

International

REPORT



**Study III – Development
and knowledge of Physical
Education and sports
vocabulary of sign language
interpreters**







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Table of Contents



Introduction.....	1
Methodology.....	5
Participants.....	5
Questionnaire and data collection.....	9
Data analysis.....	11
Results.....	13
Interpretation in Physical Education.....	13
Preparation of the communication process.....	15
Resources for updating vocabulary.....	19
Conclusion.....	23
Bibliography.....	27

Introduction



Sign Language (SL) interpreters are indispensable in supporting the participation of the Deaf within a society that is essentially dependent on verbal communication (Fischer & Woodcock, 2012). According to Masutti & Santos (2008), the development of this activity is not recent and there is evidence in the literature that SL interpretation and the presence of the interpreter date back to the early twentieth century in France, a country where the historical development of deaf education left relevant marks. It was common for the hearers who were recruited to perform this task to be the hearing children of deaf adults (CODA), relatives or neighbors, considering that the contact they had with SL made it easier for them to carry out this task. However, these situations were occasional and sporadic, and not of professional nature. (Fernandes & Carvalho, 2005).

Fernandes & Carvalho (2005) state that the SL interpreters' roles have had several models and that it is currently possible to find professionals with academic training and preparation to work within a linguistic reality that is different from their own, one which requires being acquainted with situational and cultural factors, such as knowledge of the Deaf community and relevant aspects that constitute important references for Deaf people. According to these authors, this involvement is indispensable for effective interpretation, and has subsequently led to the Bilingual and Bicultural Model of interpreting, where the interpreter should not only be able to understand the specific needs of the Deaf, but also a communication facilitator, adjusting the

communication process to the degree of understanding of the interlocutors, using appropriate translation methods and strategies, as well as using languages in order to clearly, accurately and faithfully convey the content, meaning, emotion and essence of Deaf people's message.

The interpretation service can be provided in various social settings and has revealed to be essential in communication, especially within a school environment. Classes taught by hearing teachers who are not fluent in SL are translated by interpreters. As such, interpretation represents an essential support service for many deaf students.

The subject of Physical Education plays a pivotal role in the academic training of students. In many schools, this class is takes place in an inclusive environment where deaf and hearing students share the same space, the same tasks and many times, the same instructions. As a result of the studies conducted by several researchers (Butterfield, 1987; Dummer et al., 1996; Hopper, 2006; Sarmiento et al., 2016; Stewart et al., 1990) in the assessment of deaf children and young people's motor proficiency, there has been growing concern about the diversity of communication systems used in Deaf education. The fact that communication is essentially visual in the physical education class may lead teachers who are not fluent in SL to many times provide verbal instructions and supplement them with signs, demonstration, mimicry or other visual aids. This sometimes results in incomplete and fragmented information, leading deaf students to carry out the tasks not because they understand the

instruction, but by imitating their peers' movements.

Best et al. (2002) state that the improvement of deaf students' motor skills and the learning of the subject content requires good communication and that teachers should establish effective collaboration with interpreters. Additionally, interpreters should be prepared to carry out their translation/interpreting tasks in physical education and learn sport-specific signs. The teaching of physical education involves a number of variables which, in many situations, are not present in other school subjects. Classes take place in different spaces, where students are usually scattered, often in motion, facing backwards, or focused on a particular activity, preventing them from seeing the interpreter and the teacher. According to Best et al. (2002), ensuring good communication within a classroom space should be guaranteed by teachers, interpreters, deaf students and their hearing peers. This means that responsibility is assigned to each of these groups, and teachers must commit to providing the lesson plans for the course unit they will teach in advance, so that the deaf student and the interpreter can have access to them and prepare beforehand. Interpreters, in turn, should adapt their language to students' preferred communication style and should, among other requirements, show up wearing the appropriate equipment, position themselves in order to ensure effective communication, preferably next to the teacher, know the rules of the sport being taught and learn signs for sports. Many times, preparation time is required to

consult/research unknown vocabulary. As for the deaf students, they should participate in class, intervene whenever they consider necessary, interact with other classmates and not only with the interpreter or with other deaf peers, they should inform the interpreter of where to correctly position himself when instruction is being given, in order to better visualize the demonstration and the instructions. Additionally, when in doubt they should always ask questions. Best et al. (2002) also mention that hearing peers have the responsibility of facilitating communication by facing their deaf classmates, of learning SL to communicate with deaf peers, of repeating instructions and demonstrations, as well as taking on the role as peer tutors if necessary. According to Storey & Jamieson (2004), the importance of vocabulary has been stressed as an essential component in interpretation quality and its development should be continuous, along with professional development.

