Communication disorders in the Peruvian education system: a baseline study

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Communication disorders in the Peruvian education system: a baseline study

by

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B.A., Creighton University, 2003
M.A., Regis University, 2009

A thesis submitted to the

Faculty of the Graduate School of the

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2012
This thesis entitled:  
Communication disorders in the Peruvian education system: a baseline study  
by Eric Schliemann  
has been approved for the Department of Speech, Language, and Hearing Sciences

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This final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of the scholarly work in the above mentioned discipline.

IRB protocol # 11-0683
Abstract

Throughout the developing world, resources for education are lacking. In the case of Peru, specifically, the public education system is challenged to meet the needs of a growing student population. A primary area of concern is the delivery of speech language pathology services for students with communication disorders. This study was designed to examine Peruvian parent and teacher knowledge about communication disorders, and determine the adequacy of Peruvian educational resources in serving students with communication disorders. 38 Peruvian teachers and parents (2 male, 36 female) were recruited to participate in the study. Data was collected through teacher-completed questionnaires and interviews, and a series of parent interviews. Quantitative and qualitative data analysis revealed that parents and teachers are quite resourceful in addressing communication disorders in school and in the home. However, additional educational resources and parent and teacher training are needed to refine service delivery to children with communication disorders in Peru.
Acknowledgements

I thank my advisor, Dr. Brenda Schick for her valuable insight into this field of research, and her continued support throughout this process. Thank you for encouraging me to follow through on project! I could not have finished it without your help. Thanks, also, to my thesis committee: Dr. Pui Fong Kan, Susan Moore, JD, and Dr. Anne Whitney. Your interest in my project motivated me to keep going! Your insights helped me focus my energy, and make this project possible.

There were many people and organizations in Peru that also made this study possible. In particular, I thank Lourdes Sanchez Diaz and the rest of the staff at Fe y Alegria #26; Mariela Sandoval and the teachers at Cerrito Azul Special Education School; Elizabeth Wilson and the rest of Supporting Kids In Peru; and Rosa Reidelinda Torres and Institucion Educativa # 086 Cuna Jardin. I also give special thanks to Elena Quispe Vargas for her assistance coordinating with local entities. This was an extremely challenging project to organize, and it would not have been possible without her help.

Finally, I thank my wife, Dr. Laura Ramzy, for her love and support. The work you did on your dissertation inspired me to write a thesis. I can only hope that my study is a fraction as valuable as yours!
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Upon graduating from Creighton University in 2003, I decided to serve as a volunteer teacher at Fe y Alegría #26, a public school in San Juan de Lurigancho, a district in Lima, Peru. For two years, I worked as a physical education teacher in the primary school, coached the girls' and boys' high school basketball teams, and conducted home visits with the school psychologist. San Juan de Lurigancho is the poorest district in Peru's capital city, Lima, and while living and working in this community, I was exposed to new realities that forever changed my view of the world. These were the two most impactful and formative years of my life, and since my return to the United States, I have been motivated to stay involved with the families in this community. After years of organizing informal development projects, another volunteer teacher and I established a nonprofit organization called Colorado-Peru Microloans to continue serving this community. It is my hope that Colorado-Peru Microloans will gradually shift into a speech language pathology-based organization, serving children in developing countries throughout the world. This thesis is the first step in that process. To establish the rationale for my study, this brief introduction will analyze the effects of poverty in the developing world, and explain the particular characteristics of the Peruvian education system.

Throughout the developing world, poverty impedes on the fundamental human rights of millions of people. In the case of children, poverty can cause irreparable physical and mental damage, and without the provision of basic social services, this cycle cannot be broken (Gordon et al., 2003). This same study explains that, currently, more than one billion children, more than half the children in developing countries, suffer from severe deprivation of one or more basic human needs (food, safe drinking
water, sanitation facilities, health, shelter, education, information, and/or basic social services). Girls are 60% more likely to be deprived (Gordon et al., 2003). Research suggests that the link between poverty and poor cognitive and educational performance is strong. Grantham-McGregor et al. (2007) found that early cognitive and social emotional development is highly correlated with future academic performance. Poverty significantly complicates this development. Paxson and Schady (2007) looked at the role of poverty specifically with regards to child language development. In analyzing the scores of over 3,000 Ecuadorian children on the Spanish language version of the Peabody Picture Vocabulary Test, researchers found that children from poorer backgrounds score consistently lower than their peers. Moreover, the largest gap in scores exists between the richest and poorest students. Figure 1 demonstrates the aforementioned relationship:

*Figure 1: Vocabulary scores of Ecuadorian children aged 36 to 72 months by wealth quartiles (Paxson & Schady, 2007)*
Going forward, the inadequate development of these children leads to decreased productivity of the general population, and affects future generations (Del Rosso & Marek, 1996). With so many converging factors, this cycle of poverty is difficult to break, and has pervasive repercussions.

In terms of making lasting changes in health and education matters, the importance of parent involvement is well documented (Del Rosso & Marek, 2006; Escobal et al., 1998; Engle et al., 2007; Garcia Martinez, 2006). Unfortunately, in most cases, there is a correlation between socioeconomic status and parental involvement, further reinforcing the inequalities. And, while the United Nations Children's Fund (UNICEF) and other governing bodies continue to promote parent education programs, many governments in the developing world lack such support, and have no formal policy on parental involvement/training (Engle et al., 2007). Without the consistent involvement of families, there is little that teachers and school administrators can do to create sustained changes.

Turning specifically to the case of Peru, many of the aforementioned complications are observed. Nearly a third of all Peruvians (31.3%) live in poverty, and 9.8% live in extreme poverty (Panamerican Health Organization, 2010). Only 4% of the population is unemployed, but 44% is underemployed, and the majority of adults do not have a high school diploma (Panamerican Health Organization, 2010). It is worth noting that, while the gross domestic product (GDP) of Peru continues to grow, government expenditures on health and education (4.6% and 2.7%, respectively, of GDP) remain among the lowest in the world. Figure 2 from Benavides and Magrith (2010) shows how Peru's education spending compares to other countries in the region:
Figure 2: Public education funding as percentage of GDP (Benavides and Magrith, 2010)

To be fair, many improvements have occurred in the Peruvian education system, but significant deficits persist. Benavides and Magrith (2010) found that, from 2005-2009, there were advancements in, among other areas, test scores, school matriculation, student retention, and investment in education. Despite these advancements, student test scores and financial investment in education (as alluded to above) remain well below regional averages (Benavides & Magrith, 2010). Specifically with regards to student performance in assessment of communication (akin to United States of America’s concept of Language Arts), third and sixth grade student scores on standardized tests are significantly below regional averages (Ganimian, 2009). Performance on math assessments is equally low (Ganimian, 2009). The disparity between urban student and rural student performance in Peru is also the highest of any country in Latin America (Ganimian, 2009). Matalinares et al. (2007) revealed similar
disparities in language development. The authors compared the performances of 230 fifth and sixth grade students from urban and rural areas on receptive language and auditory memory tests. Upon analysis, they found that both receptive language skills and auditory memory are significantly stronger in urban-based children as compared to their rural peers.

Regular school attendance is another complication for rural students in Peru. On a national scale, school attendance has increased in both primary and secondary schools, but over 800,000 children still do not attend (Benavides & Magrith, 2010). The majority of these children reside in isolated villages. Many students (approximately 16% according to Benavides & Neira, 2010) in Peru speak Spanish as a second language; however, there are very few teachers with formal training (known nationally as Intercultural Bilingual Education - EIB) to attend to these students (Benavides & Magrith, 2010). Unfortunately, this lack of specialized support is quite common throughout the country, and is seen even more drastically in special education services.

In 1990, the Ministry of Education implemented a national plan to integrate schools and include students with special needs. The plan, "Integration of Disabled Children into Common Schools," was co-sponsored by the Regional Bureau of Education for Latin America and the Caribbean (OREALC) and the United Nations Educational Scientific and Cultural Organization (UNESCO), and intended for nationwide implementation. Unfortunately, more than twenty years later, it is estimated that of the 57,816 public schools in Peru, only 862 serve students with special needs; and, of these 862, only 414 (less than one percent) are considered inclusive education settings (Velasquez, 2007). For both the city of Cajamarca, population 120,000, and,
the nearby city of Celendin, population 100,000, a total of two special education schools exist, serving 350 and 15 students, respectively (Rodriguez, 2001). Of the Peruvian Ministry of Education's total budget, special education accounts for only .5% (Velasquez, 2007).

Another challenge in the developing world, specifically for children with disabilities, is the power of myths and traditional beliefs regarding these conditions. Even in developed countries, prejudices towards individuals with disabilities are strong and well-documented. In the developing world, cultural beliefs about disability, in the most extreme cases, may motivate parents to abandon their children; and, even in the milder cases, may convince caregivers that the child's capacities are much less than they actually are (Albrecht et al., 2001). Throughout Peru, similar beliefs exist, and limit the extent to which children with special needs participate in school. Despite many efforts to create a more inclusive and universal educational system, children with disabilities, particularly those with more significant challenges such as autism, cerebral palsy, and cognitive disabilities, are rarely served within the public education system. A recent study in the Zarate district of Lima concluded that 80% of primary school teachers are unprepared to work with children who are deaf (Velasquez, 2007). Similarly, the participation of parents and other natural supports in this process of integration has been limited (Pareja Fernandez, 2009).

There exists very little information on speech language pathology services in Peru. Research articles are scarce, and the Ministry of Education shares limited information about the coordination of these services. Of the few articles that touched upon these supports in Peru, Velasquez (2007) reported that a mere 38% of public
schools in Peru offer speech-language pathology supports to their students. And, it is worth noting that this statistic is considered an overestimation of actual provision (Velasquez, 2007). Only 52.9% of children in poverty attend preschool programs, and virtually none of these programs have speech-language pathology services available (Velarde, 2009). Velarde (2009) also documents the existence of a national language development scale (ILNP) for children 9 to 60 months of age, but also acknowledges that the scale is not widely implemented or recognized. Similarly, Chocano (2001) describes a novel intervention for children with expressive language disorder, but participation and promotion of the intervention was limited. Illiteracy persists in Peru, and the Peruvian Ministry of Education (2011) has acknowledged that full eradication of illiteracy will require a multi-faceted approach which includes the integration of speech-language pathology supports. Again, while the public education system in Peru certainly includes speech language pathology, specific details regarding research, intervention, and public policy in this field are quite limited.

