



Teachers and health team's view of the performance of speech-language therapy's role in early childhood education

Visão de professores e equipe de saúde sobre a atuação da Fonoaudiologia na educação infantil

Visión de profesores y equipo de salud sobre la actuación de la Fonoaudiología en la educación infantil

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Abstract

Objective: This study sought to reflect on the views of teachers and health professionals who work in a multidisciplinary team at schools, concerning the performance of speech-language therapy in Early Childhood Education, as well as their perceptions about the relationship between health and education. **Methods:** The data were collected through the application of a semi-structured and self-administered questionnaire to twelve Early Childhood Education teachers, who work in a private school in the city of Campinas, and to fifteen health professionals, such as: Physiotherapist, Occupational Therapist, Dentist, Dietitian, Psychologist and Speech-language Therapist, who participated in a Health Program that operates in a school environment, in Early Childhood Education. The study is characterized as a descriptive and cross-sectional research. Data analysis was performed based on Content Analysis. **Results:** It could be observed that both teachers and health professionals have knowledge of Speech-language Therapy areas. They reported that the speech-language therapy in the school environment is important because it helps dealing with children's behaviors and also to work together with the teachers. The teachers were able to

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relate the knowledge between the health areas and the health professionals showing that the differential of a speech-language pathologist in the team is made by their contribution towards the knowledge of the area itself. Respondents considered the relationship between Health and Education as important, mentioning correlations between both. **Conclusion:** Speech-language pathology at schools is important and may be the path that allows a closer and more effective relationship between Health and Education.

Keywords: Speech-language pathology and audiology; Child Rearing; School Health.

Resumo

Objetivo: o presente estudo buscou refletir sobre a visão de professores e profissionais da saúde, que trabalham em equipe multidisciplinar na escola, acerca da atuação fonoaudiológica na Educação Infantil, bem como suas percepções sobre a relação entre saúde e educação. **Métodos:** Os dados foram colhidos por meio da aplicação de um questionário semiestruturado e autoaplicável em doze professores da Educação Infantil que atuam em uma escola privada, na cidade de Campinas e em quinze profissionais da área da saúde, tais como: Fisioterapia, Terapia Ocupacional, Odontologia, Nutrição, Psicologia e Fonoaudiologia, todos participantes de um *programa de Saúde* que atua em ambiente escolar, na Educação Infantil. O estudo caracteriza-se como pesquisa descritiva e de corte transversal. A análise dos dados foi realizada com base na Análise de Conteúdo. **Resultados:** Pôde-se observar que tanto as professoras quanto as profissionais da saúde têm o conhecimento de áreas de atuação da Fonoaudiologia. Relataram que a atuação fonoaudiológica na escola é importante por auxiliar em condutas com as crianças e por atuar junto aos professores. As professoras souberam relatar as relações entre os conhecimentos das áreas da saúde e as profissionais da saúde mostraram que o diferencial do fonoaudiólogo na equipe se faz por ele contribuir com conhecimentos da própria área. A relação entre Saúde e Educação foi considerada pelas participantes como importante, citando correlações entre ambas. **Conclusão:** a atuação fonoaudiológica na escola é importante e pode ser o caminho que permite uma relação mais estreita e eficaz entre Saúde e Educação.

Palavras-chave: Fonoaudiologia; Educação infantil; Saúde escolar.

Resumen

Objetivo: En el presente estudio se buscó reflexionar sobre la visión de profesores y profesionales de la salud, que trabajan en equipos multidisciplinarios en escuelas, a respeto de la actuación fonoaudiológica en la Educación Infantil, así como a respeto de sus percepciones sobre la relación entre salud y educación. **Métodos:** Los datos fueron colectados por medio de la aplicación de un cuestionario semiestruturado y autoaplicable a doce profesores de Educación Infantil que actúan en escuela particular, en la ciudad de Campinas y, quince profesionales del área de la salud tales como: Fisioterapia, Terapia Ocupacional, Odontología, Nutrición, Psicología y Fonoaudiología, todos actuantes en un Programa de Salud en escuelas de Educación Infantil. Ese estudio se caracteriza como investigación descriptiva y de corte transversal. El análisis de datos se realizó con base en el Análisis de Contenido. **Resultados:** Se pudo observar que tanto las profesoras como los profesionales de la salud tienen el conocimiento de áreas de actuación de la Fonoaudiología. Relataron que la actuación fonoaudiológica en escuelas es importante por auxiliar en conductas con niños y por actuar junto a los profesores. Las profesoras han sabido relatar las relaciones entre los conocimientos de las áreas de salud, y los profesionales de salud mostraron que el diferencial del fonoaudiólogo en el equipo se hace por la contribución con los conocimientos de su área. La relación entre Salud y Educación fue considerada por los participantes como importante, citando correlaciones entre ellas. **Conclusión:** la actuación fonoaudiológica en escuelas es importante y puede ser el camino para una relación más estrecha y eficaz entre Salud y Educación.

