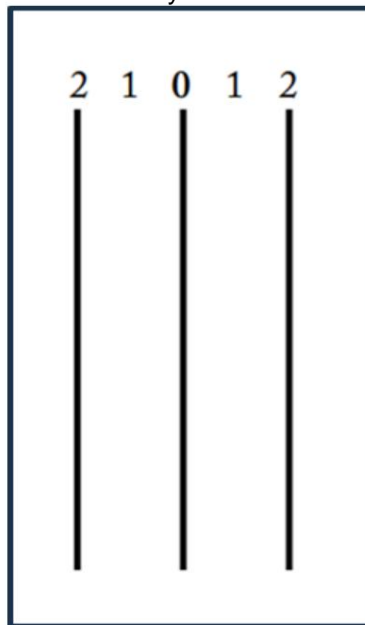
To carry out the writing, it must be done in columns from left to right. right, that is, written vertically. “Studies carried out in the 1990s with deaf users point out that writing in columns from top to bottom, starting from the left, allows a reading very more fast”.

(Barretos;Barretos,2015,p.157) This form of writing structure is coherent because gives the appearance of a person signaling. Thus Barretos and Barretos (2015, p.173) states the benefits of using signals in columns:

Among the many benefits, writing vertically from top to bottom also contributes to these processes: (1) the human body is naturally vertical. We can use the symmetry of the ELS center line (track 0) to position signs more naturally. The eyes will read the signs more easily, as in real life; (2) it is easier to register

and resume changes in body position and also established references.

Figure 3: Column model by Barretos and Barretos



Source: Barretos and Barretos (2015, p.174)

The image above shows how the body position can be represented, where 0 is the central part of the body, where the head can be placed, between 1 and 2 is for the sides, part 2 is taken as the limit as far as it can be signaled. Barretos and Barretos (2015, p.174) [...] “Sign Writing must always be done in vertical, bringing very high gains for reading and writing”.

Another important point to highlight is the writing hand, because when signing the record must be made with the hand with which the user makes the signal, in case that only one hand appears. For left-handed use, research shows that the “best estimate for the prevalence of left-handedness is 10.6%. However, this value varies between 9.3% and 18.1%, depending on how laterality is measure.” (Papadoutou-Pastou, et al.2020) This means that more than 80% of the world population are right-handed, so you should write in SignWriting with your hand right, if you are left-handed you must register with your left.

In SignWriting there is a comma, which when written is called a “short pause⁶”, for the full stop is the “final dash⁷”, the colon is the “statement⁸”.

⁶ (BARRETOS;BARRETOS,2015,p.185)

⁷ (BARRETOS;BARRETOS,2015,p.158)

⁸ (BARRETOS;BARRETOS,2015,p.185)

When using the signal records in SignWriting it is possible to identify the parameters of sign language, perform a phonetic analysis, morphology, syntax, semantics and pragmatics like any other language. Thus, it can be affirmed that SignWriting contributes, as it records signs that were not previously there was a way to spell it.

The research focuses on manual spelling and rhythmic spelling, how the registration will be carried out in SignWriting.

2.2. MANUAL ALPHABET AND RHYTHMIC SPELLING IN SIGNWRITING

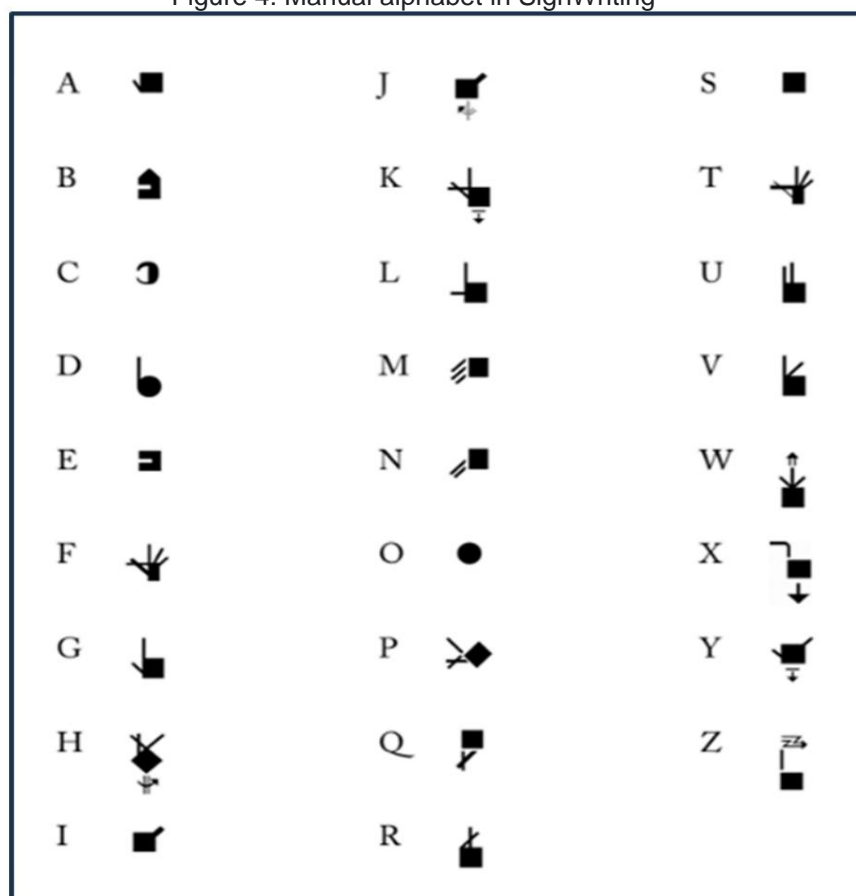
To carry out the writing of the manual alphabet, "it is written at the point of view of the signaler and that we are seeing the back of the hand." (Barretos; Barretos,2015, p.219) Even though many letters are made laterally, however, to be written must be done with the back of the hand, as it was agreed that forms the writing of the language.

Some handshapes or letters are spelled with the hand to low, as in the case of the letters M, N, P and Q, in these situations Barreto and Barreto (2015) states that:

There are two ways to write this type of position. The Top View of the back of the hand can be written at an angle. Many writers feel more comfortable this way because they believe that this writing looks more like real life, since the fingers are pointing downwards.

This applies to all Hand Configurations whose fingers are pointing downwards and whose writing does not demonstrate this so directly (Sutton & Frost, 2011, apud Barreto;Barreto,2015,p.166).

Figure 4: Manual alphabet in SignWriting



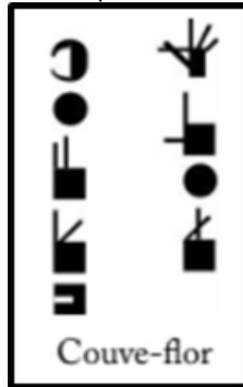
Source: Barretos and Barretos (2015, p. 220)

This manual alphabet spelling model was made a convention for to be standardized, it is possible to find other ways on the internet, however This model follows a rule that all letters are made by looking at the back of the hand.