While significant systemic changes are needed to improve the Peruvian education system (Benavides & Magrith, 2010), programs for professional development are equally necessary. It should be noted that governing bodies, the National Program for Permanent Capacity-Building and Formation in particular, are, in fact, engaging in professional development programs for teachers. According to Vice Minister of Education Idel Vexler, 35,000 teachers received professional development training in 2007; 60,000 in 2008; and an estimated 30,000 in 2009 (Vexler, 2009). Unfortunately, teacher participants reported that both the design and implementation of these trainings were lacking (Benavides & Magrith, 2010). First, the courses were far too generalized,
and did not address specific teacher/student concerns (Benavides & Magrith, 2010). Moreover, there was no serious analysis of how professional development improved student performance, and the content itself was much more conceptual than practical in nature (Benavides & Magrith, 2010). According to Benavides and Neira (2010), all teacher-focused professional development programs in Peru should be focused on three components: diversified educational materials, intensive teacher trainings, and individualized intervention plans with data collection. To date, no nationally-implemented professional development program has included all three components.

This overview represents only a portion of the literature that is relevant to the present study. The poverty encountered in the developing world creates unique challenges in terms of health care and education. In the case of Peru, the limited governmental support, particularly with regards to funding allocation, makes the situation even more complicated. As mentioned above, few children in Peru have access to specialized supports such as speech-language pathology services (Velasquez, 2007). As this reality is not likely to change in the immediate future, there is a tremendous opportunity for professionals in the developed world to add value into this system. By gaining a baseline understanding of the Peruvian educational system and how it serves students with communication disorders, future support of this system will be facilitated. The present study was designed to establish this understanding. Through surveys and interviews with parents and teachers, the following questions were explored:

a. What do parents and teachers know about communication disorders?
b. How sufficient are current educational resources in attending to students with communication disorders?

In answering these questions, the following sections will detail the study methods (including participants, measures, and procedures), quantitative and qualitative analysis of the results, and a discussion of the study’s findings.

**Methods**

This study uses the term "communication disorder" according to the following definition provided by the American Speech-Language Hearing Association:

A communication disorder is an impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems. A communication disorder may be evident in the processes of hearing, language, and/or speech. A communication disorder may range in severity from mild to profound. It may be developmental or acquired. Individuals may demonstrate one or any combination of communication disorders. A communication disorder may result in a primary disability or it may be secondary to other disabilities.¹

This definition was selected so as to allow the broadest interpretation of the condition, and gather as much information as possible. The wide variety of conditions included in this definition must be considered upon review of this study and the corresponding data.

**Participants**

Participants were drawn from a convenience sample, and included 38 Peruvian adults (2 male and 36 female). All 38 were actively living in Peru, and 35 were born and raised in the country. Ages ranged from 18 to 65 years (M = 40.5; SD = 13.6). The participants included 20 primary school teachers (grades 1, 2, or 3); 6 secondary school teachers; one psychologist; one social worker; and 10 parents. Pre-study inclusion

criteria required that all teachers be actively working in a kindergarten, first, second, or third grade classroom. For parents, inclusion criteria required that the father or mother have a child aged 5-9 years with a communication disorder. 27 participants (20 teachers and 7 parents) met the pre-study inclusion criteria. Because the 11 remaining participants provided meaningful and relevant data, these results were not discarded. All parents, and most teachers (25 of 28) lived in Lima metropolitan. Tables 1 summarizes the demographic characteristics of all 28 teachers (this group includes the psychologist and social worker). The table is divided into two parts with the teachers meeting inclusion criteria listed first, followed by those not meeting criteria.

Table 1: Demographic characteristics of teacher participants (meeting and not meeting criteria, n=28)

<table>
<thead>
<tr>
<th>TEACHERS MEETING CRITERIA</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
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<tr>
<td><strong>Sex</strong></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
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<td></td>
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<td>14.1</td>
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<tr>
<td><strong>Highest Education Completed</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>3</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor's</td>
<td>7</td>
<td>35</td>
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</tr>
<tr>
<td>Master's</td>
<td>8</td>
<td>40</td>
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<tr>
<td>Doctorate</td>
<td></td>
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<tr>
<td>Not reported</td>
<td>2</td>
<td>10</td>
<td></td>
<td></td>
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<tr>
<td><strong>Years of teaching experience</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>1st year</td>
<td>1</td>
<td>5</td>
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<td>1 to 3 years</td>
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<td>4 to 8 years</td>
<td>1</td>
<td>5</td>
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<td>16 or more years</td>
<td>14</td>
<td>70</td>
<td></td>
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<tr>
<td>Not reported</td>
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<td>5</td>
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Table 1 ctd

<table>
<thead>
<tr>
<th>TEACHERS NOT MEETING CRITERIA</th>
<th>n</th>
<th>%</th>
<th>M</th>
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<tr>
<td><strong>Sex</strong></td>
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<tr>
<td>Female</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
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<tr>
<td><strong>Highest education completed</strong></td>
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<tr>
<td>Some college</td>
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<tr>
<td>Bachelor's</td>
<td>2</td>
<td>25</td>
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<tr>
<td>Master's</td>
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<td>62.5</td>
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<tr>
<td>Doctorate</td>
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<td>12.5</td>
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<td><strong>Years of teaching experience</strong></td>
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<td>1st year</td>
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</table>

**Measures**

The present study included both quantitative and qualitative research methods. Again, as previously mentioned, the study operated under a wide-reaching definition of communication disorders, and thus, both in data collection and analysis, a holistic research approach was taken. The majority of the survey was rooted in a quantitatively-analyzed Likert scale, while a component of the survey and the entirety of the interviews were conducted according to qualitative methods. A phenomenological approach to the qualitative research was chosen, and, as such, the researchers wished to understand how the teachers and parents perceived the phenomenon of communication disorders
within the Peruvian education system. Both the quantitative and qualitative analyses were focused on the two primary research questions mentioned in the previous section.

**Teacher Surveys.** Participating teachers completed a survey based on pre-existing models (Peruvian Ministry of Education, 2006; Carlisle, et al. 2011; Markow et al., 2009). To ensure that the survey was culturally appropriate, the primary investigator shared the tools with several local experts. Based on their input, the tools were modified and then returned to these experts for final review prior to implementation. The purpose of the surveys was to gather information about the teachers’ knowledge of communication disorders and the availability of educational resources. The survey also analyzed how teachers are currently dealing with communication disorders in their classroom; and determined the needs/interests for professional development. And, as mentioned above, surveys were a combination of Likert-Scale quantitative questions and qualitative questions. See Appendix A for further details on the survey.

**Teacher interviews.** Some teachers also participated in an interview based on pre-existing models (Peruvian Ministry of Education, 2006; Benavides & Magrith, 2010, What Kids Can Do, 2004; Griffee, 2005). As with the survey, both the teacher and parent interview questions were shared with local experts to ensure cultural appropriateness. To minimize the impact of cultural differences, the investigator spent a significant amount of time establishing rapport with each participant before they completed interviews. The purpose of the interviews was to gather additional qualitative data related to the purposes mentioned above. The primary investigator entered this community without extensive knowledge of the educational system in general, and speech-language pathology services in particular. This, combined with the fact that the
literature review left many unanswered questions, served as the motivation to supplement the survey results with interviews. It was determined that only through open-ended conversations with local experts could the important issues truly be addressed. All interviews were conducted upon completion of the survey, and, as mentioned above, were initiated with a series of pre-selected questions. In all cases, however, the conversations eventually deviated from these questions, so as to allow the teacher to share what she felt important. See Appendix B for more information on the pre-selected teacher interview questions.

**Parent interviews.** Parents of children with communication disorders were also interviewed. The role of parents in child development cannot be underestimated, and, as this study is intended as an information-gathering exercise, the primary investigator felt it very important to include their experiences. Like the teacher interviews, these conversations were modeled on pre-existing templates (Benavides & Neira, 2002; What Kids Can Do, 2004; Griffie, 2005). Interviews were qualitative in nature, and based off of a set of general, pre-selected questions. Again, as with the teacher interviews, each conversation eventually deviated from these questions so as to follow the parent's lead. Appendix C contains the pre-selected parent interview questions.

**Procedures**

During the early stages of the study, the viability of completing in-person interviews and surveys was unclear. Prior to this confirmation, four surveys were completed online. Coordination with participants was completed over the phone, and consent was secured through email correspondence. Participants were then sent an
electronic version of the survey, which was completed and returned over a secure internet connection.

Once the opportunity for in-person data collection was confirmed, the remaining 34 teachers and parents participated in the study between May 7th and May 11th, 2012. All surveys and interviews were completed in Lima, Peru at the following locations: Centro Educativo Cerrito Azul in San Juan de Miraflores; Centro Educativo Fe y Alegria #26 in San Juan de Lurigancho; Instituto Educativo #0086 Jose Maria Arguedas; and Instituto Educativo #086 Cuna Jardin-Campoy in San Juan de Lurigancho. Participating parents and teachers at Cerrito Azul, Jose Maria Arguedas, and Cuna Jardin completed surveys and interviews at their respective schools. Interviews with parents and teachers from Fe y Alegria were also completed at the school; however, all participating teachers completed surveys in their homes after school (May 8th) and returned them the following day.

All surveys, interviews, and related communications were conducted in Spanish. School administrators coordinated meeting times with all participating teachers and parents. For all in-person participants, interview questions and surveys were presented on physical, paper copies. Clarification regarding survey questions was provided as needed, and all surveys and interviews were completed in a quiet, isolated space in each participating institution. In order to best capture the information from each interview, permission to video record each conversation was solicited from participants. A total of 17 interviews were conducted (7 teachers, 10 parents), 5 of which (4 parents, 1 teacher) were recorded on video. Of the remaining 10 interviews, 5 participants (3 teachers, 2 parents) consented to have the conversation recorded on audio, and 7 (4
parents, 3 teachers) declined both audio and video recording. These conversations were summarized with written notes. All but one interview participant was female. Once again, as described in the introduction, all survey and interview questions were centered on the two primary research questions:

a. What do parents and teachers know about communication disorders?
b. How sufficient are current educational resources in attending to students with communication disorders?

Results

Quantitative Analysis

Teacher Surveys. As previously mentioned, surveys included both Likert scale, quantitative items, and qualitative, open-ended questions. In Tables 2 and 3 below, the left-hand column contains a brief description of each question; the middle column contains the modal response; and the right-hand column provides the standard deviation in responses. As questions 1 and 2 were reported in the participant descriptions found in Table 1, they are excluded from the following table. Of the 28 teachers and education personnel that completed surveys, 7 taught at a special education school. Because the characteristics of this educational setting varied significantly from those of the participating public schools, they were analyzed separately, and are summarized in Table 2. Of these 7 special education teachers, 5 met inclusion criteria. Because all seven participants were heavily involved in the assessment and intervention of communication disorders, even the participants that did not meet pre-study inclusion criteria are included in Table 2. The results of the 15 public school-based participants that met criteria are summarized in Table 3. For
information on the responses of the teachers and education personnel not meeting criteria, see Appendix D.