There are currently several resources available for interpreters to use in order to update and improve their vocabulary, including dictionaries, videos or online dictionaries. As for printed dictionaries, the majority were produced by hearing professionals to provide hearing teachers and parents with signs for specific words, simple words and other words used in everyday life. They were monolingual dictionaries from written language to SL, in which the written word and a photograph or illustration of the interpreter producing the corresponding sign was presented.

Nowadays, besides dictionaries, resources include a set of pedagogical tools that have become accessible to teachers and students as important aids to their linguistic-cognitive, emotional and social development (Brocardo, 2009).

The gaps that have been identified in sign language vocabulary for physical education classes and the need to improve the language as a working tool has led us to question how sign language interpreters keep themselves updated and how they prepare the conditions for the communication process. Thus, this study aims to: i) characterize the interpreters who work in physical education classes; ii) know how they prepare the conditions of the communication process; iii) identify the resources they use to learn new vocabulary and know the degree of satisfaction related to these resources.

Methodology

Participants



A total of 101 sign language interpreters participated in this study from the partner countries that are part of the Sportsign project: Portugal, Spain, Italy, Slovenia and Germany. In the case of Germany, questionnaires were not completed because the partners were from a deaf school where there were no sign language interpreters. Of the participants, 95 were female, 3 were male, and 3 preferred not to answer this question. Table 1 contains the distribution of participants by country.

Table 1 – Distribution of the sample per gender and age (medium and deviation pattern)

Gender	Italy (n=25)		Portugal (n=46)		Slovenia (n=11)		Spain (n=19)		Prefer not to answer
	Male	female	Male	female	Male	female	Male	female	
n(%)	2(8)	23(92)	-	46(100)	1(9)	10(90)	-	16(84.2)	3(15.8)
Age (X±sd)	51	38±7.37	-	32.30±5.18	43	41.3±11.7	-	42.3±2.9	38.7±1.9
Total average	39.04±7.9		32.30±5.18		41.45±11.2		41.73±3.07		

For sample characterization, the following variables were considered: age gender, degree of kinship with deaf family members, age when started learning SL, experience working with deaf people, academic background and professional experience.

Table 2 – Sample characterization.

		Italy (n=25)	Portugal (n=46)	Slovenia (n=11)	Spain (n=19)	Total (n=101)
deaf family	yes	14(56)	3(6.6)	5(45.5)	-	22(21.8)
	n (%)	11(44)	43(93.4)	6(54.5)	19(100)	79(78.2)
degree of kinship (n)	parents	12	1	5	-	
	Mother/father	-	1	-	-	
	brothers	-	-	1	-	
	other	2	1	1	-	
stage of human growth	infancy	4(16)	2(4.3)	4(36)	-	10(9.9)
	childhood	-	1(2.2)	2(18)	-	3(2.9)
	n (%)	5(20)	5(10.9)	1(9)	3(15.8)	14(13.9)
	adolescence	16(64)	38(82.6)	4(36)	16(84.2)	74(73.3)
years' experience n(%)	[1-5 years]	5(20)	13(28.3)	6(54)	4(21.1)	28(27.7)
	[6-10 years]	10(40)	10(21.7)	3(27)	6(31.6)	29(28.7)
	[11-15 years]	3(12)	19(41.3)	-	3(15.8)	25(24.8)
	[16-20 years]	4(16)	4(8.7)	1(9)	4(21.1)	13(12.9)
academic degree n(%)	[>20 years]	3(12)	-	1(9)	2(10.5)	6(5.9)
	bachelor's degree	7(28)	23(50)	-	5(26.4)	35(34.7)
	post bachelor's degree	8(32)	5(10.9)	-	7(36.8)	20(19.8)
	master's degree	10(40)	18(39.1)	-	7(36.8)	35(34.7)
	doctoral degree (PhD)	-	-	-	-	
	other	-	-	11(100) ¹	-	11(10.8)