For the spelling of some words there is the issue of accentuation, therefore in Libras there is an omission, when making the registration according to the signaling the same omission occurs, when translating texts from one language to Libras, if necessary, can perform accentuation, avoiding ambiguity in words. Another rule is when a word ends with $\tilde{A}O$, the tilde (~) must be signaled, "the "O" omitted and the CM used in the accentuation undergoes phonetic alteration-morphological to, incorporating the CM of the "O". If you are transcribing a video to analysis linguistics, write these details".(Barretos;Barretos,2015,p.221). Thus, if it is not for a transcription, you do not need to write the tilde (~). For the spelling record of

words follow the same rule as signs of being made vertically. In case of “compound words or full names must also be written vertically in parallel columns”.(Barretos;Barretos,2015,p.222) The authors Barretos and Barretos (2015) detail examples of how to spell words composed.

Figure 5: Example of a compound word in SignWriting



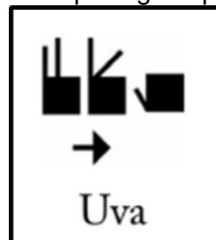
Source: Barretos and Barretos (2015, p. 222)

Compound words follow the same spelling rule as signs, in which must also spell out letter by letter and be displayed in columns. As for the rhythmic spelling the authors Barretos and Barretos (2015, p.222-223) explain:

There is also rhythmic spelling (spelled signs), a quick, short and abbreviated spelling that incorporates signs that emerged from spelling into Libras. In these cases, write exactly how the sign is made. When there is no forward or backward movement and the sign is made in the neutral space in front of the body, write the fingering horizontally and place an arrow to the right (Ground Plane) below it.

In this case for rhythmic spelling there is a rule when performing your record, because the spelling occurs horizontally and below its spelling there is the grapheme with the right arrow, however this form of registration is only possible with signs spelled horizontally.

Figure 6: Example of spelling of spelled signs



Source: Barretos and Barretos (2015, p. 223)

In the case of spelled signs, authors Barretos and Barretos (2015) explain that to record the signals they must be done in a different way, however, the signals they record are only made horizontally, and none of the

signs have circular hand movements, so signs spelled with this rule applies to linear forms. Thus, this research aims to propose an addition to the spelling of these spelled signs.

3. TYPING X RHYTHMIC SPELLING

3.1. ORIGIN OF FINGERPRINTING OR DIGITAL SPELLING

Dactylogy is the combination of the word "datilo" comes from the Latin "dactylus" which means finger, and "logia" of Greek origin which means detailed study of some thing, so fingering is the study of the manual alphabet made with the hands, in which represents the letters.

The first records of fingering were from the attempt to teach oral language to the deaf by the Spaniard Pedro Ponce de León, as well as explains Ramos (1995, p.32):

However, finger alphabets or manual alphabets have a slightly older history, coinciding with the first formal attempts at educating the deaf. The invention of the first known manual alphabet dates back to the 16th century, with the Spaniard Pedro Ponce de León (1520-84), a monk of the Benedictine order who lived in the monastery of Onan in Burgos. The invention was published by Juan Martin Pablo Bonet in 1620 in a book entitled *Reduccion de las letras y artes para enseñar a hablar a los mudos*. Ponce de León's work is recorded in the books of the religious institution, which reports the success of a methodology that included fingering, writing and speech and led his three deaf students to speak Greek, Latin and Italian, in addition to reaching a high level of understanding in physics and astronomy.

In subsequent years it began to be found in other countries, such as "France by Jacob Rodriguez Pereira and subsequently to the United States in 1816 this "one-handed alphabet", which can be recognized as the ancestor of current manual alphabets." (Ramos,1995,p.33)

Fingerprinting was previously widely used to represent words foreign words, proper names and places, this method of representing letters It is also widely used today to represent a word that does not have sign, or new words, and even when you don't know the sign of certain words lexicon. However, there are deaf communities that do not have this method, so as Ramos (1995, p.33-34) states:

There are some deaf communities (the author does not specify which ones) that do not use finger language and can still name the words in question, indicating, according to the author, that oral or written language is not necessary for the specification of these terms. In Brazil

We have one of these communities, researched by Ferreira Brito, the Urubu-Kaapor indigenous tribe from Maranhão, which has a significant number of deaf individuals who do not know the written language. However, those deaf people who live in cities will find it difficult to live with a sign language free from the influence of the spoken language with which they live. Interestingly, some researchers consider this proximity as "destructuring" the Sign Language, based on the concept of "pidgin", which would be the result of its use by hearing people who are not proficient in it or by deaf people who do not have a great command of the Portuguese language in contact. Souza (1992:15) states that oral language ends up inserting its grammatical structures into sign language.

In Brazil we have research focused on Sign Language, specifically the Brazilian one, not being separated from the others. When describing fingerwriting some authors use the term digital spelling, which has the same meaning meaning. According to Capovilla (2019, p. 2613):

SPELL DIGITALLY (sign used in: SP, RJ, CE, SC, RS)
(English: to finger-spell, to perform digital spelling of a word), DIGITAL SPELLING (English: finger-spelling, digital spelling): To spell digitally: vtd To use the manual alphabet to name objects, people, etc. To make use of digital spelling. Ex.: The teacher asked me to spell my name. Digital spelling: sf To use the manual alphabet to name objects, people, etc. Ex.: Finger spelling was first documented in a 1698 publication entitled "Digiti Lingua" which is available at the London library. (Hand vertically open, palm forward, fingers curled. Move it to the right, oscillating the fingers.)

The subtraction process, in Libras, is known as the manual alphabet, which It is used in the development and acquisition of Libras, used for communication between the listener in the process of starting to learn sign language and a deaf person, to so that the listener can spell a certain word in a specific context, so that the deaf person can understand what is being requested.

Fingerwriting in Brazil is done with one hand, in other countries it is carried out with both hands, this happens due to cultural issues and others that were passed on in the teaching process from one country to another. In countries where it is used with both hands this phenomenon occurred because the region was cold and require the constant use of gloves, making it difficult to use just one hand process of articulating the fingers, requiring the use of the other hand.

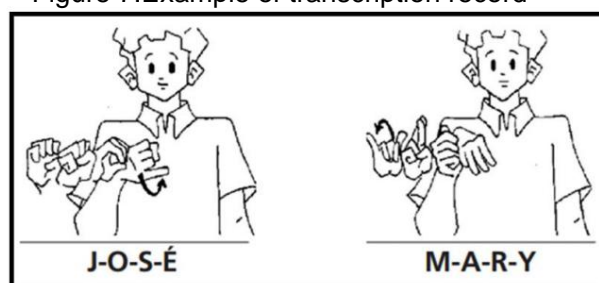
For the education of the deaf, research indicates that fingerwriting (letter spelling) helps deaf children learn to read and write by providing a bridge between written language and sign language. Providing a

better and functional linguistic knowledge in the use of writing and in their language of signs, providing reading and writing.