Table 2: Special education teacher survey results summary- quantitative  
(CD is an abbreviation for communication disorders)  n=7

<table>
<thead>
<tr>
<th>Question</th>
<th>Modal response (% of total responses)</th>
<th>SD (range of all responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Hours teaching class/week</td>
<td>More than 25 (100%)</td>
<td>0</td>
</tr>
<tr>
<td>b. Hours preparing lessons /week</td>
<td>Less than 20 (86%)</td>
<td>.38 (all under 25 hours)</td>
</tr>
<tr>
<td>c. Number of students</td>
<td>Less than 15 (100%)</td>
<td>0</td>
</tr>
<tr>
<td>d. Number of students with CD</td>
<td>3-5 (43%)</td>
<td>1.07 (one to more than 8)</td>
</tr>
<tr>
<td>e. There are not too many children in my class</td>
<td>Completely agree (100%)</td>
<td>0</td>
</tr>
<tr>
<td>f. I have knowledge of CD</td>
<td>somewhat agree (57%)</td>
<td>.53 (completely to somewhat agree)</td>
</tr>
<tr>
<td>g. I feel prepared to attend to children w/ CD</td>
<td>Completely agree (71%)</td>
<td>.49 (completely to somewhat agree)</td>
</tr>
<tr>
<td>h. My coworkers/administrators help me work w/ children w/ CD</td>
<td>Completely agree (100%)</td>
<td>0</td>
</tr>
<tr>
<td>i. The quality of resources in my school are adequate (for work w/ children w/ CD)</td>
<td>somewhat agree (71%)</td>
<td>.49 (completely to somewhat agree)</td>
</tr>
<tr>
<td>j. The quantity of resources in my school are adequate (for work w/ children w/CD)</td>
<td>somewhat agree(86%)</td>
<td>.38 (completely to somewhat agree)</td>
</tr>
<tr>
<td>k. I understand what speech language pathologists do</td>
<td>somewhat agree (86%)</td>
<td>.38 (somewhat agree to unsure)</td>
</tr>
<tr>
<td>l. I understand what audiologists do</td>
<td>somewhat agree (57%)</td>
<td>1.27 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>m. I understand the link between language and literacy</td>
<td>unsure (57%)</td>
<td>.53 (somewhat agree to unsure)</td>
</tr>
</tbody>
</table>
Table 2 ctd

<table>
<thead>
<tr>
<th>Question</th>
<th>Modal Response</th>
<th>SD (range of all responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n. I communicate with the parents of children w/ CD</td>
<td>completely agree (86%)</td>
<td>.38 (completely to somewhat agree)</td>
</tr>
<tr>
<td>o. I collaborate w/ these parents to attend to children w/ CD</td>
<td>Completely agree (86%)</td>
<td>.38 (completely to somewhat agree)</td>
</tr>
<tr>
<td>p. I would like to learn more about CD</td>
<td>completely agree (100%)</td>
<td>0</td>
</tr>
<tr>
<td>q. I have most knowledge of (type of CD)</td>
<td>speech disorders (43%)</td>
<td>1.22</td>
</tr>
<tr>
<td>r. I have least knowledge of (type of CD)</td>
<td>reading disorders (57%)</td>
<td>.63</td>
</tr>
<tr>
<td>s. The best way to learn would be</td>
<td>teacher training (57%)</td>
<td>.53</td>
</tr>
</tbody>
</table>

Table 3: Mainstream education teacher survey results summary- quantitative (CD is an abbreviation for communication disorders) n=15

<table>
<thead>
<tr>
<th>Question</th>
<th>Modal response</th>
<th>SD (range of all responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Hours teaching class/week</td>
<td>more than 25 (73%)</td>
<td>1.16 (less than 5 to more than 25)</td>
</tr>
<tr>
<td>b. Hours preparing lessons /week</td>
<td>less than 20 (47%)</td>
<td>.77 (less than 20 to 25-30)</td>
</tr>
<tr>
<td>c. Number of students</td>
<td>more than 30 (87%)</td>
<td>.53 (20-25 to more than 30)</td>
</tr>
<tr>
<td>d. Number of students with CD</td>
<td>5-8 (33%)</td>
<td>1.15 (1-3 to more than 8)</td>
</tr>
<tr>
<td>e. I have enough time to prepare for my classes</td>
<td>somewhat agree (47%)</td>
<td>1.17 (completely agree to completely disagree)</td>
</tr>
</tbody>
</table>
Table 3 ctd

<table>
<thead>
<tr>
<th>Question</th>
<th>Modal Response</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>f. There are not too many children in my class</td>
<td>completely disagree (33%)</td>
<td>1.5</td>
</tr>
<tr>
<td>g. I have knowledge of CD</td>
<td>somewhat agree (67%)</td>
<td>.73</td>
</tr>
<tr>
<td>h. I feel prepared to attend to children with CD</td>
<td>somewhat agree (53%)</td>
<td>.88</td>
</tr>
<tr>
<td>i. My coworkers/administrators help me work with children with CD</td>
<td>somewhat agree (40%)</td>
<td>1.52</td>
</tr>
<tr>
<td>j. The quality of resources in my school are adequate (for work with children with CD)</td>
<td>completely disagree (27%)</td>
<td>1.34</td>
</tr>
<tr>
<td>k. The quantity of resources in my school are adequate (for work with children with CD)</td>
<td>somewhat agree (27%)</td>
<td>1.19</td>
</tr>
<tr>
<td>l. I understand what speech language pathologists do</td>
<td>completely agree (67%)</td>
<td>1.18</td>
</tr>
<tr>
<td>m. I understand what audiologists do</td>
<td>completely agree (47%)</td>
<td>1.25</td>
</tr>
<tr>
<td>n. I understand the link between language and literacy</td>
<td>somewhat agree (53%)</td>
<td>.95</td>
</tr>
<tr>
<td>o. I communicate with the parents of children with CD</td>
<td>completely agree (47%)</td>
<td>1.08</td>
</tr>
<tr>
<td>p. I collaborate with these parents to attend to children with CD</td>
<td>somewhat agree (60%)</td>
<td>1.05</td>
</tr>
<tr>
<td>q. I would like to learn more about CD</td>
<td>completely agree (100%)</td>
<td>0</td>
</tr>
<tr>
<td>r. I have most knowledge of (type of CD)</td>
<td>writing disorders (27%)</td>
<td>1.11</td>
</tr>
<tr>
<td>s. I have least knowledge of (type of CD)</td>
<td>receptive language disorders (60%)</td>
<td>.83</td>
</tr>
<tr>
<td>t. The best way to learn would be</td>
<td>teacher training (73%)</td>
<td>.29</td>
</tr>
</tbody>
</table>

Because of the smaller sample size, the special education teacher responses have more consistency. All standard deviation scores are below 1.3, and only 3 of 19
questions (the number of students with communication disorders, level of understanding of audiologists' role, and highest level of knowledge about communication disorders) generated standard deviations over 1.0. All teachers spend more than 25 hours leading class, have less than 15 students, are comfortable with the number of students in their class, and feel supported by their coworkers. And, while there are significant differences in the responses of mainstream and special education teachers, every single respondent agreed that he/she would like to learn more about communication disorders. Almost all participants (18 out of 22) said the best way to learn would be through teacher trainings. The responses also demonstrate that the special education teachers spend less time preparing for class, and that none of the 22 respondents spends more than 30 hours per week in preparation.

As previously mentioned, in the mainstream education surveys, less consistency was observed. Eleven out of 20 questions generated a standard deviation over 1.0, and two ("my coworkers help" and "there aren't too many children in my class") had a standard deviation over 1.5. Higher levels of parent-teacher communication and collaboration were observed in the special education setting; and these teachers also felt more comfortable with the quantity and quality of resources available at their school.

A final point of interest in the quantitative analysis of surveys was the teachers' knowledge of communication disorders. In both groups (57% in special education and 67% in mainstream education), the majority of educators say they have knowledge of communication disorders. There was less consistency, however, regarding knowledge levels of specific types of communication disorders. The special education teachers were in agreement that they knew least about reading disorders. In fact, none said they
were most knowledgeable about this type of impairment. And, while the mainstream education teachers varied significantly in areas of highest knowledge (standard deviation of 1.11, and at least two responses for each type), no teachers felt least knowledgeable about reading disorders. So, interestingly, mainstream education teachers feel most comfortable, while special education teachers feel least comfortable, about reading disorders. The variability in responses reflects the fact that communication disorders are not prioritized in the formation of Peruvian teachers, and suggests a need for further analysis. With this brief quantitative analysis of the surveys complete, a qualitative analysis of the interviews follows.

**Qualitative Analysis**

Qualitative analysis was used in analyzing the interviews and the open-ended survey questions. While quantitative analysis presents its own unique challenges, qualitative analysis requires that the researcher be both creative and disciplined (Powell & Renner, 2003). Each item of data must be understood as unique and representative of one individual's experiences. At the same time, through reflection and intuition, the researcher must recognize consistencies to arrive at a series of conclusions (Gilchrist, 2000). A common practice in qualitative analysis is to categorize data according to a series of themes. According to Powell and Renner (2003), these themes may be preset (determined prior to analysis) or emergent (determined after analyzing the data). As previously mentioned, the primary investigator entered this community without extensive experience or knowledge, and thus an emergent system of categorization was used for this study. And, again, as the interviews and surveys were completed according to a phenomenological approach, this same method was used during data analysis.
Qualitative data analysis was conducted in a three-step process. First, individual responses were recorded descriptively, simply describing and recording each statement exactly as it was produced. Second, the entire data set was analyzed comparatively, searching for overarching themes that fit into the emergent categories. Finally, these themes were interpreted with the intention of drawing conclusions about the primary research questions.