The average age of the respondents was 38.7 ± 7.7 years, with an average professional experience of approximately 10.7 years. Interpreters from Italy (56%) and Slovenia (45.5%) reported having Deaf relatives, their parents and other relatives, which certainly provided them with early contact with SL and Deaf role models. All interpreters from Spain and 93.4% of the Portuguese interpreters reported not having deaf relatives. Seventy-four (73.3%) interpreters mentioned having learned SL in adulthood, 10 (9.9%) in infancy, 3 (2.9%) in childhood, and 14 (13.9%) in adolescence. Regarding years of experience in the profession, 28.7% of the interpreters had between 6 and 10 years of experience and only 5 had more than 20 years of experience. As for academic training, 34.7% had Bachelor's and Master's degrees. The "other" category includes interpreters from Slovenia who, despite their academic training in other fields, were holders of the national interpretation certification.

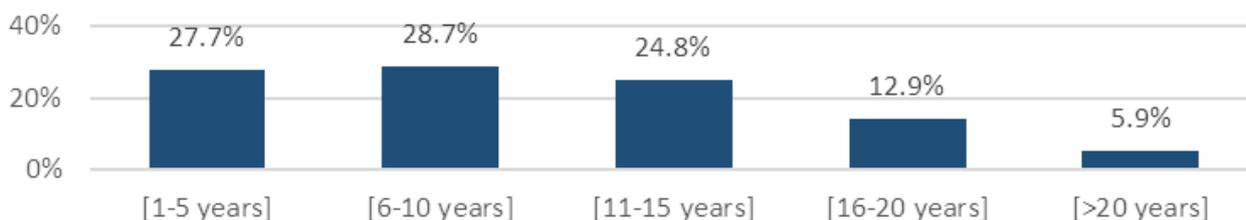


Figure 1 - Years' experience.

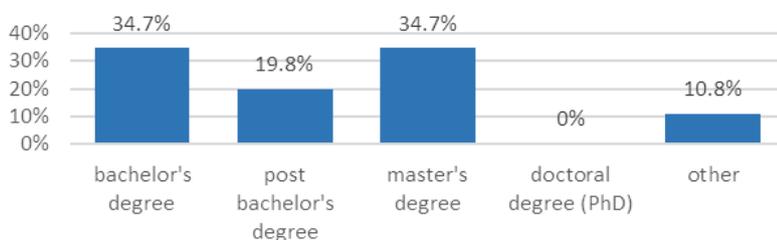


Figure 2 – Academic degree.

¹ (Author's note) In the Slovenian system we do not have Sign language studies at Universities so it is impossible to obtain an academic degree in SSL. All the interpreters had only special official (state) certificate - to be an interpreter in Slovenia it is enough to conclude ordinary secondary school (high school) and pass the state exam for interpreting.



Questionnaire and data collection



This study administered a questionnaire which resulted from an adaptation of the Survey Educational Interpreter Questionnaire used by Storey & Jamieson (2004) due to the similarities with the purpose of our research. It was conducted with educational interpreters in British Columbia and aimed to determine the demographic characteristics of the interpreters and to identify the resources they used to learn new vocabulary and rate the viability of using these resources as a development tool for this purpose. The modification of some questions resulted from a synthesis of ideas, based on Portuguese legislation and literature. Some questions were added, while others were eliminated when they did not correspond to the purpose of our research. After this adaptation was made, we resorted to validation through expert judgement. The first assessment was carried out by an interpreter with extensive experience in physical education interpreting at various educational levels. In a second phase, and in order to verify its applicability, the piloting and completion of the questionnaire was carried out by 3 interpreters. After all doubts were clarified, the questionnaire was analyzed by the project partners to clarify the objectives and the terminology used, and to adapt it to the context of each country. The final version of questionnaire was adopted after confirmation that it ensured clarity and easy understanding of all the questions. It was organized in 3 parts with closed-ended, multiple choice and some questions on a 5-point Likert scale.