When recording sign language, many researchers sought ways to catalog the signs, however the author Felipe (2008) with study group developed the “transcription system for Libras”, as in is known, this system has images of the signals and how to register them on paper. This system was developed for teaching listeners who aim to learn sign language and record the signs. There are currently other mechanisms for recording these signals, but the transcription system still is used by “Libras in context”. The author proposes how to register fingerwriting (manual alphabet), which is used to express people's names, locations and other words that do not have a sign, is represented by separate word, letter by letter with hyphen”.(Felipe,2008,p.25)

Thus, when spelling the words and registering them in Portuguese in the transcription system must be placed letter by letter and separated with a hyphen, author presents examples.

Figure 7:Example of transcription record



Source: Felipe (2008, p. 25)

Felipe when performing this method of recording words separated by hyphens describes that it is a spelling.

3.2. RHYTHMIC SPELLING OR MANUAL SPELLING

Sign language has the same linguistic patterns as spoken languages. oral, so it would be no different when talking about linguistic loans⁹ from the Portuguese language in Libras. There are several types of loans, but this

⁹ It will be considered a linguistic loan because it is an oral language, in this case the Portuguese language and the sign language is Libras, which is located in Brazilian territory, what differentiates are the modalities of the language and its specificities, however the deaf person who uses sign language still belongs to the same country as the hearing person.

research will be directed at spelled signs that are a loanword from the language Portuguese, and which should be confused with foreignism¹⁰, which has its linguistic specificities.

Rhythmic spelling is one of the linguistic borrowings in sign language, what differentiates it from fingerwriting is the incorporation of one of the parameters of the language of signs, in this case movement, in this way to be considered a spelling rhythmic must have fast spelling with the use of movements.

To talk about rhythmic spelling there are some authors who use the nomenclature manual spelling, authors Quadros and Karnopp (2004, p.88) state that manual spelling "is not a direct representation of Portuguese, is a manual representation of Portuguese spelling", states that:

In general, all languages, whether spoken or sign, incorporate foreign words into their vocabulary, which are considered linguistic loans. In Portuguese, there are several words from other languages that have been incorporated into this lexicon, such as: abajur, xampu, turismo, jeans, lingerie. (Quadros and Karnopp, 2004, p. 89).

While the manual alphabet is the spelling of letters with the hands, with the purpose of indicating the name of objects or people that do not have a sign or are unknown, rhythmic spelling is different because it is composed of borrowing from the Portuguese language. According to Strobel and Fernandes (1998, p. 36-37) states the following:

Loans from the Portuguese language: some signs are created through spelling, use of the initials of words, copying of the graphic sign due to the influence of the written Portuguese language. These loans undergo formative changes and end up becoming part of the LIBRAS vocabulary.

In this way, the loan from the Portuguese language becomes part of Libras. as a sign, having movement as its main characteristic. According to Felipe (2008, p. 25), states that when "incorporated into Libras, it will be represented by the spelling or part of the letters and will be registered with the letters in italics". The author presents some examples of spelled signs.

¹⁰ It will not be considered a foreign word as it is not an oral language from another country that will be used to represent the signs in Libras.

Figure 8: Example of recording spelled signs in transcription



Source: Felipe (2008, p. 25)

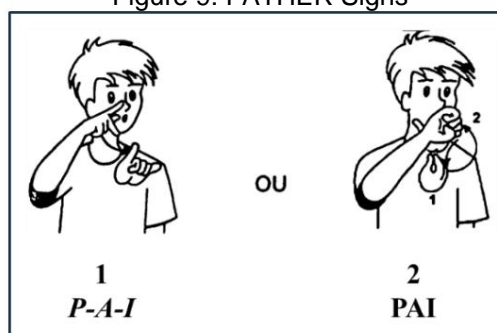
By performing rhythmic spelling and recording it in transcription, it is possible to check the suppression of some letters in some signs. Rhythmic spelling is like a finger dance, in which when performing finger spelling in a way that fast movements must be synchronized, in some cases the letter spelled may gain a different orientation, gain a rhythm, an intonation, many of them receive a movement at the end of the letter, in some cases it happens that letters are suppressed, this phenomenon varies in some cases from region to region. According to Segala and Kojiba (2012, p. 10.) states that:

In Libras, many words, when spelled, turn into signs that have their own rhythm. It is the timbre of the words, a spelling with a distinct form and rhythm. With their own movements and almost always with the suppression of letters, the word is signed with the support of the manual alphabet. [...] This signage is related to regional diversity and can vary according to the habits and characteristics of each place. In rhythmic spelling, the movement and articulation of the hands are very important.

To perform rhythmic spelling, the user must have practical knowledge of the language, as it is not simply about doing the alphabet manually, it has the parameters that must be followed.

The spelling signal can happen before the sign is made, that is, it can be reproduced rhythmically and then given a specific signal that is not spelling with specific characteristics.

Figure 9: FATHER Signs



Source: <https://pt.scribd.com/document/94605369/FAMILIA-E-CONDICAO-CIVIL-Libras>

In *PAI* (1) is a spelling sign, which is used in some regions of the country, to make its record in the transcript it must be in italics and separated by hyphen, while **FATHER** (2) is a sign, its registration must be in capital letters, both father forms are used.

Rhythmic spelling allows the introduction of new terms and concepts that may not have specific signs in Libras, and may have started as rhythmic and later transformed into a signal, but nothing implies the use of both. This enriches users' vocabulary, allowing communication more comprehensive and accurate, it values linguistic variation. In addition, spelling can be a tool for creating new signals, contributing to the continuous evolution of the language.

4. TRANSCRIPTION OF SPELLED SIGNS

To carry out this research, 28 spelled signs were selected that have horizontal (lateral/forward) and horizontal/circular movements. We will use the SignWriting system to present the spelling of rhythmic spelling and describe how these signals can be recorded, taking into account those using sign language in the city of Cacoal-RO.

Horizontal movements

Below are the signs that have horizontal spelling. following the rule of writing signs. For the use of the image record of the signs of this movement follow a straight movement arrow(→) to indicate that spelling is done on the side.

Figure 10: Spelled out sign for MARCH



Source: Research data

When performing the rhythmic spelling of MARCH, some of the words are suppressed. letters, as is the chaos of the letters A and R, in this situation it has phonetic losses, in In some regions only A is lost. In the city of Cacoal it is carried out with M, Ç and O, being reproduced on the side, following the SignWriting spelling.