Palabras claves: Fonoaudiología; Educación Infantil; Salud Escolar.

Introduction

When reflecting on the theme of the relationship between Health and Education, it is important to remember that the pioneering health practices in the school environment took place between the late 18th century and the early 19th century in Germany. Such practices were due to the action of German physician Peter Frank, considered the father of health at school, who developed the Frank system (“System einer vollständigen medicinischen Polizey“)¹. This system included both health at school and public and individual health.

By referring to this issue in Brazil, it is important to highlight the creation of Health-Promoting Schools Initiative, which incorporated the concept of health promotion from the Ottawa Charter of 1986 into public health, extending it to the school environment, changing their hygiene and assistance practices to a comprehensive and an interdisciplinary view.

In order to contemplate the importance of health knowledge in education, the national curricular parameters (NCP)² had to include health contents in the curriculum of children’s and adolescents’ school education as a transversal and an interdisciplinary approach. Such contents are object of the attention of all school levels and grades, integrated into all subjects as a daily discourse of the teaching/learning process.

Thus, in relation to health, students are expected to be able to adopt and value healthy habits to support the quality of their own health and that of the collective¹. This makes clear the importance of Health Education^{3,4}.

Therefore, when reflecting on the participation in the interrelation of views about Health and Education, Speech, Language Pathology and Audiology serves as a reference since it is a profession whose training offers – or should at least offer – contents of both areas. Even though Speech, Language Pathology and Audiology has its origin in the Educational field (its practices date back to the beginning of the 20th century in Brazil, aimed at correcting the “language errors” presented by students). Over time, it started shifting to a more clinical nature, focusing on the main practices in the health field⁵. This resulted in the speech, language pathologist and audiologist being removed from their professional involvement in the educational field, especially in terms of being part of a pedagogical team.

Throughout the years, in particular since 1994, there have been some initiatives and discussions with legislative repercussions on the involvement of speech, language pathology and audiology in Education, such as the recognition of the expertise in Educational Speech, Language Pathology and Audiology in the year 2010. The focus of the expertise is to carry out actions that benefit the teaching and learning process, in partnership with educators. It presents, therefore, a closer interaction with Education, which requires the speech, language pathologist and audiologist to have specific knowledge about their participation in the school/educational environment.

As for the necessary knowledge to allow the speech, language pathologist and audiologist work in Education, when thinking about the training in Speech, Language Pathology and Audiology, we can observe the shortage of educational subjects offered by undergraduate courses. In the studies of Alves et. al.⁶, it was possible to identify that the average workload dedicated to the subject of Educational Speech, Language Pathology and Audiology was 59.25 hours in 13.25% of the country’s courses and that, at several higher education institutions, there is no internship dedicated to this field. Garcia⁷ draws attention to a reflection on the importance of the development of skills with undergraduates for the accomplishment of educational actions and knowledge about educational policies.

Furthermore, the small number of speech, language pathologists and audiologists attending congresses and meetings in the field of education stands out, which is attributed to the lack of interest by most speech, language pathologists and audiologists to work in this field⁸. It is observed, then, it is important to reflect on the training in Speech, Language Pathology and Audiology, because when speech, language pathologists and audiologists themselves have no knowledge about the work possibilities in the educational environment, there is a loss regarding knowledge and recognition by the school community.

Especially in relation to the practice of Speech, Language Pathology and Audiology in Early Childhood Education, such practice is important since the Speech, Language Pathology and Audiology can contribute with specific knowledge on children such as oral and written language acquisition as well as motor, auditory and cognitive development. In addition, through the exchange of knowledge



between speech, language pathologists and audiologists and teachers of early childhood education, strategies to prevent health conditions and promote health can be put into place to help in the child's learning process. This type of relationship also provides the creation of inclusive environments, as long as inclusive education is aimed at the development and promotion of educational practices for all⁹.

The importance of working with oral and written language is present in one of the chapters of the 1998 National Curriculum Framework for Early Childhood Education¹⁰, which is one of the basic axes in Early Childhood Education.

The United Nations Children's Fund (UNICEF) reported that investing in children has a great return for them as well as for society and the entire planet. Moreover, sustainable development starts and ends with safe, healthy children with sound school education¹¹.

Speech, Language Pathology and Audiology has increasingly been improving its practices in order to contribute to Education. As for its investment in the educational field, it is of utmost importance to think on the training of speech, language pathologists and audiologists. Therefore, the present study aimed to reflect on the view of teachers and health professionals, including speech, language pathologists and audiologists, who work in a multidisciplinary team at schools, in respect to the speech, language therapy involvement in early childhood education, as well as the professionals' perceptions about the relationship between health and education.