**Teacher surveys.** Four of the survey questions were analyzed according to the aforementioned qualitative methods. These were open-ended questions in which participants were given space to provide written responses. The questions, general themes in responses, and specific responses are described in Table 4:

*Table 4: Teacher surveys - qualitative analysis*

<table>
<thead>
<tr>
<th>Question</th>
<th>Theme (and total responses)</th>
<th>Specific Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you want to learn about CD?</td>
<td>Concepts of speech-language pathology (12)</td>
<td>use of specific materials; info about S/L; S/L exercises and techniques; info about articulation; reasons for S/L disorders; picture exchange communication systems (PECs); prevention; stuttering support</td>
</tr>
<tr>
<td>Teaching strategies (9)</td>
<td></td>
<td>establishing rapport with students</td>
</tr>
<tr>
<td>Diagnosis and assessment (4)</td>
<td></td>
<td>evaluation; assessments; psychological evaluation; standards for the home; identification/treatment</td>
</tr>
<tr>
<td>Development of independent living skills (2)</td>
<td></td>
<td>socialization; personal hygiene</td>
</tr>
</tbody>
</table>
### Table 4 ctd

<table>
<thead>
<tr>
<th>Question</th>
<th>Theme (and total responses)</th>
<th>Specific Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What works for children w/CD?</strong></td>
<td>Specific activities and materials (10)</td>
<td>didactic reasoning materials; poetry, songs, and theater; PECs; using real-life sounds to teach articulation; speech-language therapy (outside school); articulation games; worksheets; math games; tongue twisters; phonetics</td>
</tr>
<tr>
<td></td>
<td>Student engagement strategies (9)</td>
<td>using laminated materials; purposeful interactions w/ students; varied presentation; constant dialogue; extensive planning; planned readings; treating children with love and respect; listening to children and encouraging them to listen</td>
</tr>
<tr>
<td></td>
<td>Reading comp. (3)</td>
<td></td>
</tr>
<tr>
<td><strong>What is lacking?</strong></td>
<td>Training (5)</td>
<td>orientation of how to support CD; strategies for teaching; activity ideas; reading comprehension strategies; detection CD</td>
</tr>
<tr>
<td></td>
<td>Materials (5)</td>
<td>assessment materials; books</td>
</tr>
<tr>
<td></td>
<td>Parent participation (3)</td>
<td>more structure/rules at home; parent training</td>
</tr>
<tr>
<td></td>
<td>S/L services (3)</td>
<td>articulation therapy/support</td>
</tr>
<tr>
<td></td>
<td>Behavior support (3)</td>
<td>classroom management; classroom order; assistance of a behavioral specialist</td>
</tr>
<tr>
<td><strong>Additional comments</strong></td>
<td>Materials Needed (4)</td>
<td>I would like a video about articulation; research information; assessment information</td>
</tr>
<tr>
<td></td>
<td>Teacher training needed (3)</td>
<td>please help me with my students; we need training; we need support</td>
</tr>
<tr>
<td></td>
<td>Misc. (2)</td>
<td>we need the support of a psychologist; it seems like families try to hid these problems</td>
</tr>
</tbody>
</table>

As reflected in Table 4, a number of overarching themes surfaced upon analysis of the survey questions. Several teachers want to learn more about speech language pathology in general, and diagnosis and assessment in particular. Many are also looking for additional teaching strategies, while a smaller number are interested in helping students develop independent living skills. And while deficits in the current
system are evident, teachers are also doing a great job of creating their own activities and materials, engaging students in the learning process, and reinforcing reading comprehension. Teachers say that additional training and materials are most necessary (this was reiterated in the additional comments); and also that parent participation, speech language pathology services, and behavior support are needed. As is seen throughout the data, the teachers' responses suggest that they do, in fact, have knowledge of communication disorders. Moreover, the responses demonstrate that they are capable of using limited resources to create effective activities for children with communication disorders. At the same time, it is clear that many of the teachers would appreciate support in their work with these children, and that speech language pathology- specific training and materials are what is most desirable. With this information in mind, the following section provides in-depth personal accounts from the parent and teacher interviews.

**Parent/teacher Interviews.** As with the qualitative survey questions, the interview comments were categorized into common themes through a process of descriptive, comparative, and inferential analysis. Consistent with the template provided in Gilchrist (2000), the author also developed the following "portraits" of parent and teacher caregivers. As the name implies, the portraits are personal representations of individuals who live and work with children with communication disorders. Each portrait provides valuable insight into the world of communication disorders in Peru. In order to protect the privacy of everyone involved, first name initials have been used for both the participants and the children. In those cases where more than one participant
shares the same initial, numbers are used to distinguish them. Transcripts and written notes from all 17 interviews can be found in Appendix E.

**Individual profiles**

**J1**

J1 is a 60 year-old first grade teacher in Lima. Though she is among the oldest teachers at her school, peers say she is one of the most energetic and passionate. She has taught for over 30 years, but still has a desire to learn and grow in her profession. J1 has developed a number of effective teaching strategies, and her interview revealed a few:

As I work with children from 1st and 2nd grade, I work to develop their phonological awareness. To work on these concepts, I have a series of very large laminated pages with images on them. The images are easily recognizable for the children: a cat, a dog, a banana...The pages are organized in alphabetical order. When we are going to use these figures, I tell the children that we are going to play a game. I will say, for example, "Children, find the butterfly." They then find the image of the butterfly somewhere on the floor. It has the image, but also the whole word "butterfly" separated by syllable. Each syllable has a different color. Once they find the image, I ask them how many sounds there are in "butterfly." We count the sounds out by jumping. I then expand on the activity by asking them what sound "butterfly" begins with. These children are very active, so the jumping helps. This activity transfers into other activities we do with writing. They remember it. They also teach and support each other.

**R1**

R1 is the mother of V, a 6 year-old boy with autism. When her son was very young, she says, he produced many sounds, but now he doesn't speak. He is a beautiful young boy, but has some severe behaviors. R1 knows a great deal about autism, but could still use more help. She hopes her son will learn to talk one day; and,
as she explains below, she feels that many people in Peru still don't know how to deal
with someone with autism:

I really want my son to speak. That would be my number one goal. He understands....he just can't talk. When he wants something, he takes me by the hand and walks me to what he is talking about. He doesn't signal, speak, or gesture. He has moments when his behavior becomes aggressive. When this happens, the teachers have taught me to be patient and wait. Sometimes, though, when I get upset, he will notice, and come give me a kiss as a way of saying "don't be mad."
People in my family, out in public, do not have enough patience with V. They think he just has bad behavior but don't really know what is going on with him. The community needs more knowledge about children with special needs. Many people don't know how to handle them.

L

L is the mother of J, a fourteen-year-old child with moderate cognitive impairment. Like R1, L has noticed that people out in the community (and in her family) do not have the patience required to interact with her son. She, too, hopes that her son will learn to talk one day. His lack of communication skills creates behavioral challenges, and L's situation is made even more difficult because she is a single mom living in poverty.

He was a very sick baby. He suffered so many things...bronchitis, stomach problems, flu. After a while I just didn't give him the medicine because it seemed like it was intoxicating his body. He got sick so much it also made it hard to get him to therapy appointments. I hope he learns to speak sometime in the future. I would like a speech therapist here at the school. I want him to learn.
I don't know how much life my child will get to live. The truth is that the future of my son scares me. I hope he finds someone that can help him, can help take care of him. The whole family worries about him, but what can we do? It's very sad to have a child with special needs. This is what all of us mothers here (at a special education school) suffer. It's hard because I don't see much possibility of him working further along. I think my faith in God is the reason I keep going forward with my son.
R2

R2 is the father of, M, a nineteen-year-old young man with a pragmatic language disorder. He has extensive vocabulary, and no cognitive deficits; however, his communication impairment has always prevented him from developing friendships. As M grows into an adult, his father worries about how his pragmatic language disorder will impact his ability to get a job, live independently, and have a family.

The good thing is that here at school, he is forced to socialize and interact, because outside he has few friends. I want him to be able to go do things by himself: go to the store, go out in the community....as a young child he had one good friendship, but since then he has not. I worry that he might have an accident when he is out by himself. He gets distracted, and this is concerning. We want him to develop more language, more ways of communicating so he can reduce his deficits. We know some things to do with him in the house, but could always learn more. The school is helping a lot, but we need more help.

The preceding anecdotes provide some insight into the reality for parents and teachers in Peru. With regards to the research questions, these commentaries reinforce the notion that both parents and teachers are knowledgeable about communication disorders, and that they are quite resourceful in using the available materials to meet the needs of their children. With that being said, teachers and parents want to learn more, and need more resources to best serve their children with communication disorders. In the following section, these research questions are explored in greater detail.
Interview Themes.

In analyzing the interviews in their entirety, a number of themes emerged. They are summarized in Table 5:

Table 5: Interview Themes

<table>
<thead>
<tr>
<th>Teacher Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective classroom methods exist</td>
</tr>
<tr>
<td>Schools/teachers have limited resources</td>
</tr>
<tr>
<td>More teacher training needed</td>
</tr>
<tr>
<td>Parent Themes</td>
</tr>
<tr>
<td>Behavioral concerns accompany speech/language concerns</td>
</tr>
<tr>
<td>Parents are concerned about their children’s’ futures</td>
</tr>
<tr>
<td>More parent training is needed</td>
</tr>
<tr>
<td>People don’t understand disabilities and communication disorders</td>
</tr>
</tbody>
</table>

The themes summarized in Table 5 are explained in greater detail in the paragraphs that follow. For further detail on the comments included in these paragraphs, please refer to the interview transcripts and notes in Appendix E.

**Effective classroom methods exist**

On several occasions, teachers expressed concerns about their capabilities to attend to children with communication disorders. Despite these reservations, the most consistent theme revealed in these conversations was their collective skill in creating effective interventions for these same students. Whether the strategy was learned from a colleague or developed independently, these teachers demonstrated an impressive propensity to meet the needs of their students. As mentioned in the profiles above, J1 uses a multisensory age-appropriate game to reinforce phonological awareness with her first-grade students. Similarly, another primary school special education teacher, N, has developed an effective system for encouraging multimodal communication. Every
child that enters the classroom is expected to communicate a greeting. "If they do not have verbal communication," she says, "I encourage them to greet with gestures." Another effective intervention method used by N and many other teachers is the implementation of real-life learning opportunities. She uses "real coins, not just fake paper money," and the students "practice making a fruit salad with real fruit, not just playing with plastic fruit." Similarly, M2, another special educator, works on various mathematical and linguistic concepts by having students go out into the community to make purchases.

_Schools/teachers have limited resources_

A second theme manifested in the teacher interviews was that, despite the effective implementation of interventions for students with communication disorders, there are significant deficits in school resources. J4, a primary school teacher, says that more books and materials for children with special needs are required. Along these lines, J1 feels that educational materials and resources for teachers are scarce. M2 reiterates these concerns: "We lack infrastructure, we do not have therapy for the children. We don't have a gym, music, or a pool...we need our own center."

_More teacher training needed_

The final theme to emerge in the teacher interviews was that additional training is needed. The general consensus was that teachers are not adequately prepared to work with children with communication disorders. M2 says "the national system does not help teachers work with children with different abilities." Similarly, N and J3 express concerns that other special education schools are simply not providing adequate services. Without more training, the interviews suggest that teachers at these schools
will continue to deliver insufficient supports. Another teacher, T, says that teacher training exists, but she thinks very few teachers actually put the lessons into practice.

*Behavioral concerns accompany speech/language concerns*

According to the parents interviewed, many children with communication disorders also have problematic behaviors. The link between maladaptive behaviors and communication disorders is common; however, it was interesting to learn that this correlation was strong in children in both mainstream and special education settings. R1, the aforementioned mother of a 6-year-old child with autism, says that her son "becomes aggressive when we don’t give him something...he throws himself on the ground." Similarly, L, says that her son "sometimes cries, sometimes he bites his hand," especially when he doesn't want to be stuck in the house. Another parent, R2, says that his boy can become quite aggressive, sometimes hitting other children.