Figure 11: Spelled out VOV@ sign



Source: Research data

When performing the rhythmic spelling of the VOV@ sign, there is no loss phonetics. In the city of Cacoal it is performed with all phonemes, being reproduced on the side, following the SignWriting registration rule.

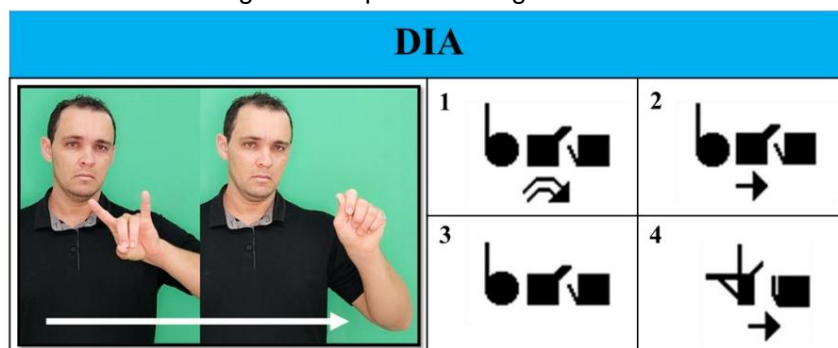
Figure 12: Spelled out sign of VAI



Source: Research data

When performing the rhythmic spelling of the VAI sign, there is no phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

Figure 13: Spelled out sign for DAY



Source: Research data

When spelling the DAY sign it is initially reproduced with the hand configuration in D and I, moving to the side and making the letter A. Signpudlle was used to verify its spelling, and three options were found.

1 – Note that there is no grapheme that describes the spelled sign, presenting only the semicircular movement grapheme. 2 – It is possible to verify the spelled sign grapheme. 3 – The spelling grapheme is absent. 4 – Spelling used according to the reproduction in the city of Cacoal, its spelling somehow does not have the suppression of no phonemes, but does not have the spelling of the letters of individual form.

Figure 14: Spelled sign for MOTHER



Source: Research data

When performing the rhythmic spelling of the sign MOTHER, there is no phonetic loss, being performed horizontally, however when writing the sign does not take accentuation of the tilde (~). In the city of Cacoal it is performed with all phonemes, being reproduced on the side, following the SignWriting registration rule.

Figure 15: Spelled out OBA sign



Source: Research data


When performing the rhythmic spelling of the OBA sign, there is no phonetic loss, being performed horizontally, but its reproduction has a movement semicircular () upwards, in this way a new grapheme was added to the sign spelled, for a more objective understanding of how spelling occurs, if fitting into the rhythmic spelling. In the city of Cacoal it is performed with everyone the phonemes, being reproduced on the side, following the registration rule of SignWriting.

Figure 16: Spelled out SAL sign



Source: Research data

When performing the rhythmic spelling of the SAL sign, there is no phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

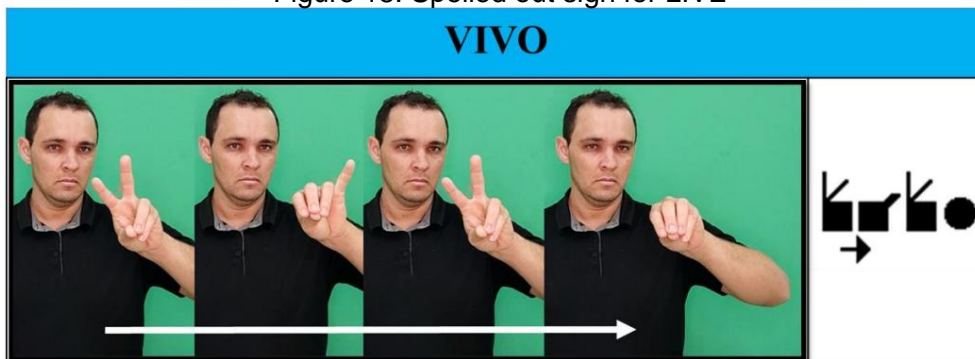
Figure 17: Spelled out sign of MAL



Source: Research data

When performing the rhythmic spelling of the sign MAL, it does not have phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

Figure 18: Spelled out sign for LIVE



Source: Research data

When performing the rhythmic spelling of the sign VIVO, there is no phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

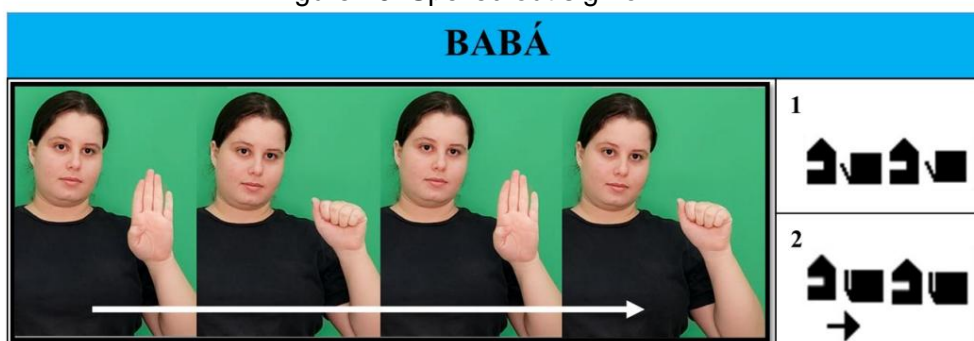
Figure 18: Spelled out EGG sign



Source: Research data

When performing the rhythmic spelling of the OVO sign, there is no phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

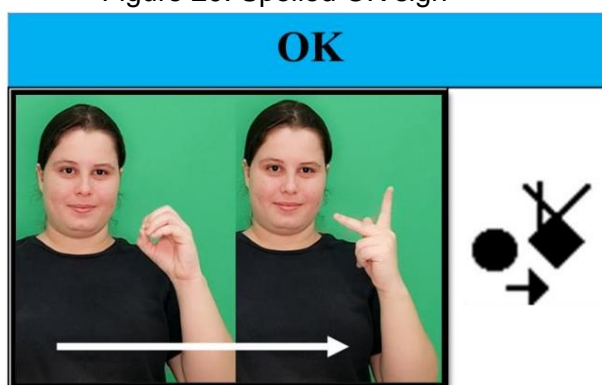
Figure 19: Spelled out sign of BABA



Source: Research data

When performing the rhythmic spelling of the sign BABÁ, there is no phonetic loss, being done horizontally, but when spelling the word in writing does not have an accent on the acute (´). Option 1 – carried out the research in SignPuddle found no spelling of sign spelled. 2 – is the spelling following the SignWriting registration rule, being carried out in the city of Cacoal, reproduced on the side, without any phonetic loss.