Method

The study has been approved by the Research Ethics Committee of Unicamp through protocol number 761.731/2014 and it is characterized as a descriptive⁶² and cross-sectional research. The aim of it was to get to know the views of early childhood education teachers and health professionals – who belong to a *health program* that is also involved in Early Childhood Education (at private schools) – in relation to the actions developed by the speech, language pathology and audiology work, as well as on the perception of the relationship between health and education. The research had 27 respondents, all of them female. Out of these, 12 are early childhood education teachers at a private school in the city of

Campinas, with an average age of 34; their average career time spent as a pedagogue is 9 years and their average time spent at school is 6 years, and only one teacher has been trained at a state institution. The other 15 respondents are professionals of the health field: 4 physiotherapists, 4 psychologists, 3 dietitians, 2 dentists, 1 occupational therapist and 1 speech, language pathologist, members of a *health program* that works in private schools in Campinas and in the surroundings. Their average age is 34; average career time spent is 6 years and 5 months, and their average time spent on the *health program* is 4 years and 8 months. The objective of this program is aimed at the actions to prevent health conditions and promote children's health. In order to obtain the respondents' answers, they first signed the Informed Consent Term (ICT) and then answered a semi-structured and self-administered questionnaire.

The contents checked through the questionnaires delivered to the respondents were:

- The professional identification in respect to the academic training.
- Teachers' views on speech-language therapy work, as well as on the partnership between Health and Education.
- Contribution of Speech-language Pathology knowledge to the fields of Nutrition, Psychology, Physiotherapy, Dentistry and Occupational Therapy both individually and as a team.
- Teachers' and health professionals' knowledge regarding the areas of Speech-language Pathology and its actions in the school environment.

The data analysis of this research was based on Content Analysis⁶³. The result was the production of five thematic axes: 1) knowledge about Speech-language Pathology; 2) how the relationship between health and education is viewed; 3) relationship of the respondents with Speech-language Pathology; 4) view of the respondents regarding interdisciplinary knowledge and team actions; 5) views of Speech-language Pathology in the school environment. For a better understanding of the data and for the non-identification of the subjects, each participant received a number, being number 1 to 12 for teachers and 13 to 27 for health professionals. Number 27 was assigned to the speech-language pathologist.



Results

Each thematic axis was built according to the topic of the questionnaire questions and the answers were organized following the technique of categorical analysis, that is, through the creation of categories. The answers of the speech,

language pathologist were described separately as her questionnaire was mostly different from the other respondents.

Axis 1 grouped answers regarding the respondents' knowledge on Speech, Language Pathology and Audiology.

Table 1. Respondents' answers on their knowledge about Speech, Language Pathology and Audiology, in 2014.

% of female teachers	% of health professionals	Answers
83.3%	100%	know what Speech, Language Pathology and Audiology is.
50%	78.6%	mention areas of Speech, Language Pathology and Audiology.
44.4%	53.8%	were able to differentiate clinical Speech, Language Pathology and Audiology from the educational Speech, Language Pathology and Audiology.

It was possible to observe that ten teachers and fourteen health professionals answered that they know what Speech, Language Pathology and Audiology is about. All of them are somewhat involved in speech, language therapy, at least in the school environment.

The areas of Speech, Language Pathology and Audiology practices mentioned by both teachers and health professionals were Oral Language, Hearing, Orofacial Motor Skills and Voice. Only health professionals mentioned the areas of Dysphagia (at hospitals), Educational Speech-Language Pathology and Audiology, Occupational Speech-Language Pathology and Audiology and Public Health. Thus, health professionals showed they know a greater number of Speech, Language Pathology and Audiology areas and all of them mentioned more than one area. The three most mentioned areas by these professionals were Oral Language, Hearing and Orofacial Motor Skills.

The most mentioned areas by the teachers were language, hearing and learning, being the only ones to mention learning. It is important to note that one of the teachers stated having knowledge about central auditory processing.

It is interesting to note that several respondents were able to differentiate speech-language pathologists' and audiologists' activities at school and clinic practice, showing that the clinical speech-language therapy work is focused on treatment

through individual/specific care, while that of the school aims mostly at prevention and guidance. The other respondents did not distinguish the speech-language pathologist and audiologist's activities and just mentioned either characteristics of the clinical (one teacher only) or educational practices (two teachers and two health professionals), as it can be seen in the following examples, starting with the educational practices:

"The activities at school are more focused on prevention, and guidance may occur even before a problem arises." (a dentist)

As examples of the clinical practices:

"I believe the clinic practices are more specific." (a teacher)

It is worth mentioning that two teachers and four health professionals stated having knowledge about speech-language therapy practices from their reference on educational work, for they did not get involved with clinical speech-language therapy.