The first part of the questionnaire aimed to collect the socio-demographic data of the sample. Personal and professional factors such as age, gender, interpreting experience, educational background in SL, family background, and the period of SL acquisition were taken into consideration

The second part, which consisted of 8 questions, asked about the preparation of the communication process in physical education and the perception of the aspects considered most demanding for interpretation during classes.

The third part was structured into 10 items, referring to the resources available for vocabulary improvement, with the aim of assessing how often they were used and satisfaction towards their usage. The questionnaire was applied after the required approval was obtained from the Ethics Committee of the University Institute of Maia - ISMAI and it was then translated into the national languages of the project's partner countries (Portuguese, Spanish, Italian, Slovenian and German).

Data analysis



Descriptive statistics were used to analyze the collected data, including absolute and relative frequencies, measures of central tendency (arithmetic mean) and measures of dispersion (standard deviation). The topics covered in the research included: i) interpretation in physical education; ii) preparation of the communication process; and iii) resources for acquiring/updating vocabulary.

Results

Interpretation in Physical Education



Of the 101 interpreters who answered the questionnaire, only 54 (53.47%) were interpreting in physical education classes on average twice a week, although this varied less frequently between 1 and 5 times a week. In the case of Slovenia, the interpreters did not interpret in physical education classes, so the results presented refer to the questionnaires from Italy, Portugal and Spain.

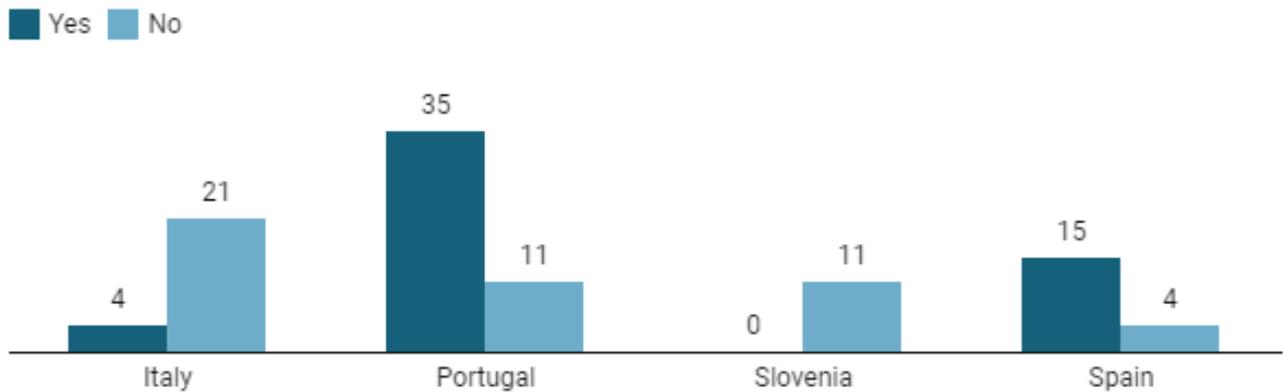


Figure 3 – Number of interpreters by country who translated in Physical Education classes

The data presented in Table 2 present the information obtained in the 54 questionnaires. As shown, the experience of interpreting in physical education classes ranged from 1 to 16 years. The Portuguese interpreters had an average experience of 8 ± 4.42 years, the Spanish 5 ± 3.74 years, and the Italians 3.5 ± 1.5 years of experience.

Preparation of the communication process



Regarding the preparation of the communication process, the interpreters were asked to estimate the number of times during a single week that they were provided with materials in advance, a lesson plan, reading material or information about the content being taught. The data is presented by frequency of response (absolute and relative). Table 3 shows that 68.5% of the interpreters refer they were never provided with any kind of material, 24.1% mention they received it approximately once a week, 5.6% about twice a week, and only 1.9% refer they received it about 5 times a week.