Figure 20: Spelled OK sign



Source: Research data

When performing the rhythmic spelling of the OK sign, it has phonetic loss of movement of K, in which the signal is carried out horizontally, even with loss of phoneme does not interfere with the understanding of the sign. In the city of Cacoal it is reproduced on the side, following the SignWriting registration rule.

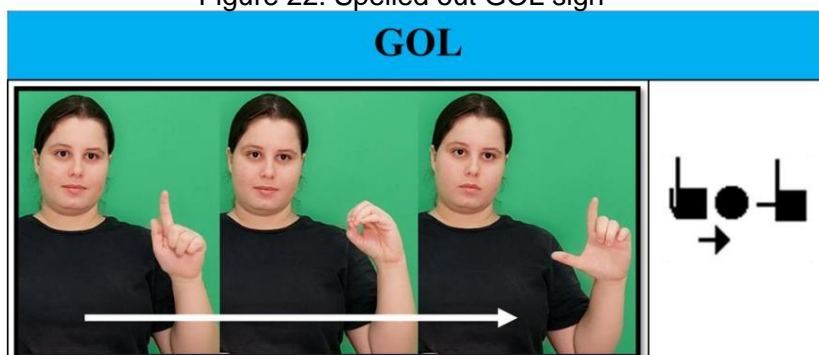
Figure 21: Spelled sign of CEDO



Source: Research data

When performing the rhythmic spelling of CEDO, one letter is omitted, being the letter E, in this situation it has phonetic loss. In the city of Cacoal it is performed with C, D and O, being reproduced on the side, following the spelling of SignWriting.

Figure 22: Spelled out GOL sign



Source: Research data

When performing the rhythmic spelling of the GOL sign, there is no phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

Figure 23: Spelled out sign for JUICE



Source: Research data

When performing the rhythmic spelling of the SUCO sign, it has no loss phonetics, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced on the side, following the registration rule of SignWriting.

Figure 24: Spelled out GAS sign




Source: Research data

When performing the rhythmic spelling of the GAS sign, there is no phonetic loss, being carried out horizontally. In the city of Cacoal it is carried out with all phonemes, being reproduced laterally, following the registration rule of SignWriting.

Figure 25: Spelled out VIXE sign



Source: Research data

When performing the rhythmic spelling of the VIXE sign, there is no phonetic loss, being performed horizontally, but when reproducing the letter X you need to add the down arrow (), in this way a grapheme was added to the spelled sign, for a more objective realization of how spelling occurs, if fitting into the rhythmic spelling. In the city of Cacoal it is performed with everyone the phonemes, being reproduced on the side, following the registration rule of SignWriting.

Forward movements


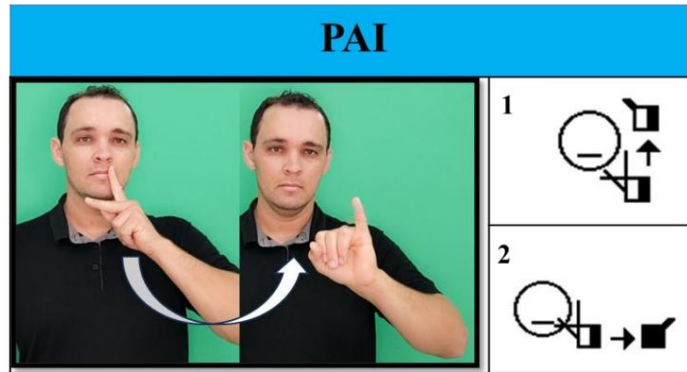
Below are the signs that have horizontal spelling, but with forward movements, with some graphemes being added, to thus making the realization of the spelled sign clear. For the use of the register of the image of the signs of this movement follows a movement arrow semicircular() to indicate that the spelling is done forwards.

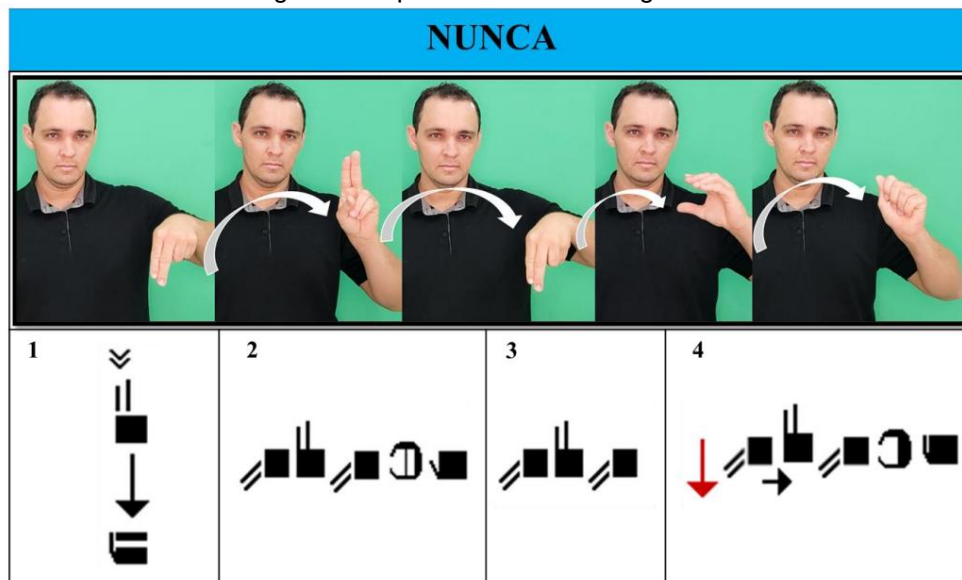
Figure 26: Spelled sign for FATHER



Source: Research data

When performing the rhythmic spelling of PAI it fits into the spelled signs, however, when registering it, there is an agglutination of phonemes, but what remains in evidence is I, but being possible to identify A. During the research it was consulted SignPuddle and found both versions, 1 – it can be described as fits more into the sign than the spelling. 2 – Fits more into the spelling rhythmic because it is described horizontally and because it has an arrow that directs it so much that the movement goes forward and that is a spelled sign. In the city of Cacoal it is a well-used spelled sign.