With regard to the speech, language pathologist and audiologist's answer, what is observed is a lack of professional positioning, that is, it cannot be stated in which place she stands (at the clinic practice or at school), as for she is a professional who works both in the clinical and educational environment. When she answered she received



the complaint, there is no longer the information whether this complaint is received at school or at the clinic and the answer follows with the information: *“I do not observe the child in another environment and other situations.”* Once again, she does not make it clear in which environment or situations the child is (at the clinic practice or at school). Consequently, it is concluded that her position on this issue was ambiguous, since she

was not able to assert whether she stands more as a professional of the health or educational field.

Axis 2: how the relationship between Health and Education is seen

As we begin to exhibit the results, the table below demonstrates the data obtained out of the teachers' answers:

Table 2. Teachers' answers on how they consider the relationship between the fields of Health and Education, in 2014.

% of teachers	Answers
54.6%	consider that health quality interferes within the quality of education.
9%	when they indicate the influence between health and education.
36.4%	interconnected: do not specify consequences.

It was possible to observe that 54.6% of the teachers reported the influence of health quality on the quality of education. Some examples of answers:

“Children with health issues have learning difficulties”.

“When the child's physical and mental health is being well-attended, well cared for and guided, it reflects on their well-being and results into a good learning development.”

The second category was elaborated to show the answers that identified the influence that health has over education as well as when there is no such influence. Only one participant has been included in this category. Below we can see her answer:

“I believe the more we educate the more we become concerned about health. In addition, the better are the children fed the greater their school outputs are.”

And health education leads us to seek a healthier and more harmonious world for everyone.”

As for the third category, which shows that there is an integrated relationship between health and education without revealing the consequences, 36.4% of the teachers answered that – in a generic way rather than in a specific way – the relationship between these areas occurs in an integrated way. The answers of these respondents are shown below:

- “They go hand in hand.”* (a teacher)
- “Health is part of Education and, thus, they are integrated at all times in our daily life.”* (a teacher)
- “They are closely connected.”* (a teacher)
- “Interconnected.”* (a teacher)

As for the answers of the health professionals about the relationship between health and education, the following chart shows the organization of the data obtained, in three main categories.

Table 3. Professionals' answers on how they consider the relationship between the fields of Health and Education, in 2014.

% health professionals	Answers
53.4%	interconnected: with or without cause-and-effect relationship.
33.3%	within prevention of health conditions and health promotion issues.
13.3%	only used relationship quality marker between health and education.



In the first category, 53.4% of the health professionals revealed that the relationship between health and education is interconnected, with or without a cause-and-effect relationship. As an example, below there is the speech, language pathologist and audiologist's answer:

"Health education in the school environment has increased, and currently there are already many professionals who value this type of integrated work, in the sense that, although health education provides long-term results, they are all positive."

To further and better visualize this first category, it was interesting to explain some other answers as they show the interconnection relationship between health and education with and without cause-and-effect relationships. The answer given by a physiotherapist made clear the cause-and-effect relationship:

"They are directly correlated. For a good education, it is necessary to learn how to take care of health, thus linking it up with life quality. I strongly believe it is cyclical (at least it should be): taking care of our health makes us willing to learn and learn makes us willing to take care of ourselves."

A dentist, in turn, reported the interconnection between health and education, but she did not mention details of cause and effect between them:

"As a partnership in which these two fields complement and support each other, bringing in benefits to all. Promoting greater exchanges, enabling new ways on how to look at things and on how to act with them."

The second category addressed issues that involve prevention of health conditions and health promotion as a way of describing the relationship between health and education. Included in this category were answers that included the terms prevention of health conditions and health promotion and those that showed actions of these terms. 33.3% of the respondents became involved in this category. The following answers illustrate well this category:

"It is extremely important given that it is a collective means to be involved in the prevention of health conditions and promotion of health." (a dietitian)

"It is vital because when children learn about health, the chances of them maintaining a healthy habit are much greater and they take it throughout life (a dietitian)."

"Children at this stage are in their development process and it is during this period we need to guide them and clarify their doubts, preventing health conditions and promoting health within these institutions." (an occupational therapist)

"Prevention of health conditions in the school environment enables us to build healthy children, not just physically, but emotionally and psychologically." (a psychologist)

The third category included the answers of eight respondents who explained the classification of the relationship between health and education, using markers such as: "extremely or very important", as it was the case of two dietitians, a psychologist and a dentist; "essential", mentioned by another dietitian and "imperative" quoted by a physiotherapist and two psychologists. Here are two examples of respondents' answers about the use of these classifying markers:

"Imperative, both for health and education." (a psychologist)

"Extremely important since health must first be in balance so that the individual can achieve activities such as the ones performed in the school environment. Health and education are primary factors in the life of human beings." (a dentist)

It was possible to observe that the respondents' answers, including that of the speech, language pathologist and audiologist, showed a beneficial relationship between the fields, mainly because they contribute to the children's development when they are interconnected.

Axis 3: relationship of respondents with Speech, Language Pathology and Audiology

This third axis was organized in order to contemplate guiding questions that reveal how the respondents relate themselves with Speech, Language Pathology and Audiology, or even with the speech, language pathologist and audiologist, it shows exchange of knowledge among those involved.