*Parents are concerned about their children's futures*

The second theme to emerge in the parent interviews was that many are worried about their children's futures. While this is quite common for all parents, the nature of these concerns is worth noting. As mentioned in the previous section, L says "the future of my son scares me...I don't see much possibility of him working further along." ML, the mother of an adult child with severe cognitive impairment worries about where her daughter will live when she can no longer care for her: "there is not an adequate housing situation for adults with developmental disabilities. There are some but they mistreat the residents." For the children with less severe conditions, parents worry about the level of independence they can achieve. R2 says he wants his son "to be able to do things by himself- go out with friends, go to the store."
More parent training is needed

Another theme that came out of parent interviews was that additional training would be helpful. As with the teachers, parents know a good deal about their children's conditions; however, almost all agreed that further orientation is required. H2, mother of 7-year-old J (no known diagnosis) says she wants to learn more ways to keep supporting her son. She says that even though there are few resources available for parents, just learning more would really help. In a similar way, A2, parent of 9-year-old M (no known diagnosis) says she wants to know more about where her daughter should be with her studies.

People don't understand disabilities and communication disorders

The final theme that came out of the parent interviews was that many Peruvians do not understand disabilities in general and communication disorders in particular. This was clearly a source of hardship and frustration for many parents. R1 says "people in my family, out in public do not have enough patience with (my son). The community needs more knowledge about people with special needs. Many people don't know how to handle them." R1 goes on to add that many people "think he just has bad behavior, but don't really know what's going on with him." L says that her family members rarely visit the house because her son's disability makes them uncomfortable. R2 says that even though his son has a pragmatic language disorder, "people often mistake my child for someone with a psychiatric disorder or mental retardation."

Discussion

In many countries throughout the developing world, children lack access to specialized services such as speech-language pathology. In Peru, schools, teachers,
and parents strive to meet the needs of children with communication disorders, but are confronted with a difficult reality. Educational resources are limited, and teachers are not adequately prepared to meet the unique needs of these students. Bearing in mind that this reality is unlikely to change in the near future, this study set out to gather information related to two questions:

- What do parents and teachers know about communication disorders?
- How sufficient are current educational resources in attending to students with communication disorders?

To investigate these questions, surveys and interviews were conducted with Peruvian parents and teachers. In total, 38 participants (28 teachers and 10 parents) were drawn from a convenience sample. All teachers completed Likert-scale surveys and seven participated in interviews. All parents participated in interviews. Thirty-four of the 38 participants completed surveys and interviews in-person in Lima, Peru.

Survey results underwent quantitative and qualitative analysis, while interviews were analyzed only qualitatively. With regards to the surveys, the high degree of variability in teacher responses reflects the inconsistencies in educational training, and demonstrates the need for further study. In both the surveys and interviews, however, there was agreement that teachers want to learn more about speech-language pathology. It also became apparent that, despite restricted resources, teachers and parents have developed effective ways of attending to children with communication disorders. Several parents expressed concern about their children’s futures, in large part because people with disabilities are still a misunderstood and marginalized group in Peruvian society. There was near uniform agreement that educational materials are
lacking, and all participants expressed a desire for more training. In short, Peruvian parents and teachers are doing an admirable job of attending to children with communication disorders, but, due to infrastructural deficits, there is still significant room for improvement.

In summary, this study confirmed that Peruvian teachers and parents are knowledgeable about communication disorders. They are using reliable and innovative intervention methods, and are committed to the development of their children’s communication. Still, the data demonstrates inconsistencies in teacher knowledge, in particular. This was reflected not as much in the comments shared as in the things that were not mentioned. For example, no teacher discussed assessment methods. Neither formal nor informal diagnostic practices were talked about. And, aside from phonological disorders, there was very limited conversation about specific communication disorders. Mention of progress notes and data collection were also absent from all interview and survey data. Similarly, the parent participants are clearly aware of their children’s needs, and work to support these needs. As with the teacher data, however, the absence of certain comments suggests some deficits in knowledge. Several of the parents have children with significant expressive language deficits, yet, there was very little discussion of alternative and augmentative communication. In addition, there were very few comments about parent trainings at school. The training that was discussed was very limited (once a month), and communication-specific training was never mentioned. And, while not directly related to knowledge about communication disorders, there was no discussion of parent support groups.
The comments, both present and absent in the data, reflect underlying deficits in educator preparation on a national level. The study data, combined with the lack of available research, suggests that in developing countries such as Peru speech language pathology services have not yet been cultivated to appropriate levels. Moreover, teachers are not being prepared to compensate for this lack of services. Again, it should be noted that, on most accounts, both teachers and parents are doing an impressive job of attending to students with communication disorders, and have a noteworthy knowledge base. Still, without further orientation, service delivery capabilities will be limited. Thankfully, the study demonstrated that, almost without exception, parents and teachers want to learn more about communication disorders.

Regarding the second research question, the study data suggests that current educational resources are insufficient in attending to students with communication disorders in Peru. Clearly, teachers are quite creative, and are doing a serviceable job with the available materials. Nevertheless, both the survey and interview data demonstrates a need for additional resources, particularly specialized materials for speech language pathology services. It is worth noting that the special education teachers felt more comfortable with both the quantity and quality of resources available, but several still expressed a need for more, and better, resources. Again, it appears that speech language pathology-specific assessment and intervention materials would be the most beneficial resources for both special and mainstream education teachers.

Given the results of the present study, what are the future implications? First and foremost, there is a need for both parent and teacher training related to communication disorders. And, given the enthusiasm expressed by the majority of participants, it
appears that there is a viable opportunity to present such training. In terms of the presentation format, both special and mainstream educators agreed that an in-person, group training would be most effective. A number of participants communicated interest in developing curriculum for such a training, so a potential next step would be to solicit additional collaborators, and potentially funding, in the developed world (most likely in the United States). To create the most sustainable, meaningful impact, it also seems that such training could also include guidelines for developing assessment and intervention materials. Acquisition and distribution of such materials would be ideal, but, again, given the current socioeconomic climate in Peru, it seems that the greatest impact could be attained by helping teachers develop such materials. Finally, the need for additional speech language pathology research in Peru and throughout the developing world is clear. Collaboration between partners in the developed and developing world also presents a wonderful opportunity for professional development, and should be encouraged as a means of promoting this research.
Bibliography


Engle, P., Black, M., Behrman, J., Cabral de Mello, M., Gertler, P., Kapiriri, L., Martorell, R., & Young, M. (2007). Strategies to avoid the loss of developmental potential in
more than 200 million children in the developing world. The Lancet, 369 (9557), 229-242.


Appendix A: Teacher survey

TEACHER SURVEY

School Name:
Grade Taught:
Gender:
Age:

Dear Teacher:

In this survey, you will find a series of questions related to your work with children with communication disorders. There are two purposes of this survey: to gain a better understanding of your experiences working with children with communication disorders and to help assess what teachers need to know to more effectively work with these children. For these reasons, the information you provide is incredibly important and valuable; and your participation is greatly appreciated. As the survey is confidential, we thank you for being as honest and sincere as possible.

INSTRUCTIONS

The survey consists of 26 questions. For most questions, you will choose from a variety of closed-set answers; and for a few other questions, there is an open-ended format and you can answer however you please. Below are two examples of the types of questions you will find on the survey.

Example 1

<table>
<thead>
<tr>
<th>In this type of question, you will circle one letter answer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. I am knowledgeable about communication disorders</td>
</tr>
<tr>
<td>a. completely agree</td>
</tr>
<tr>
<td>b. somewhat agree</td>
</tr>
<tr>
<td>c. unsure</td>
</tr>
<tr>
<td>d. somewhat disagree</td>
</tr>
<tr>
<td>e. completely disagree</td>
</tr>
</tbody>
</table>

Example 2

<table>
<thead>
<tr>
<th>In this type of question, you will answer the question in the manner you please</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. In your work with children with communication disorders, what would you like to learn?</td>
</tr>
<tr>
<td>I would like to learn more about how to help children who stutter. I have a child in my class who stutters, and I don’t know how to help him. I want to know what I can do to help improve his experience in my classroom.</td>
</tr>
</tbody>
</table>

PART I: GENERAL TEACHING INFORMATION
1. What is your highest level of education?
   a. Completed some college
   b. Bachelor’s degree
   c. Master’s degree
   d. Doctoral degree

2. How many years of teaching experience do you have?
   a. This is my first year
   b. 1 to 3 years
   c. 4 to 8 years
   d. 9 to 15 years
   e. 16 or more years

3. How many hours per week are you teaching class?
   a. less than 5
   b. 5-10
   c. 10-15
   d. 15-20
   e. more than 25

4. How many hours per week do you spend preparing for class (grading, creating lesson plans, etc)?
   a. less than 20
   b. 20-25
   c. 25-30
   d. 30-35
   e. more than 35

5. I have enough time to prepare for class
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

6. How many students are in your class?
   a. less than 15
   b. 15-20
   c. 20-25
   d. 25-30
   e. more than 30

7. There are not too many students in my class
   a. completely agree
   b. somewhat agree
PART II: COMMUNICATION DISORDERS

8. In your classroom, how many students have communication disorders? (problems reading, writing, speaking, and/or listening; including but not limited to dyslexia, stuttering, difficulties with pronunciation, reading/listening comprehension, and difficulties maintaining conversations)
   a. none
   b. 1-3
   c. 3-5
   d. 5-8
   e. more than 8

9. I am knowledgeable about communication disorders
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

10. I feel prepared to deal with my students with communication disorders
    a. completely agree
    b. somewhat agree
    c. unsure
    d. somewhat disagree
    e. completely disagree

11. When I have a question or concern about these students, my co-workers and administrators can help me.
    a. completely agree
    b. somewhat agree
    c. unsure
    d. somewhat disagree
    e. completely disagree

12. I feel most knowledgeable about
    a. communication disorders related to reading
    b. communication disorders related to writing
    c. communication disorders related to speaking
    d. communication disorders related to listening

13. I feel least knowledgeable about
    a. communication disorders related to reading
b. communication disorders related to writing
  c. communication disorders related to speaking
  d. communication disorders related to listening

14. In dealing with communication disorders, the **quality** of school resources available to me and other teachers is completely adequate.
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

15. In dealing with communication disorders, the **quantity** of school resources available for me and other teachers is completely adequate.
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

16. I understand how speech-language pathologists can help teachers serve children with communication disorders.
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

17. I understand how audiologists can help teachers serve children with communication disorders.
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

18. I understand and can explain the connection between language development and literacy.
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

19. I frequently communicate with the parents of my students with communication disorders
20. I am able to work with parents to create successful strategies for dealing with their child’s communication disorders.
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

PART III: NEEDS ASSESSMENT AND PROFESSIONAL DEVELOPMENT

21. I would like to learn more about communication disorders
   a. completely agree
   b. somewhat agree
   c. unsure
   d. somewhat disagree
   e. completely disagree

22. The most helpful format for me to learn more about communication disorders would be
   a. in-person training
   b. a video presentation
   c. teaching materials
   d. other _________

23. In your work with children with communication disorders, what knowledge or training would be most helpful for you?

24. In your current situation, what is working best for you in serving these children?

25. What is lacking?

26. Please add any additional comments, questions, or concerns.

THANK YOU!!!
Appendix B: Pre-selected teacher interview questions

Oral instructions to interviewee: In this interview, you will be asked a number of questions about your students; and specifically, those students with communication disorders. The interview should take approximately one hour, but you will be given as much time as you need to answer. If you do not understand a question, or do not feel comfortable answering, please say so. The interview can be stopped at any time that you wish.