Figure 27: Spelled out NEVER sign



Source: Research data


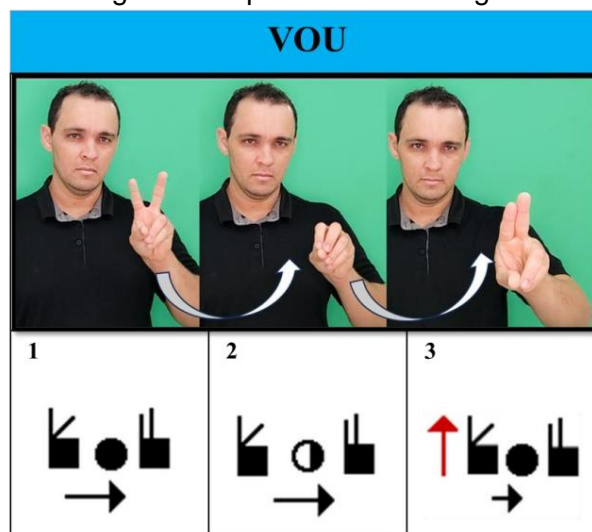
To perform the rhythmic spelling of NEVER it fits into the signs spelled, as a form of registration it is possible to see that it does not have any phonetic loss. During the research, SignPuddle was consulted and found some forms of spelling. 1 – it is possible to verify the loss of phonemes in the spelling, as well as its registration does not follow the patterns of spelled signs. 2 – It has the registration patterns, but the spelling is missing a grapheme which is the arrow that indicates a spelled sign. 3 – Find the spelling rule, however it is possible check for the loss of phonetic elements such as the letters C and A. 4 – Record made by the authors of the article as a form of suggestion for spelling, in which all the phonemes, the rhythmic spelling registration rule and a long arrow () to indicate that the sign is spelled and moves forward. In the city of Cacoal it is a well-used spelled sign.

Figure 28: Spelled out VOU sign

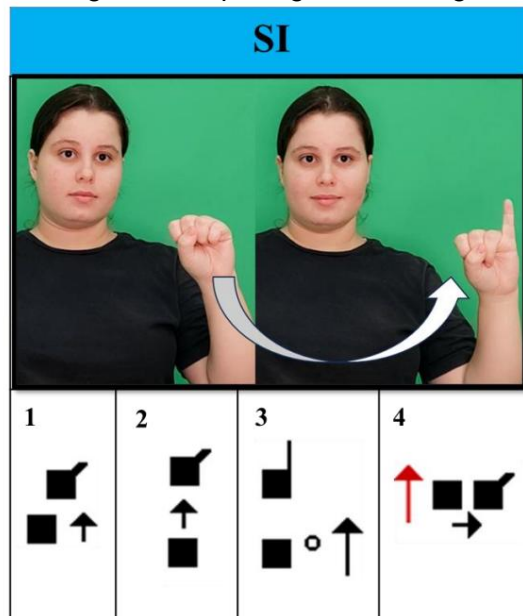


Source: Research data

To perform the rhythmic spelling of VOU it fits into the signs spelled, as a form of registration it is possible to see that it does not have any phonetic loss, when playing it does not follow the side, but rather the front horizontal. During the research, SignPuddle was consulted and found some ways to spelling. 1 – it is possible to verify that there is no loss of phonemes in the spelling, however its spelling goes forward and not laterally. 2 – It has the registration patterns, but in the spelling one of the phonemes is altered, the O has changed its orientation. 3 – Registration carried out by the authors of the article as a form of suggestion for spelling, in which puts all the phonemes, the rhythmic spelling record rule and a long arrow

(→) to indicate that the sign is spelled out and moves forward. In the city from Cacoal it is a well-used spelled sign.

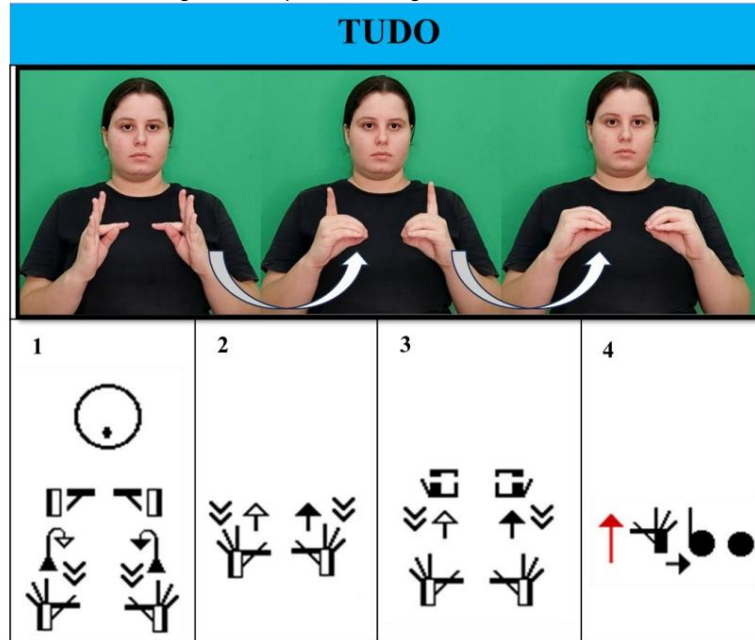
Figure 29: Spelling of the SI sign



Source: Research data

To perform the rhythmic spelling of SI (SE) it fits into the spelled signs, as a form of registration it is possible to see that it does not have any phonetic loss, when playing it does not follow the side, but rather the front horizontal. During the research, SignPuddle was consulted and found some ways to spelling. 1 and 2 – it is possible to verify in the spelling that it does not follow the registration rule of a spelled sign, being more indicated as a sign. 3 – does not follow the rule of spelling, has loss of phonetic elements and added the movement of another hand configuration (index finger). 4 – Record made by the authors of the article as a form of suggestion for spelling, in which it places all the phonemes, rhythmic spelling record rule and a long arrow (→) to indicate that the sign is spelled and moves forward. In the city of Cacoal it is a sign spelled well used.

Figure 30: Spelled out sign for EVERYTHING



Source: Research data

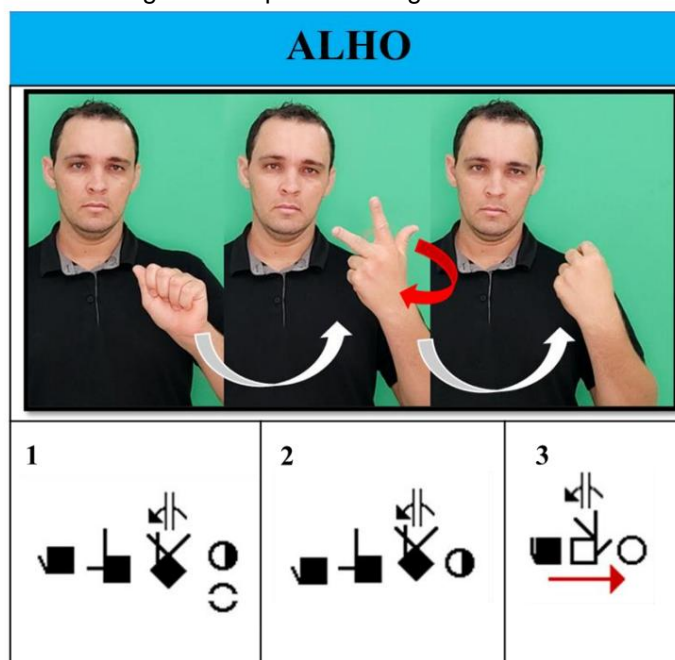
To perform the rhythmic spelling of EVERYTHING it fits into the signs spelled, when recorded in image it is possible to see that it has phonetic loss, in which the U is suppressed in the movement of the other letters. During the research SignPuddle was consulted and found some spellings. 1 – it is possible check the spelling for the loss of phonemes, as well as how their registration does not follow the patterns of spelled signs, being classified as a sign, as it has the addition of a parameter (facial expression). 2 – there is also phonetic loss of letters U,D,O, fitting as a sign and not a rhythmic spelling. 3 – it is possible to verify the loss of phonetic elements such as the letters U, D and O, and another was added phoneme. 4 – Record made by the authors of the article as a form of suggestion for spelling, in which all phonemes are placed, the spelling record rule rhythmic and a long arrow (→) to indicate that the sign is spelled out and moves forward. In the city of Cacoal it is a well-used spelled sign.