Table 4. Participants' answers on their relationship to Speech, Language Pathology and Audiology or the Speech, Language Pathologist and Audiologist, in 2014.

% of teachers	% of health professionals	Answers
91.6%	100%	ask Speech, Language Pathologists' guidance.
100%	100%	reported positive facts on the speech, language pathologist and audiologist along with teachers/school.
83.3%	100%	the knowledge of Speech, Language Pathology and Audiology adds subsidies to their professional actions.

Regarding the first question that asked if the respondents seek the speech, language pathologist and audiologist's guidance, it was possible to observe that a large number of respondents do so. The health professionals mentioned examples of guidance – organized according to the knowledge areas of Speech, Language Pathology and Audiology – in which language, orofacial motor skills and hearing were the three most requested areas.

The teachers, in turn, were assigned a more specific question: *“If you request guidance, can you apply it in the classroom? Please mention any difficulties, if any, in applying the given guidance in the classroom.”*

Of the teachers who answered this question, four of them indicated sometimes they find it difficult to apply the guidance given by the speech, language pathologist and audiologist's due to the lack of time (two teachers) or to work with a specific case in the classroom (other two teachers).

As for the speech, language pathologist and audiologist's interaction with the teachers/school, it was possible to observe that this relationship was seen as productive. The positive facts reported by the respondents were generally regarding the speech, language pathologist and audiologist's guidance given to them and the children's parents, focusing on the action with students. They also qualified positively the speech, language pathologist and audiologist's involvement with teachers/school. Examples of reports/statements:

“To guide teachers on how to facilitate communication and speech in the teaching and learning process.” (an occupational therapist)

“I think it is key and important to guide teachers and educators.” (a teacher)

The lack of report of the teachers about the aid to themselves was observed, as in the area of voice, even though it is of great importance for teachers'

work. This may have happened due to the lack of perception of the teachers regarding the Speech, Language Pathology and Audiology benefits to their own health, considering the student as the main target of work.

For the health professionals, this relationship is important as the speech, language pathologist and audiologist can guide and/or assist teachers/parents in working with the child.

Most of respondents answered affirmatively that the knowledge of Speech, Language Pathology and Audiology adds skills to their practices.

Oral language was the most mentioned area by the teachers. In particular, a teacher responded about the importance of having knowledge on at what ages certain changes in speech are expected, once she has this knowledge, she may or may not require an adequate pronunciation of the student. This respondent was the one who showed having more knowledge of Speech, Language Pathology and Audiology:

“Speech, reading, writing and learning disorders; psychomotor evolution; child development.”

The most mentioned knowledge by the health professionals was orofacial motor skills. At least one professional from each health area mentioned it. Here is the experience of a psychologist:

“A child with difficulty in concentrating was sent to me with the complaint of being ‘absent-minded and hyperactive’. Having the knowledge on Speech, Language Pathology and Audiology, I could realize it was a consequence of a mouth breather and the child snored a lot. Thus, I was able to guide the child's parents in the correct way and to look for an otolaryngologist and a speech, language pathologist and audiologist. The child improved 80%. Another child with speech disorders that were no longer expected for a 6 year-old child. I advised the child's mother to look for a speech, language pathologist

and audiologist and in 3 months the child overcame the problem.”

The speech, language pathologist and audiologist reported that teachers request and follow their guidance, especially in the area of speech development and dysfluency. She is able to collaborate with teachers and note that many of them identify the importance of the guidance, but in the end they include very little of it in the organization of their pedagogical routine. She did not mention whether or not teachers and health staff acknowledged her work at school. However, she reported the importance of knowledge exchange between

the different health areas in her involvement in the school environment.

Axis 4: respondents’ view of interdisciplinary knowledge and teamwork

The organization of this axis was set in a distinct way from the others, as it embodies questions that are different for each group of respondents. Two distinct questions are in the teachers’ questionnaire and two in the health professionals’. They will be presented below, starting with the group of teachers.

Table 5. Teachers’ answers concerning the knowledge they have on the interrelationship between Speech, Language Pathology and Audiology and other areas of health (question 1) as well as which procedures they follow towards a possible hearing, voice, breathing, speech, reading and writing disorder found in their students (question 2), in 2014.

% of teachers	Answers to question 1
75%	recognize the relationship between the knowledge of Speech, Language Pathology and Audiology and other areas of health.
% of teachers	Answers to question 2
75%	search for a specialist when they realize there might be any hearing, voice, breathing, speech, reading and writing disorder in their students.
25%	search for a speech, language pathologist and audiologist who works at school or other professionals who work in that very same environment.