1. What are your methods for working with students who have communication disorders?

2. What are your questions/concerns in working with these students?

3. What additional resources would be most useful in working with these students?

4. If you were given the opportunity to attend a workshop on communication disorders, what would you want to learn?

5. How well do you think your school serves children with special needs?

6. How could the Peruvian education system be improved to better serve students with special needs (such as a communication disorder)?
Appendix C: Pre-selected parent interview questions

Oral instructions to interviewee: In this interview, you will be asked a number of questions about your children; and, specifically, your child with a communication disorder. The interview should take approximately one hour, but you will be given as much time as you need to answer. If you do not understand a question, or do not feel comfortable answering, please say so. The interview can be stopped at any time that you wish.

1. When did you know your child had a communication disorder?

2. What are your methods for helping this child?

3. What are your questions/concerns about this child?

4. What additional resources would be most useful in helping your child?

5. If you were given the opportunity to attend a workshop on communication disorders, what would you want to learn?

6. How well do you think your school serves children with special needs?

7. How could the Peruvian education system be improved to better serve students with special needs (such as a communication disorder)?
**Appendix D:** Teacher survey results summary (participants not meeting inclusion criteria)- quantitative (CD is an abbreviation for communication disorders)  n=6

<table>
<thead>
<tr>
<th>Question</th>
<th>Modal response</th>
<th>SD (range of all responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3: Hours teaching class/week</td>
<td>5-10 (50%)</td>
<td>1.38 (5-10 to more than 25)</td>
</tr>
<tr>
<td>4: Hours preparing lessons /week</td>
<td>less than 20 (67%)</td>
<td>.84 (less than 20 to 25-30)</td>
</tr>
<tr>
<td>6: Number of students</td>
<td>25-30 (33%)</td>
<td>1.51 (less than 15 to more than 30)</td>
</tr>
<tr>
<td>8: Number of students with CD</td>
<td>3-5 (50%)</td>
<td>.82 (3-5 to more than 8)</td>
</tr>
<tr>
<td>5: I have enough time to prepare for my classes</td>
<td>somewhat agree (50%)</td>
<td>1.38 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>7: There are not too many children in my class</td>
<td>somewhat agree (50%)</td>
<td>1.51 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>9: I have knowledge of CD</td>
<td>somewhat agree (33%)</td>
<td>1.37 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>10: I feel prepared to attend to children w/ CD</td>
<td>somewhat agree (33%)</td>
<td>1.67 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>11: My coworkers/administrators help me work w/ children w/ CD</td>
<td>completely agree (50%)</td>
<td>1.75 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>14: The quality of resources in my school are adequate (for work w/ children w/ CD)</td>
<td>somewhat agree (50%)</td>
<td>1.51 (somewhat agree to completely disagree)</td>
</tr>
<tr>
<td>15: The quantity of resources in my school are adequate (for work w/ children w/CD)</td>
<td>unsure (50%)</td>
<td>.98 (unsure to completely disagree)</td>
</tr>
<tr>
<td>16: I understand what speech langue pathologists do</td>
<td>unsure (50%)</td>
<td>.75 (somewhat agree to somewhat disagree)</td>
</tr>
<tr>
<td>Question</td>
<td>Modal Response</td>
<td>SD</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>17: I understand what audiologists do</td>
<td>unsure (50%)</td>
<td>.98 (unsure to completely disagree)</td>
</tr>
<tr>
<td>18: I understand the link between language and literacy</td>
<td>completely agree (67%)</td>
<td>1.21 (completely agree to somewhat disagree)</td>
</tr>
<tr>
<td>19: I communicate with the parents of children w/ CD</td>
<td>somewhat disagree (50%)</td>
<td>1.51 (completely agree to somewhat disagree)</td>
</tr>
<tr>
<td>20: I collaborate w/ these parents to attend to children w/ CD</td>
<td>completely agree (50%)</td>
<td>1.76 (completely agree to completely disagree)</td>
</tr>
<tr>
<td>21: I would like to learn more about CD</td>
<td>completely agree (83%)</td>
<td>.41 (completely agree to somewhat agree)</td>
</tr>
<tr>
<td>12: I have most knowledge of (type of CD)</td>
<td>reading disorders (33%)</td>
<td>1.22</td>
</tr>
<tr>
<td>13: I have least knowledge of (type of CD)</td>
<td>speech disorders (50%)</td>
<td>.71</td>
</tr>
<tr>
<td>22: The best way to learn would be</td>
<td>teacher trainings (67%)</td>
<td>.52</td>
</tr>
</tbody>
</table>
Appendix E: Interview transcripts and written notes
*so as to respect the privacy of all participants, initials are used for all child, teacher, and parent names; and initials are for schools.

I) Transcripts of video-recorded interviews

#1
Teacher- J1 (primary school)
School- M

As I work with children from 1st and 2nd grade, I work to develop their phonological awareness. To work on these concepts, I have a series of very large laminated pages with images on them. The images are easily recognizable for the children: a cat, a dog, a banana...The pages are organized in alphabetical order. When we are going to use these figures, I tell the children that we are going to play a game. I will say, for example, "Children, find the butterfly." They then find the image of the butterfly somewhere on the floor. It has the image, but also the whole word "butterfly" separated by syllable. Each syllable has a different color. Once they find the image, I ask them how many sounds there are in "butterfly." We count the sounds out by jumping. I then expand on the activity by asking them what sound "butterfly" begins with. These children are very active, so the jumping helps. This activity transfers into other activities we do with writing. They remember it. They also teach and support each other.

The main problem is reading comprehension, but I believe that all of this comes from a problem with articulation. For example, last year, I had 10 children with articulation problems. Those children would write the words as they pronounced them. This also created problems with reading. They could not understand what they were reading. Tongue twister activities help them with phonological awareness also.

We don't have many educational materials. Manipulativos are really important for these kids (the younger children), but we do not have them. Having materials for teachers is important also. Like teaching theories. We also have very few materials related to reading comprehension. For me, it is difficult at times to create materials related to inferential questions (related to reading)

I would like to keep in touch with you and your colleagues. Our school is in a very poor area of the country, and we (especially the children) benefit from your support.

#2
Parent- R1
Child- V, 6 years old
Diagnosis- autism with maladaptive behaviors

I really want my son to speak. That would be my number one goal. He understands....he just can't talk. When he wants something, he takes me by the hand and walks me to what he is talking about. He doesn't signal, speak, or gesture. He has moments when his behavior becomes aggressive. When this happens, the teachers have taught me to be patient and wait. Sometimes, though, when I get upset, he will notice, and come give me a kiss as a way of saying "don't be mad."
People in my family, out in public, do not have enough patience with V. They think he just has bad behavior but don’t really know what is going on with him. The community needs more knowledge about children with special needs. Many people don’t know how to handle them.

Physically he appears normal, it is only his behavior that is problematic. Before he did repetitive behaviors (clapping), now not as much. But he still moves his hands a lot. When he was young, he produced sounds, now he does not speak. He does not respond to his name. I thought he was deaf, but that wasn’t it because he responds to sound. His hearing has been tested and there are no problems.

He becomes aggressive when we don’t give him something. If it is something that I cannot give him, he throws himself on the ground. But, as they have instructed me here in the school, I have to stay calm in these situations. What I have to do in these situations is just wait...if it is in the house, in the street, anywhere. When he is done, then I lift him up off the ground. These things happen in moments... sometimes he is fine and calm...at times for weeks.

When the struggles happen, I wait a while because if I try to pick him up in the moment, he does it even more. I wait until he is a little more calm, and I tell him to stay calm, I explain that right now I can’t give him what he wants. Many times in these moments, we walk a little further and he throws himself down again. This might take hours, but I still wait.

He does not have brothers/sisters, and he doesn’t play with other kids. He is not interested in the games other children play...running around...he will play in a jungle gym, but only by himself. I wonder if one day he will speak...some kids with autism speak, others do not. He can say "Mom," "Dad," "ya" (enough)...sometimes he will say two words together, but never say those two words again.

I think what would help me a lot would be that my family helps me to do the same things that I do with him. There is no consistency of discipline/expectations in the family. People in my family, out in public do not have enough patience with him. They think he just has bad behavior, but don’t really know what is going on with him.

The parents need support/training...the community needs more knowledge, too. Many people don’t know how to handle these children.

#3
Parent- L
Child- J, 14 years old
Diagnosis- moderate cognitive impairment

I have taken him for speech therapy, but without results. I wonder if he will be able to talk, there are moments when he produces sounds, he says "ma." He does not use many gestures/signs. If there is something he wants, he grabs it, or looks at it. He makes small advancements, small regressions, but more or less the same. When I sit down to talk with him, he turns around (doesn’t want to). Even the speech therapist said he doesn’t want to talk. They said he might do better with behavior therapy.

I brought him here to this center because when he is by himself at the house, he always wants to go outside, to get away. Sometimes he cries, sometimes he bites his hand...he doesn’t want to be stuck in the house. Here, since they have him doing a lot of different activities, he is a little more controlled. He really likes coming here.
Before he went to a state-run special needs school, and it seemed like the teacher abandoned him. Sometimes she would send him to the bathroom, and one time I arrived, looking for him. They said he was in the bathroom. He was stuck inside the stall, he did not know how to reopen the door. His hands, his whole shirt were covered in water. The amount of water that was on his clothes made me think he must have been inside there for 2 hours. And no one went to check on him. I complained to the teacher, but she never gave me a good answer.

I took him to another public school...it had a lot of space since the government gives them land. He would go out in the back behind the classrooms there. They also did not check on him. It seems like he is doing better here, his behavior is better. The government here might financially support a family with a child with special needs, but you would have to write a letter to them, asking for help.

He does not have physical problems, he can run, walk, carry things. He received physical therapy as a child, 3 months of physical therapy, 3 months of speech therapy. But then I started having problems, I was left to take care of the kids alone, and so many things happened. I did not take him back to speech therapy. It's possible that I just was careless, and that is why my son is like this. He was very sick as a child. It was very difficult with him as a child...he suffered so many things, bronchitis, stomach problems. After a while I just didn't give him medicine because it seemed like it was intoxicating his body...he got sick so much that it also made it hard to get him to therapy appointments. The good thing was that he always ate. The doctor told me that the patient who eats never dies...I think that is how he survived. Now he can at least go to the bathroom and eat by himself. So he has some independence.