Next, they were asked to estimate again the number of times/week they came across a physical education word or concept whose SL word was unknown to them. It was found that 72.2% of interpreters estimated that this situation occurred between 1-3 times/week, 11.1% of interpreters estimated that it occurred between 4-6 times/week, and for 13% of interpreters this situation never occurred.

Table 3 – Preparation of the communication process in Physical Education*

		Italy (n=4) n(%)	Portugal (n=35) n(%)	Spain(n=15) n(%)	Total (n=54) n(%)
Experience in PE interpretation	< 1 year	-	-	-	-
	1 - 2 years	2(50)	4(11.4)	5(33.3)	11(20.4)
	3 - 4 years	-	8(22.9)	5(33.3)	13(24.1)
	5 - 9 years	2(50)	4(11.4)	1(6.7)	7(13.0)
	10 - 14	-	17(48.6)	4(26.7)	21(38.9)
	≥ 15	-	2(5.7)	-	2(3.7)
Number of times support material is provided	Never	3(75)	27(77)	7(46.7)	37(68.5)
	1 time	1(25)	7(20)	5(33.3)	13(24.1)
	2 times	-	1(3)	2(13.3)	3(5.6)
	3 times	-	-	-	-
	5 times	-	-	1(6.7)	1(1.9)
	Number of times per week you are confronted with terms you don't know how to translate	Never	-	5(14)	2(13.3)
1-3 times		4(100)	24(69)	11(73.3)	39(72.2)
4-6 times		-	4(11)	2(13.3)	6(11.1)
7-9 times		-	1(3)	-	1(1.9)
10-12 times		-	1(3)	-	1(1.9)

* The data refer to interpreters who worked in a Physical Education class.

When asked about the interpreting strategies used to solve the situation, all Italian interpreters answered that they used a “temporary agreed upon sign”, 74% of Portuguese interpreters “ask the teacher to explain the concept” and 80% of Spanish interpreters “explain the concept”, despite also resorting to other strategies.



Figure 4 – Resources used as interpretation strategies.

Participants were asked about the number of hours they spent on average per week preparing interpretation tasks. Four (100%) of the Italian interpreters estimated they spent between 1-2 hours per week on such tasks and indicated that they did not spend any hours of their work schedule for this purpose. Portuguese interpreters reported that they spent on average 2.48 hours per week on task preparation, 57.1% of which did not have this time allocated in their schedule, while the remaining 42.9% did. Spanish interpreters spent an average of 2.34 hours a week on preparation, 53.3% of respondents had this time in their schedule and the remaining 46.7% did not.

Table 4 –Preparation of interpretation tasks.

Total		Italy (n=4)	Portugal (n=35)	Spain (n=15)	Total (n=54)
n=54		n(%)	n(%)	n(%)	n(%)
time spent to prepare for interpretation tasks	none	-	5(14.3)	1(6.7)	6(11.1)
	1 hour	-	-	4(26.7)	4(7.4)
	1 -2 hours	4(100)	13(37.1)	5(33.3)	22(40.7)
	3 - 4 hours	-	8(22.9)	1(6.7)	9(16.7)
	5 - 6 hours	-	6(17.1)	2(13.3)	8(14.8)
	7 - 8 hours	-	2(5.7)	1(6.7)	3(5.6)
	>9	-	1(2.9)	1(6.7)	2(3.7)
Time designated in work schedule	no	4(100)	20(57.1)	7(46.7)	31(57.4)
	yes	-	15(42.9)	8(53.3)	23(42.6)

Table 5 shows the frequency of the aspects considered most demanding in the interpretation work carried out in physical education classes. It is important to highlight that the answers of the entire sample (n=101) were considered. The response options mentioned are presented in decreasing order of demand, respecting the selection made by the interpreters. In this case, 57.4% of the interpreters considered it difficult/very difficult “to be in students’ visual field because they are often scattered throughout the space”. Two requirements directly related to interpretation were then mentioned: on the one hand, “to feel lack of sign vocabulary for the interpretation of certain contents”

and on the other, “to have an early knowledge of the contents of the Physical Education subject”. These aspects were mentioned as difficult/very difficult by 51.5% and 50.5% of the interpreters, respectively. The next requirement was related to a characteristic that is typical of the teacher’s pedagogical action, which was pointed out by 34.6% of the interpreters as an action that makes the interpreter’s job difficult/very difficult, by having to “accompany the teacher on the move to make individual corrections”. Finally, 28.7% said that it is difficult/very difficult “to have the knowledge of the SL lexicon appropriate to the class contents”.