In respect to the answers for question 1, 75% of the teachers showed understanding of the relationship among the knowledge of the health areas. Four teachers reported more than one cause-and-effect relationship between areas. Examples:

“Speech impediment caused by emotional factors; immature speech development caused by feeding with little chewing stimulation; bite change caused by lack of stimulation of motor coordination.” (a teacher)

“Hearing disorders affect behavior. Breathing disorders affect the dental arch and even the child’s growth as a whole.” (a teacher)

Regarding question 2, the teachers’ attitude when they detect any possible hearing, voice, breathing, speech, reading and writing disorders in their students, 75% of them seek an expert. However, none of them indicated which expert was

sought. Only three respondents explained that the expert sought was the speech, language pathologist and audiologist. As for the other answers that did not indicate this particularity, we cannot say that the expert sought was the speech, language pathologist and audiologist, once the disorders mentioned in the question (hearing, voice, breathing, speech, reading and writing) can be understood as being an area of practice of other expertise. Of these teachers (75%), 55.5% also got in touch with the child’s parents and 44.5% contacted the school principal after the aforementioned discovery.

Still in regard the teachers’ attitude, 25% of them indicated that they seek a speech, language pathologist and audiologist who works at the school or other professionals who work in the school environment. Two of them explained that this professional is the speech, language pathologist and audiologist who works at the school. This

ensures that the speech, language pathologist and audiologist is a professional included in the health program, since there is no involvement of other professional of the same field.

Respondent 8 (a teacher) answered comprehensively:

"As we have other professionals in the school who evaluate the child, I take the opportunity to map what I wrote down during class."

This can be interpreted as a way of not identifying the disorders found to be specific to Speech, Language Pathology and Audiology, as previously mentioned, and may belong to the other areas of health involved with the *health program* in the school environment.

We will now present the issues addressed to the health professionals:

Table 6. Health professionals' answers about the possibility of knowledge exchanges between the respondent's and Speech, Language pathologist and audiologist can help solve cases (question 1) and if they notice the advantage of having speech, language pathologist and audiologist in the team (question 2), in 2014.

% of health professionals	Answers to question 1
100%	recognize that the exchange of knowledge among health areas help to solve the cases.
% of health professionals	Answers to question 2
100%	recognize that having a speech, language pathologist and audiologist in the team is an advantage.

Regarding the answers for question 1, in order to know if the knowledge exchanges between the respondent's area and Speech, Language Pathology and Audiology help fixing cases, 100% of them validated the importance of discussing the cases with both the speech, language pathologist and audiologist and the other experts. Examples:

"Nutrition and Speech, Language Pathology and Audiology are strongly related in the aspect of chewing, swallowing and orofacial motor skills." (a dietitian)

"In cases, for example, of mouth breathers that, as a consequence, eventually resulted into postural disorders." (a physiotherapist)

"Guiding those in charge of the student in question on food consistency and chewing, obviously, often also with the help of the dentist, as the student may not be eating generally due to a dental arch deformation. Then, the intervention of the three professionals may become necessary and not only the dietitian's." (a dietitian)

Concerning question 2, 100% of respondents stated it makes all the difference having a speech, language pathologist and audiologist in the team, mainly because they contribute with specific knowledge of their field. Example:

"It is key to have in the team not only a professional specialized in evaluating hearing, chewing and swallowing, but also one specialized in language, which is very important in the process of learning (speaking and writing)." (a dietitian)

This axis included also questions focused on the speech, language pathologist and audiologist. As for the benefit of sharing knowledge among professionals in different areas, for case resolution, she pointed out that the more observations they have, the better it will be to build on the team's view. She also reported not having difficulty in working with the team and considered multiprofessional work in the school environment of paramount importance, as she believes the team approach adds and makes the guidance more self-assured.

Axis 5: view of Speech, Language Pathology and Audiology in the school environment

This axis will show how the data looked like in relation to the view respondents have over the Speech, Language Pathology and Audiology practice, specifically in the school environment.

Table 7. Respondents' answers about their considerations on the role of Speech, Language Pathology and Audiology in the school environment, in 2014.

% of teachers	% of health professionals	Answers
100%	100%	consider important the role of the speech, language pathologist and audiologist in the school environment.
100%	100%	mention advantages of Speech, Language Pathology and Audiology in the school environment.
75%	57%	suggested improvement to the Speech, Language Pathology and Audiology practice in the school environment.