I don't know how much life my child will get to live. The truth is that the future of my son scares me. I hope he finds someone that can help him, can help take care of him. The whole family worries about him, but what can we do? It's very sad to have a child with special needs. This is what all of us mothers here suffer. I also hope he learns to speak sometime in the future. It's hard because I don't see much possibility of him working further along. I think my faith in God is the reason I keep going forward with my son.

What gives me hope is that I can maintain a close relationship with my son. My neighbors, my family members really don't visit much anymore because it worries them to be around my son. I don't have that much faith that my son will do something professionally, but I bring him here because it is my duty as a mother, to take care of my children.

In terms of his communication, I would like him to learn even basic methods (signs/gestures). I actually took him to a school for deaf children, but he was not accepted since he does not have a hearing loss.

If he is buying something, I would like him to use communication to do this. He knows money, so even if he could just show the money before grabbing what he wants. He can say just a few things- ma, alli (there), but mostly he is quiet. Or, if he wants something he hits the table, or bites his hand.

I would really appreciate having a speech therapist here, if they charged us that would be fine, they are doing their jobs. It seems like most of the parents want this, too I have looked for other places for him to receive this support, but it is difficult. For example, in the hospital it is really difficult to get the appointment, to get to the hospital...
My child understands things very clearly, if I tell him I'm going to the market, for example, if he wants to go, he just grabs the bag and walks to the door with me. If he doesn't want to go, he makes a motion to me with his arm to let me know. I want as much help as possible. I want the professors to help, I want to learn more.

Parent- M1  
Child- C, 31 years old  
Diagnosis- severe cognitive impairment

I adopted her when she was abandoned in a hospital. I worked in that hospital. I started in this hospital when I was 17, and kept working there, in fact, studied to become a nurse while I was working there. When she was born, she did not breathe for the first five minutes, that was the reason for her problem- lack of oxygen in the brain. I didn't know her condition when I adopted her.

The problem was that she had a difficult condition, and I was a single mother. This was even more difficult because the government does not really get involved with these services. Even when I left the hospital, one of the doctors told me I could take her, that she was totally healthy. When I asked the neurologist about the child, he said she would not walk, would not talk, that she would be completely disabled all her life. She asked the doctor what to do, and he said to leave her.

At that point, I began applying the therapy ideas I learned. They told me that she wouldn't walk, but I said to myself that she would. I kept a positive outlook. I told myself that she would walk, she would talk, and be physically healthy. When she was very young, she had hypertension throughout her body. I urged the Catholic nuns at the hospital to let her stay (sleep) there, they didn't want to but I convinced them. I really didn't know much about therapy. I just thought back on what I had learned and started doing physical and speech therapy with her.

She did not speak at all, she was tube-fed. I just continued talking to her, every day...at around 2 years, she opened her eyes one day and said "ma." At that point, the doctors told me not to touch her at all because she was fragile. I didn't pay attention to them, though. I put cotton balls in her hands, so she began to open her fist little by little. After a while she started talking, too. To help her walk, I put ropes on her arms and legs, and pulled the ropes to help her understand how to coordinate her body for walking. I did all of this in the mornings before the doctors and nuns arrived. No one thought she could walk. After a while, she finally left the hospital. She no longer suffered from so many illnesses. I went to the University of San Marcos, and asked them to accept me as a non-enrolled student. I wanted to learn more about how to take care of my child, and they are well known for their special education program.

From what I learned at the university, I applied it with my daughter. She began to speak at 1 year, 2 months; she walked at two years old. When she was four years old, I brought her to the doctor that told me she would never walk or talk. I told him that she did both, and that he should not say such things if he is unsure. I took her to school, but, unfortunately, the other children scared her, and she regressed a lot. I think the problem was that the children were not separated according to development but rather age. She was with children that were not as advanced as her, and she regressed. I wanted her to start talking again, so I took her to all the special education schools in Lima.
I asked a speech language pathologist what I should do to get her talking again. The person told me to tell her to open her mouth. If she doesn't want to open her mouth, then put something bitter or sweet on her lip, she will stick her tongue out to taste it, and then you need to grab it. Grab it with a towel and then carefully begin to do exercises with her. That's what I did. I would grab her tongue, and then pull it out many times to give her exercise.

The therapist also told me to put on a rubber glove, and put my hand in her mouth to massage the sides of her mouth. The next exercise I was taught was to close her nose, and cover her mouth with my hand. Then, I would press on her diaphragm so that she exhaled very strongly. This helped her develop her vocal folds, and oral motor muscles. And it worked, there were some sounds she still could not produce, but she spoke. I continued working on all the walking coordination with her, too. She learned to walk and even dance. She can distinguish many different types of music. When she listens to classical music, many times she cries. I think it is because she remembers my mother (her grandmother) who died when she was young (and listened to classical music).

I went to an international lecture one time, and the man was talking about how children perceive everything. He was saying that the more you expose the child to, the more they will learn and grow. So I applied that rule with my child. I took her all around the city, to different parks, the beach, concerts. She learned a lot from this. She has mental retardation...what happened was that the original mother wanted to abort her. She tried to do so. I still do all the therapies with her. I have tried to find other speech therapists, but they don't seem well prepared to me. They don't know how to work with her.

We need to work more on pragmatics of language with our children. We worked on paying for things in stores. We did this with visual aids, too. Physical therapy is important, it is necessary for speech, too.

I moved to the United States for almost two years, I lived with a family there, and there was a child that had autism. I told them that he needed physical therapy, speech therapy. But he was hyperactive. We had to sit him down, and have him pay attention more. His mouth, his vocal mechanism was asleep. He needed massages to "wake" it up. He also needed massages in his brain to help.

I met two more children. One of them was very large, and aggressive. I explained to the mother that my daughter was like that, too. I started working with him. I controlled him physically, holding his head, moving his mouth so he would not bite me. Once he calmed down, he actually started to listen to me. He repeated the sounds I made. Little by little he made improvements. It is really important to dedicate oneself to the speech and language therapy.

When I left for the United States, I left my daughter with a therapist. I sent money to the therapist to take care of her. She didn't, she mistreated her, physically abusing her. She was in worse shape when I returned. This school should request speech therapy from the government. They could get it.

There is not an adequate housing situation for adults with developmental disabilities. There are some but they mistreat the residents. My hope is to set up a housing situation for these adults. With the help of other parents, I think we could do it.
Each week, for example, a different parent could take care of the children. We just need to find real estate to develop the house...we could have therapists there, too.

When a student graduates with a degree in psychology or speech therapy, the government sends them to various schools. The school pays part of the salary, the government pays the other part.

I think physical and speech therapy must be done together. I think that parent workshops are really important. The parents need lots of orientation. There should be psychologists here, but there are not.

I recently took her to the hospital because she was having psychological problems. I did not like how they were treating her. The medicines were too strong. I took her home, and had her just drink water for a few days to detoxify her body. The speech therapy I continue to do regularly. I use a toothbrush. I tell her I will give her Coca Cola, then she opens her mouth, and I begin brushing it. I use the back side of the brush to massage the sides of her mouth. This helps her recuperate her language. She is recuperating all her language. She comes every day to the center.

Now that she is an adult, and I am older, my goal is to find a living situation for her.

#5
Parent- H1
Child- H, 8 years old
Diagnosis- receptive language disorder, phonological disorder

He has a hard time with his brother. He is jealous. He has problems comprehending. He is better in math. He is good at making corrections in his work. His older brother helps him a lot, too. I usually talk to him to try to help. He doesn't like that we look at his work. We put a computer in the house and this helps him concentrate, too. We don't have enough money. We can't buy them everything they need. I have lots of expenses. They have made appointments for me to visit a speech therapist in a specialty center, but I can't get there. I can't make it. There is special attention here for students like my son, and they are helping. He still has problems pronouncing the /r/. He can be immature, too. He gets jealous of his baby brother, even though he receives everything that the baby gets. I never physically punish him. He isn't really concerned with his studies. It doesn't bother him.

II) Transcripts of audio-recorded interviews
#6
Parent- J2
Child- R, 7 years old
Diagnosis- autism

I realized something was wrong when he was three years old. Until 2.5 years old, he spoke and had language. I had to work so I left my son with another person. The doctor said that he lacked proper attention (therapy). No one helped with this. I worked from 8am to 10pm, and I never really got to see how my child was developing. He received therapy but it didn't seem to help (after age 3). Speech therapy did not work well because he is hyperactive. The therapist didn't know how to reach him since he is hyperactive. We went to another school for speech therapy. He received therapy one time per week.
My child has made significant improvements here, especially in behavior. He is less hyperactive, and calmer. He is now learning to dress himself, eat properly, and take care of personal hygiene. His main challenge right now is in communication. He does not have language. He does use some gesturing, but not very much. When he is hungry he goes right to the kitchen and starts eating. He can go by himself to bathroom.

He has adequate receptive language. He can follow indications. I want my son to be independent. I don't want him to have to depend on other people. Here at school they are teaching him to be independent- eating independently, cleaning himself... I want him to continue learning to walk by himself without holding hands. He has made a lot of improvements here. When he first arrived he didn't want to sit down, he would walk around, cry when he had to sit.

Thanks to the teacher, his behavior has improved a lot. It has helped me a lot as a mother to be working here as a professor, too. That helps me know how to interact with him (handling behaviors, etc.)

We have parenting classes once a month here, and that helps us know how to deal with our children better (two hours).

Having a child with a disability makes you see the world in another way...you have less difficulty approaching strangers. I never knew what autism was, but since I have had my son, I have met many people, good people. The mothers here do a good job. We learn from each other, and our experiences. I am happy because this has helped me see life in another way. I never regret having my child with autism. I have taken the decision with calm. He has some independence, and for that I am thankful.

#7
Teacher- J3 (primary school)
School- C

The most difficult part is when a new child arrives. We don't know how he will react. There are certain things that they don't like...they might cry. Little by little we learn about the child and his personality. When a new child comes, there is an initial evaluation, and we get a little information about each child. The parents tell us about the child- what they eat...many children are selective. Here we try to have them eat everything, little by little...trying it. My child didn't like a lot of different food, either. But the teachers have the child try each item, and sometimes they start liking it. They learn to eat more variety of foods. The most difficult thing for me is that the school is so far away from my home.

The school is rented, so it would be nice to have our own building. Some parents have more economic resources, so it would be nice if they helped us build our own center

Sometimes there are children who do not respond, I don't know how to get to them. Some children speak, some children do not want to speak. Some children learn to speak, others do not. Many parents have come from other areas, from far away, this is a special place for the attention that each teacher gives. Many schools do not have a good form of educating children.
Parent- R2
Child- M, 19 years old
Diagnosis- pragmatic language disorder

I didn't realize my child had a problem until he was 6 years old, 7 years old. He began to speak, walk at appropriate stages of development. Little by little he did not communicate well, he did not socialize with other children. Sometimes he was aggressive, physical (hitting) with other children, and for this reason he did not have many friends. His problem is almost exclusively in socialization. He has syntax, vocabulary...