Figure 5 – Difficulties in Interpreting in Physical Education.

Resources for updating vocabulary



Interpreters were asked about the resources they usually used to update/acquire vocabulary or to clarify doubts when they encountered words/expressions they were unfamiliar with. The resources were divided into material resources and human resources, and figures 6 and 7 show the frequency of their use



Figure 6 – Sample distribution by frequency of used materials resources.

Interpreters are resorting less and less to books and printed dictionaries to keep themselves updated or to clarify their doubts and are turning to online dictionaries more frequently.

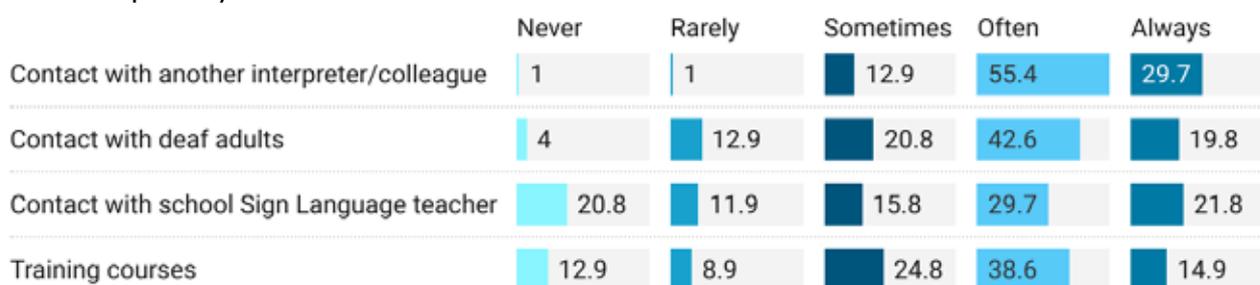


Figure 7 – Sample distribution by frequency of used human resources

The contact with other interpreters/colleagues, with the school’s sign language teacher and with deaf adults were options selected by over 50% of respondents as the most often/always used these resources. Training courses are referred immediately after.

When asked about their satisfaction with the resource, interpreters were slightly or not at all satisfied with printed books or dictionaries, satisfied/very satisfied with digital SL dictionaries and online SL dictionaries.



Figure 8 – Sample distribution by degree of satisfaction with used materials resources.

Regarding human resources (figure 9), the degree of satisfaction was considerably higher. The “contact with another interpreter / colleague” was evaluated by 98% of respondents as a resource that made them very / extremely satisfied. With the same evaluation and selected by more than 50% of the interpreters is “contact with deaf adults”, “contact with the school SL teacher” and “training courses”.



Figure 9 – Sample distribution by degree of satisfaction with used human resources.



Conclusion



The interpreters who participated in this study belonged to the partner countries of the Sportsign project and contributed to our understanding of a number of issues related to their performance in the physical education classroom and the updating of vocabulary. Although it may not correspond to the reality of the participating countries, we will resort to the research carried by Storey and Jamieson (2004) for comparative purposes, due to the similarity with the questions posited in our study.

The interpreters surveyed were young, with a median age of about 38, predominantly female, with an average professional experience of around 10.7 years. The lowest level of education they had was a Bachelor's degree. When we tried to assess any relationship with deafness, we came to the conclusion that 22 had deaf relatives, 18 of which were children of deaf adults (CODA). This fact certainly provided them with different contact with the language and the Deaf community, if their parents cultivated community life. Of the total sample (n=101), 53.4% had interpreting experience in PE and carried out this work on average twice a week. When asked about how they prepared the conditions of the communication process, which according to Best et al. (2002) requires the teacher to provide material and a list of the terminology to be used so that the interpreter can prepare beforehand and share this material with deaf students, we obtained different answers. Thus, the question was asked in order to provide an estimate of the occurrence. It was found that 68.5% of the interpreters reported not receiving any kind of material that would allow them to do this preparation in advance, and the rest estimated they received it between 1 and 3 times a week. It should be noted that in the study by Best et al. (2002), 59% of the interpreters reported having early knowledge of the preparatory material.