For most teachers (75%), the importance of the speech, language pathologist and audiologist in the school environment takes place through the help this professional gives them and/or to the parents so that they can deal with the children. The other teachers (25%) indicated the direct intervention of the speech, language pathologist and audiologist with the children, without the need of the teacher's involvement. Example:

"[It is] of utmost importance to give support and subsidies that contribute so that the teacher can advance with their student who presents difficulty." (a teacher)

For the health professionals, in turn, the importance is firstly seen through direct assistance to students, firstly, by developing prevention activities (92.8%) and, secondly, as an aid to teachers and/or to parents in working with children (7.2%). Example:

"It is very important the participation of speech, language pathologists and audiologists in the school environment, since they follow the child's development in speech acquisition, hearing difficulties and learning." (a dietitian)

It must be observed that the assistance of a speech, language pathologist and audiologist covers both the children who present difficulties as the others, in the process of promoting their development. It is important to note that a teacher and a health professional mentioned diagnosis performed by the speech, language pathologist and audiologist. Regarding the diagnosis, it is important to point out that institutional and situational diagnosis are allowed in the school environment, in contrast to clinical diagnosis. Another important observation, which was once again identified in this question, is that no teacher mentioned the importance of speech, language pathologists and

audiologists in the school environment as an aid for the teachers' own benefit, but only in respect to the children.

Regarding the question about the advantages and disadvantages of speech-language therapy in the school environment, it was possible to observe that 100% of the respondents mentioned advantages of the speech-language therapy work in the school environment, mainly concerning prevention of health conditions and health promotion activities with the children. Examples:

"It helps identifying children with speech and hearing difficulties and guiding parents on the development of the child." (a teacher)

"It adds knowledge to everyone involved with the school; helps solving cases together with other professionals; identifies any disorders related to the area at early stages." (a physiotherapist)

In the case of the disadvantages, 91.6% of the teachers and 66.6% of the health professionals did not mention any disadvantages. Those who did it pointed out situations that end up not favoring the speech-language therapy in the school environment. These were, among others: low family credibility and lack of continuous follow-up (mentioned by a teacher); inadequate time or environment for the speech, language pathologist and audiologist (mentioned by a dietitian and a physiotherapist); and not having a speech, language pathologist and audiologist at school (mentioned by a physiotherapist and a psychologist).

As for the respondents' suggestions on improvements in speech-language therapy work at school, the issues raised were about increasing attendance of the speech, language pathologist and audiologist at school (35.3%); having specific schedules with the teacher (17.6%); increasing guidance to parents and teachers (17.6%); improving the integration between the speech, language



pathologist and audiologist and the school (11.7%); as well as giving suggestions on the profile of the professional and their methods (17.6%); and on greater acknowledgment by the school (5.8%).

For the speech, language pathologist and audiologist, her participation in the school environment is very important, in view of focusing on the prevention and early stimulation, since it enables to be more self-assured in the intervention or guidance, when necessary. She observed that the actions she considers most useful of her involvement with the school refers to the prevention, early identification and clarifications to the teachers.

Discussion

In a reflection on the respondents' knowledge about Speech, Language Pathology and Audiology (referring to axis 1), a study aiming at verifying publications over the interconnection between Speech, Language Pathology and Audiology and Education¹² showed that most publications involved the Language area as an interconnection between these areas. As shown, language was mentioned both by health professionals and by teachers. It is interesting to report that two female teachers and four health professionals reported having no contact with clinical speech-language therapy. More specifically on such mention, it was observed that no health professional mentioned learning. One could interpret that these health professionals do not recognize learning as a specific area only of Speech, Language Pathology and Audiology or even that they do not see Speech, Language Pathology and Audiology related to learning, which is linked to Education. However, it would be difficult to support this statement, due to the other questions addressed to these health professionals where not only learning is mentioned but also reading and writing.

As it could be observed, respondents reported the importance of the relationship between Health and Education, especially when their knowledge benefits the development of children: on that account, the speech, language pathologist and audiologist's role is of great relevance. It should be noted, however, that, in some situations, the speech, language pathologist and audiologist has not invested in clarifying the objectives of his work on Education or has been complacent to meet the misguided expectations of education professionals, therefore, speech, language pathologists and

audiologists need to rebuild and consolidate the relationship with Education¹³.

It is important to highlight the situation of the Speech, Language Pathology and Audiology distorted practices in the school environment that ended up harming the relationship with Education. According to Zorzi¹⁴, this is due to the clinical view of the speech, language pathologist and audiologist when proceeding the screening, whose aim is to detect children's difficulties in order to avoid future problems. This was recognized as a preventive practice, but the author sees them as an intervention, a clinical care. These practices did not work as an aid to the school environment and, therefore, the learning issues turned out to be the responsibility of the educational psychologist, who presented themselves as the professional of the learning disorder, in a clinical or school environment.

As for the respondents' relationship with Speech, Language Pathology and Audiology, it is clear that the knowledge of this area provides benefits to them, so that it assists them in their work with children. Teachers' observations concerning the type of speech, language pathologist and audiologist's role in the school environment¹⁵⁻¹⁷ showed that the speech, language pathologist and audiologist should work in the school performing characteristically clinical work, focused on diagnosis and intervention, and therefore, a more traditional (clinical) and technicity focus on curative actions. Siqueira and Monteiro (2006)¹⁵ believe that, in order to change this view of teachers in relation to the speech, language pathologist and audiologist's practices, the latter should attenuate their work strictly from the health to the educational scope, thus positioning themselves differently.