Maybe he has autism, but there are doubts that his condition is strictly autism. The good thing is that here at school, he is forced to socialize and interact, because outside he has few friends. I want him to be able to go do things by himself: go to the store, go out in the community...as a young child he had one good friendship, but since then he has not. I worry that he might have an accident when he is out by himself. He gets distracted, and this is concerning. We want him to develop more language, more ways of communicating so he can reduce his deficits. We know some things to do with him in the house, but could always learn more. The school is helping a lot, but we need more help.

He knows how to read, write, but sometimes he is lazy doing homework. He does not like to write that much, but he reads when it is interesting to him...he really likes geography. In reality, he understands everything, he just has a bit of mental retardation. This is seen in the way he asks, he asks questions over and over like a child. Sometimes he asks questions about words that are evident. He likes to greet and meet strangers. He always asks them their name and last name. He asks very direct questions even to people that he doesn't know.

From a very young age, his teachers taught him to enjoy reading...he learned symbols, numbers...I think he has the capacity to learn another language. He does long jump and swimming. He doesn't seem as interested in friends. He likes to walk, eat, enjoy the landscape. He has two sisters, his mother, and me.

People often mistake my child for someone with a psychiatric disorder, mental retardation. My family has a history of agriculture, farming, and I would like for him to work on a farm, work with birds and things like this. In the next couple years, he is now 19, I would like to see this happen. I would like to see if he can do this with birds, tending a garden. This could be a job for him, teach him responsibility.

He wants to go to the university, I will help him continue studying, maybe another language, also a trade. Even though he is more advanced than the other children, he is still learning. They are teaching him at school to be more independent. I want him to be able to do things by himself- go out with friends, go to the store. He wants to be more independent.

At one time, he left on his own and he got lost, we were all scared, he eventually came back, but this is an experience that we prefer he not have yet.

He does take drugs to control his hyperactivity. Being in sports helps control his hyperactivity. My only concern is having him out on his own, going by himself, coming by himself. I worry that he could get hit by a car, even though it seems like he is aware of these things somehow.
He gets distracted, and this is concerning. I would like him to learn more computation here, do more sports, and learn a language.

#9

Teacher- N (primary school)
School- C

The first thing I do with my children is teach them to make greetings. A lot of the children are nonverbal. If they do not have verbal communication, I encourage them to greet with gestures. They enter, put away their things, and then I begin my class at 8:30 am. The first thing I do is attendance. This is a way of having them learn their names. They learn to respond - saying "here," "yes," or nodding. Every week we sing a special song, then I give the schedule for each day. We also talk about what is coming later in the week.

As I said, some students respond to questions verbally. I find that children respond to each others' impulses/actions in a good way. I try to incentivize with activities for each day. Hygiene is a large part of what we do, especially at the end of each day. We do this at the end because it is real- they should go home clean after they get dirty.

I try to make everything realistic. Because the schedule is important, we do schedules writing their names. I use images to reinforce verbal indications. For example, if we are going to the park, I would use a picture of the park. Images are reinforced with about half the students, some know the words without images.

I feel frustrated when the child doesn't respond, for example when we are using picture exchange communication systems (PECS).

We work with parents but there are still problems. We have to keep trying since PECS is a new system. Some parents say they don't have time to practice with their children. And grandparents don't want to help with this because they don't consider it their job. I feel frustrated when the parents don't help

I have had the opportunity to work in other special needs schools, they don't have good practices. If a child doesn't understand a letter, they keep trying, instead of trying different techniques. Teachers in these types of schools might say it is a child's fault, or the parent's fault. In reality it is the teacher's fault. If the method doesn't work, the teacher has to try something else.

One of my most advanced children arrived here without knowing numbers or letters. After three months, he can read, write, and do math. They were trying very basic, boring techniques for him. Here, we tried other methods, working with partners and working in real life examples. Children respond better in this way. These are things they can practice out in the street- how much does the drink cost, for example. We also work with real coins, not just fake paper money. These things bore the children.

I have to always change my approach to make the children more interested and engaged. Other centers don't have our type of functional teaching. We practice making a fruit salad with real fruit, not just playing with plastic fruit.
Many women are single mothers. They are doubly impressive because they are fathers and mothers. This is a high percentage of the families in our center. The woman is very valiant to take on this challenge. It is even more difficult here in Peru because of the lack of resources. We call the children at our special education school people with different abilities. Children in my class are very basic. They have problems with behavior. My approach is the golden rule. I approach the children as friends. The traditional role of teacher is very formal, and it is harder to reach the children. From the friendship approach, there is more attachment, and a better foundation. I always look for the child's strengths, reinforce the good things, and reduce the bad.

Many children in our class have autism, others have Down syndrome. Two are verbal children who have problems with behavior. Like I said, I always focus on the positive.

The national system does not help teachers work with children with different abilities. For example, one child in my class says he is bad, so I try to reinforce that he is good, and erase all the negative conditioning he has received. I try giving him specific examples, telling him he is a good friend, congratulating him for everything he does right. I don't use negative reinforcement. Instead, I say things like "you are a good friend," and "I need your help."

Some of these children are very active, they have too much energy and we need to learn to channel it. If a child needs to do more activity, I might have him help with materials, or do more than one repetition of a physical activity. I never use corporal punishment. No one in the school is using physical punishment. This is the whole idea of the friend approach- we give high fives, physical affection, hugs...

If a child is making a mess, an inadequate approach would be to punish, and point out everything he is doing wrong. It would be better to point out why that doesn't work- for example, saying "look, now there is such a mess right where we were going to eat"...this can be over dramatized, too, for effect. I would then ask them to help me to clean, help me to fix this problem. I help them learn why certain behaviors don't work- I might say "we can't hurt plants or animals, because that would hurt us, too!"

Since our children are different, we try to work with them in real-life environments. We go out into the community, we give them the opportunity to work on tasks in real life examples...We prepare them to live without their parents, we always ask what will happen when mom/dad is gone?

We are working towards an inclusive society in Peru, but our school has always been an inclusive society. Here we do not play around with money, shopping, cleaning, or other things. We do it for real. Some parents might complain that we don't teach them classes- math or language. We do teach them, but in a different, real-life way.

For example, we might ask "how much money do I need for this food?" "How do I buy it?" "What does the fruit feel like, taste like?" We try to let the children fail so they can learn.

Here, one thing we do well is staffing, we each help each other, give insight into each child. We try to innovate, and our leadership motivates us to work hard. We lack
infrastructure, we do not have therapy for the children. We don’t have a gym, music, or a pool...we need our own center.

Another thing I would love is to have them get haircuts. People who are learning to cut hair could come in and work with them...this helps those who are cutting hair so they can get used to working with children with disabilities...this would also be good for doctors and dentists, too. This would help reduce fear and ignorance for the children and for these professionals. It would help with acceptance.

In the same way, some children can’t handle the crying of a child...little by little the child learned to accept it...we exposed him to this little by little and he got used to it

Our children have the right to more resources.

III) Written notes of interviews in which participant did not consent to audio or video recording

#11
Teacher- D (primary school teacher)
School- F
- Receptive language skills are good with my kids
- The most common problem is in articulation
- I have one deaf child in my class. He is a nonverbal communicator
- Children at our school have access to speech-language pathology services through a private clinic partnership
- I would like to learn more about methods for treating problems with articulation
- Children should be supported through age-appropriate activities
- It is important to reduce negative behaviors, and do real-life activities
- My kids need more help with social communication
- Our school is lacking infrastructure

#12
Parent- A1
Child- D, 7 years old
Diagnosis- Phonological disorder
- My child has a problem with pronunciation
- She misses syllables sometimes
- She is very nervous
- She gets help after school
- She has problems paying attention, and having patience
- I think it would be helpful to have a parent orientation
- She was okay until she turned six
- Sometimes she has memory problems, too
- It seems like reading is so important, but it is not something she cares about

#13
Parent- M3
Child- S, 6 years old
Diagnosis- unknown
- My child had speech-language pathology at a private clinic until 2.5 years of age
- His receptive language is okay
- He also needs to develop more independence
- Working with the teachers here at the school helps a lot
- We have parent meetings here at school once a month for two hours
- The teachers have helped us realize that newer students have a harder time at school
- I wonder how to get through to my child when he is not being respectful

#14
Teacher - T (secondary school)
School - L
- I like to teach, and it was the most flexible position available
- I also like working in a collaborative environment
- I have worked here for 10 months
- When we do teacher trainings at school, it is clear that everyone is interested and wants to learn
- There is a lot of collaboration in our school
- The hardest thing for me as a teacher are the distractions in the classroom
- When I work with children with communication disorders, I just try to treat them like the other children. I give them the same assignments as their classmates
- I don't know if my methods for children with communication disorders are right. Up to this point they have worked for me
- I would like more strategies for helping in matters of comprehension
- It would be good to do more teacher trainings. There are many students with special needs, and not enough teachers that know how to take care of them
- Peru needs better professional development programs for teachers
- We also need professionals to put their training into practice

#15
Teacher - J4 (primary school)
School - S
- I am a teacher because I want to work with children who lack opportunities
- I have been teaching for 7 years
- I really enjoy working with parents and seeing them implement helpful strategies for working with their children. I love supporting children's education
- Discipline is the hardest part of being a teacher
- In working with children with communication disorders, I give them special attention when reviewing their assignments. If they are falling behind, I speak with the parents
- In my work with children with special needs, I would like to learn more ways for talking with them about health matters and personal care
- We need books and special materials for children with significant needs
- I would like to know more about how to identify children with communication impairments, and how to treat them
- I think our school does a good job of taking care of children with special needs
- I think we need more professional development and education materials to do our jobs better
- We need more specialized staff
- In Peru, there is a lack of specialized training and professional development
#16
Parent- H2
Child- J, 7 years
Diagnosis- unknown
-He has gotten a lot better. Still has problems at school sometimes, but most of it has passed
-It took him a very long time to start talking. It wasn't until he was more than 3 years old
-I still like the school, but it is not like before. The teachers don't care as much, and there is a lack of discipline.
-Making JC work with his older brother helps a lot.
-I want to learn more to keep supporting him. We don't have a lot of resources, but just learning more would help a lot.

#17
Parent- A2
Child- M, 9 years old
Diagnosis- unknown
-She still has a really hard time reading. It is better, but she still doesn't like it.
-We try to make her read more at home, but it is hard.
-The teachers seem more concerned with their own careers. It is not like before.
-I want to know more about where my daughter should be with her studies.
-She has to get better so she can go to college and have a career.
-The school doesn't have enough materials for the children