Regarding the perceived need for vocabulary, the interpreters were asked to estimate how many times in a week they would come across a term or word whose SL word was unknown to them. In this case, the maximum number was between 10 and 12 times per week and the minimum was zero. However, most placed this occurrence between 1 to 6 times per week. In contrast, Best et al. (2002) found a result that ranged between 1 to 20 times per week. Interpreters spent an average of about 3 hours per week preparing for the communication process and 57.4% did not have this time allocated to their work schedule.

While interpreting in physical education classes, the interpreter moves to a different location. In the space where the class is taking place, the teacher provides instructions at the beginning, during and at the end of the tasks, and visual contact is often lost. In order to understand what they considered most demanding for interpreting in physical education classes, some task-related parameters were presented. Two of these parameters were related to the characteristics of the physical education class and the remaining 3 were related to the interpretation process, with interpreters being allowed to select more than one answer. The parameter that was mentioned the most was related to the placement of the interpreter within the class space, considering that their position cannot be fixed, that students are scattered in the space and not visually accessible. Next, the two most frequently mentioned demands were related to SL vocabulary. "To feel lack of sign vocabulary for the interpretation of certain contents" and "to have an early knowledge of the contents of the Physical Education subject", were referred to as difficult/very difficult by 51.5% and 50.5% of interpreters, respectively.

In contrast, the parameter "having early knowledge of the contents" was selected last, suggesting that the fact that the interpreters had not received preparatory materials was not a priority in terms of difficulties, and certainly that if they had received them, doubts regarding vocabulary would be lower. In order to obtain information about the resources the interpreters used most to learn and improve vocabulary, they were presented with a list of various resources to identify the frequency of their use. The most selected resources were placed in order according to whether it was a human resource or a material resource. The most frequently mentioned resource was consulting online dictionaries and the respondents were satisfied/very satisfied with this resource. Human resources overlapped all the choices made, as well as the highest rates of satisfaction for their use. Interpreter colleagues were mentioned, then the contact with deaf adults, with the school's SL teacher and lastly, the training sessions. All of these resources received a high degree of satisfaction.

In the study carried out by Best et al. (2002), the options for the choice of resources coincided with the selections made by our sample regarding the importance of human resources. In what concerns material resources, the results obtained seem to suggest that for vocabulary improvement, the ideal resource would be to match the rich context of video with the convenience of books. The demands of the curriculum are reflected in the need for more and more diverse and complex SL vocabulary in order to meet its demands.

The need for vocabulary improvement and organization, therefore, seems to become a need in the teaching deaf students. Interpreters responsible for the translation of various curricular subjects often feel propelled to resorting to other ways of conveying information, such as the use of a temporary agreed sign the explanation of concepts through the use of fingerspelling, dactylology and other forms of communication that can contribute to linguistic diversity or the creation of linguistic niches.

It is necessary to understand Deafness, its meanings, its implications and the linguistic environments of deaf students in order to contribute to the development of their physical, cognitive and social skills. We understand the importance of the presence of the interpreter in the classroom, but we consider the teacher's proficiency in SL to be of even greater importance in establishing effective communication in the teacher/student relationship. The teaching of Physical Education and the motivation for the practice of sport may be more successful if teachers and students establish effective communication at all times, which will in turn generate synchronous behaviors and adequate adaptive responses. Teachers must also ensure that lessons take place in an inclusive environment, and for that they must make sure that information, feedback, incentives for learning are all equally made available, both in quantity and quality, to promote pedagogical equity and so that the evaluation process may evaluate learning in the format in which it was provided.

The physical education class should promote the practice of sports and aim of obtaining performance levels of excellence, so that deaf students feel motivated and active to participating in sports and becoming leaders in sports proposals developed by the Deaf Community.

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