It was possible to observe in axis 4 (respondents' view on interdisciplinary knowledge and team actions) an interdisciplinary view of these respondents, which provides possible health promotion actions. To explain better, health promotion at school depends directly on the interdisciplinary work between services in the area of Education and Health as well as it depends on the partnership between speech, language pathologists and audiologists and educators, Ramos and Alves (2008)¹⁸. Still mentioning axis 4, only 25% of the teachers reported looking for a speech, language pathologist and audiologist when encountering any possible hearing, voice, breathing, speech, reading and writing disorder in their students. This lack of



knowledge of teachers' regarding the referral to the speech, language pathologist and audiologist was possible to be observed in a similar study¹⁹, pointing out that only 16.4% of them do this type of referral. This unawareness can already be seen in undergraduate Pedagogy students who do not have adequate clarification about Speech, Language Pathology and Audiology²⁰. Even being aware of the information on the lack of knowledge of Speech, language Therapy, the importance of such therapy in partnership with Education was the focus of the article published in 2011, titled *Fonoaudiologia Escolar parceria do futuro*²¹ (School Speech, Language Pathology and Audiology, a partnership of the future), which identified information from educational teachers and speech, language pathologists and audiologists concerning the importance of working in partnership, more specifically related to actions aimed at the learning of reading and writing. These actions also received attention, in another study²², by the pedagogical team of a nursery school. In this way, Oliveira²³ observes that the work in partnership requires the positioning of the speech, language pathologist and audiologist as an apprentice, making exchanges of knowledge and not assuming an informative character.

Starting from a discussion of axis 5, the suggestion of a teacher about the speech, language pathologist and audiologist to take part in the team was highlighted. This type of action is already included in Resolution CFFa (Conselho Federal de Fonoaudiologia – Brazilian Speech, Language Pathology and Audiology Federal Council) No. 387/1039²⁴, which is the most recent one on the attributions and skills of the professional who, despite holding or not a specialty in Educational Speech, Language Pathology and Audiology, works in the field of Education. However, few speech, language pathologists and audiologists are included in the pedagogical teams.²⁵

In a similar study¹⁹, 100% of the teachers reported that the speech, language pathologist and audiologist is important in the school environment, 67.1% of whom emphasized the importance of working with children with disorders. In a similar study²⁶, the interviewed speech, language pathologists and audiologists mentioned health promotion and health prevention activities (60% of them) and language disorders (40%) as Speech, Language Pathology and Audiology main practices at school. Cariola et al²⁷ showed in their research on the inser-

tion of Educational Speech, Language Pathology and Audiology in a Department of Education in the city of São Paulo, the importance of actions aimed at the acquisition and development of language that are interconnected with educational proposals, highlighting work with writing.

From the evidence regarding the importance of the speech, language pathologist and audiologist role in the school environment, it is crucial to think about their academic background. In the study conducted by Júnior ET al²⁸ in 2015, in which 78 students from the last year of the undergraduate program in Speech, Language Pathology and Audiology, from five different Brazilian universities, showed that 76 (97.44%) of the 78 students answered that their undergraduate course in Speech, Language Pathology and Audiology provided knowledge about Educational Speech, Language Pathology and Audiology and only two students from two different universities (2.56%) said that their undergraduate courses did not provide the knowledge related to this area. However, the 76 students who reported having had knowledge about Educational Speech, Language Pathology and Audiology also emphasized that the knowledge was insufficient for their training.

Conclusion

When talking about the relationship between Health and Education, Speech, Language Pathology and Audiology plays an important role as an interconnection to these areas since it comes out from the knowledge of both.

This research was able to collect data from the educational and the health professional teams, the latter, played a distinguished role as for being active in the school environment. It was possible to observe that Speech, Language Pathology and Audiology is seen as important in the school environment, especially in the attention to children (regardless they present difficulties or not). Thus, it is paramount to think about the actions that should be carried out at school so that they can contribute not only with the development of schoolchildren but also to the entire school community.

A good relationship could be noticed between teachers and Speech, Language Pathology and Audiology health professionals; that is a benefit for the Speech, Language Pathology and Audiology actions, which are performed along with such pro-

professionals. Such benefit provides interdisciplinarity, essential for both health and learning promotion.

However, little relationship was noticed between Speech, Language Pathology and Audiology and learning, which ends up bringing distance to actions performed by the Speech, Language Pathology and Audiology within the school environment. Facing that, a certain reconstruction of the relationship between Speech, Language Pathology and Audiology and Education is needed, not only clearly based on the premises of clinical doing but on educational doing as well.

Such reconstruction has a starting point in the speech, language pathologist and audiologist training, which has to distinguish and clarify the educational performance so that a better work can be developed and, consequently, greater recognition of the professional in the educational field can be drawn.

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