Circular movements

Below are the signs that have horizontal spelling, but with circular movements, without adding any grapheme, with just an elongation of the grapheme that describes the spelled sign, in order to make the realization of the spelled sign clear. To use the register of image of the signs of this movement follows a semicircular movement arrow

(↻) to indicate that the spelling is done in a circular fashion.

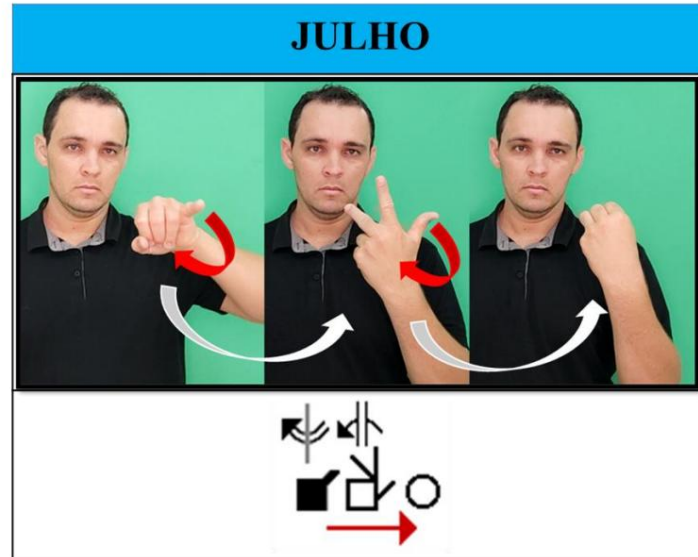
Figure 31: Spelled out sign for GARLIC



Source: Research data

In performing the rhythmic spelling of GARLIC it fits into the signs spelled, when recording the sign, an agglutination of letters becomes perceptible, modifying the hand configuration, when playing it does not follow the side, being carried out in a circular manner due to the process of agglutination of the letters L and H. During the research, SignPuddle was consulted and found some ways to spelling. 1 – it is possible to verify in the spelling that there is no spelling grapheme and a addition of phoneme. 2 – It follows the spelling order, but does not have the spelling spelling. 3 – Record made by the authors of the article as a way of suggestion for spelling, in which you place the phonemes according to the reproduction of the agglutination, the rhythmic spelling record rule and a long arrow (→) below of the letters to indicate that the sign is spelled out and moves in a circular fashion, in that the final phonemes are not directed at the reader but at the signer. In city of Cacoal it is a well used spelled sign.

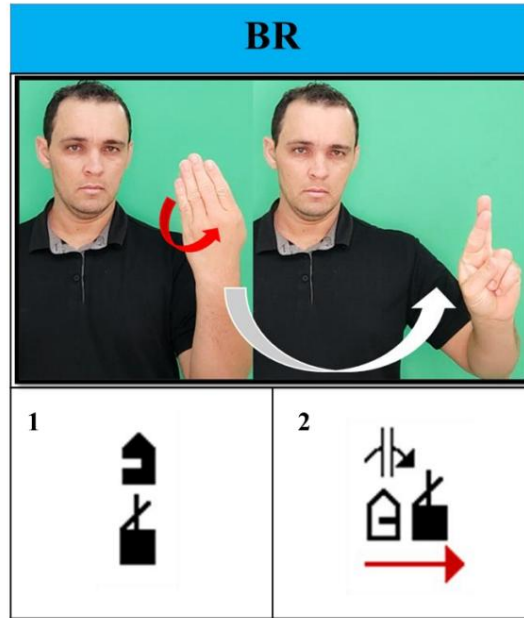
Figure 32: Spelled sign for JULY



Source: Research data

In performing the rhythmic spelling of JULY it fits into the signs spelled, when recording the sign, an agglutination of letters becomes perceptible, modifying the hand configuration, when playing it does not follow to the side, being carried out in a circular manner due to the process of agglutination of the letters L and H, there is phonetic loss of the letter U. Record made by the authors of the article as form of suggestion for spelling, in which the phonemes are placed according to the reproduction of agglutination and phonetic loss, the spelling record rule rhythmic and a long arrow (→) below the letters to indicate that the sign is spelled out and moves in a circular fashion, in which the final phonemes are not directed to the reader and yes to the signaler. In the city of Cacoal it is a sign spelled well used.

Figure 33: BR spelled out sign



Source: Research data

In performing the rhythmic spelling of BR it fits into the spelled signs, when registering there is no phonetic loss. During the research the following was consulted: SignPuddle and found some spellings. 1 – you can check the spelling that does not have the spelling grapheme and is performed as a sign. 2 – Record carried out by the authors of the article as a form of suggestion for spelling, in which places the phonemes according to the reproduction, the spelling record rule rhythmic and a long arrow (→) below the letters to indicate that the sign is spelled out and moves in a circular fashion, in which the initial phoneme is not directed to the reader and yes to the signaler, promoting a movement. In the city of Cacoal it is well used spelled sign.

Figure 34: AR spelled sign



Source: Research data


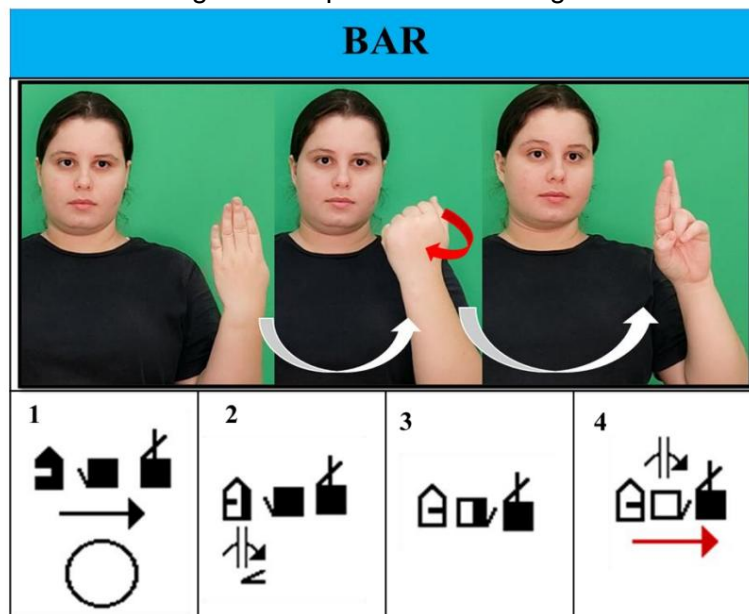
In performing the rhythmic spelling of AR it fits into the spelled signs, when registering there is no phonetic loss. The spelling used by the authors of the article as a form of suggestion, in which it places the phonemes according to the reproduction, the rhythmic spelling record rule and a long arrow () below of the letters to indicate that the sign is spelled out and moves in a circular fashion, in that the initial phoneme is not directed at the reader but at the signer, promoting a movement. In the city of Cacool it is a well-used spelled sign.

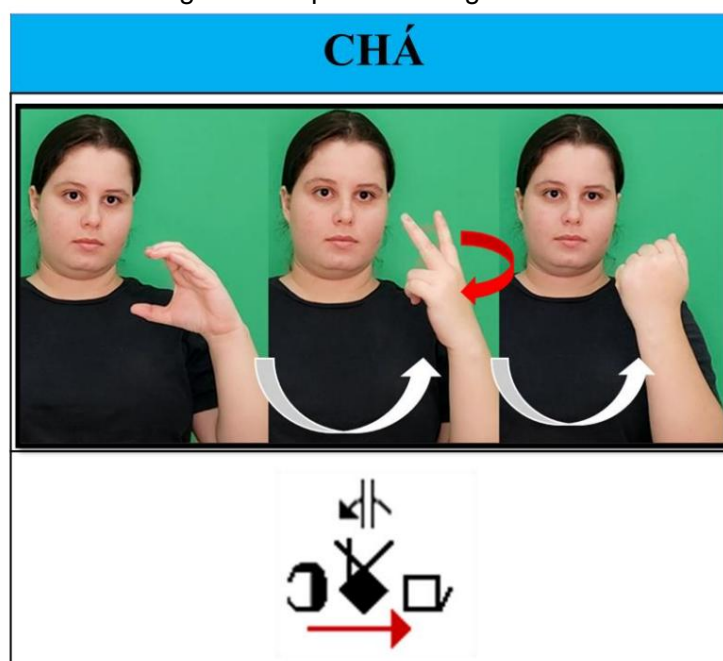
Figure 35: Spelled out BAR sign



Source: Research data

In performing the rhythmic spelling of BAR it fits into the signs spelled, when registering there is no phonetic loss. During the research it was consulted SignPuddle and found some spellings. 1 – it is possible check in the spelling that it is performed as a sign, having the addition of the parameter of the face. 2 – It has the phonemes, but in the spelling there is no arrow that indicates the sign spelled, has indicating that the movement of the hands occurs in a circular manner. 3 – follows the registration rule but does not have the spelling arrow and nothing indicates that the spelling has movement. 4 - Record made by the authors of the article as form of suggestion for spelling, in which the phonemes are placed according to the reproduction, the rhythmic spelling record rule and a long arrow (→) below of the letters to indicate that the sign is spelled out and moves in a circular fashion, in that the initial phoneme is not directed at the reader but at the signer, promoting a movement. In the city of Cacoal it is a well-used spelled sign.

Figure 36: Spelled out sign for TEA



Source: Research data

In performing the rhythmic spelling of TEA it fits into the signs spelled, when registering there is no phonetic loss. The registration carried out by authors of the article as a form of suggestion for spelling, in which they place the phonemes according to the reproduction, the rhythmic spelling record rule and an arrow long (→) below the letters to indicate that the sign is spelled out and moves in a circular way, in which the final phoneme is not directed at the reader but rather at the

signal, promoting a movement. In the city of Cacoal it is spelled signal well used.

ANALYSIS AND RESULTS

The research was developed based on bibliography with the aim of demonstrate through sign language writing what SignWriting is like presented the signs spelled in Libras in the city of Cacoal, the signal description each signal, showing the picture of how the signal is performed and the recording in sign writing. For data collection we used the search instrument by signs spelled out in books, theses, dissertations, articles and in handouts academic. To make some signs, some additional elements were added graphemes as a form of suggestion to promote clarity in information.

In the selection of books, readings were carried out that address the content of spelling, typing and sign writing, then prioritizing those that report on the spelled signs. After selecting the books identified the spelled signs that are used in the city of Cacoal, to choose the signs were given to those who visually are more used.

To perform the spelling, the book *Escrita de Sinais sem mistério* and the SignPuddle platform were used, which includes the presence of many registered signs by researchers in sign writing.

In the Portuguese language it is necessary to know how words are written, Libras is also important to know how these records happen, because through of language a person recognizes himself as a subject belonging to a group, the deaf subject has his development and withdrawal of his culture when know your language and grammar. Strobel (2008, p. 44), describes the Language of signs as follows:

Sign language is one of the main marks of the identity of a deaf people, as it is one of the peculiarities of deaf culture, it is a form of communication that captures the visual experiences of deaf individuals, and it is this language that will lead the deaf person to transmit and provide them with the acquisition of universal knowledge.

Just as language is necessary for belonging to the world in that lives, and because it is a visual-gestural language, the need for these records of written form is necessary so that information is not lost and can be passed down from generation to generation and analyzed by others researchers.

FINAL CONSIDERATIONS

The spelling of these signs spelled in SignWriting becomes important for the recording of signs and giving the belonging of a community, the research comes to contribute to new researchers of the language, mainly from Cacoal – Rondônia, where they can feel included in the system where little is produced articles focused on the area in the state.

Considering that Libras is used throughout the national territory and many these spelled signs are used in specific regions helps the publication of new research, such records become of such importance, as contributed significantly to the academic development and construction of new productions focused on Libras.

Although this registration system is little used by the community academic in the city of Cacoal, it is necessary to have more research in the area that drive new publications. What seems like a merely academic record, contributes like a grain of rice within a plantation, gains more and more strength.

The research was carried out through meetings between researchers, discussions about which signs would fit and how it should be done, the writing was shared and dreamed of by researchers who study the topic and experience in the classroom, highlighting that the research is of a bibliographical nature-descriptive.

Thus, when SignWriting is used, it contributes to the education of deaf people in Brazil. and Cacoal, the area has been publicized and gaining followers and new research, the creation of the Libras course in Rondônia helped to publicize and more people learning to use the language, benefiting deaf people Libras user, who needs linguistic accessibility. This aims to that there are more academics researching SignWriting in parallel with the use of language, who can be propagators of Libras and Deaf Culture.

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