Patterns of invented spelling in Spanish

Mercedes Pérez

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PATTERNS OF INVENTED SPELLING IN SPANISH

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Bilingual/Cross-Cultural Education

by
Mercedes Pérez

September 2002
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Approved by:

Dr. Barbara Flores, First Reader

Dr. Esteban Díaz, Second Reader

7-22-02
ABSTRACT

This study proposed to examine the invented spelling patterns that Spanish speaking children create in their writing. On a monthly basis four students submitted a first draft of a journal entry or a story for a two year time period, which covered both their second and third grade years. Their writing samples were then transcribed and each word used was categorized as either a conventional or an invented spelling. The invented spellings were then classified into eight categories. As a result, it was found that student’s invented spellings were not random guesses at conventional spelling. On the contrary, student’s invented spellings reflected their knowledge of the phonetic principles that they learned in school. Therefore, it is essential that teachers not only provide students with spelling lessons based on phonetic principles, but also with various strategies involving visual memorization.
ACKNOWLEDGMENTS

I would like to take this opportunity to thank all my professors in the Bilingual Cross-Cultural program at California State University, San Bernardino for the time and dedication that they have given me. It was through their inspiration and vast knowledge that I decided to pursue my master's degree in bilingual education. I would especially like to thank Dr. Barbara Flores for her continuous support and dedication while I was writing my thesis. Dr. Jose Hernandez, Dr. Esteban Diaz, Dr. Nena Torrez and Dr. Barbara Flores, I hope that one day I will be able to inspire another student in the same manner in which you have made sure that I reached my continuous zones of proximal development.
DEDICATION

To my mother, Magdalena Pérez, for her everlasting and uncompromising support in everything that I decide to do, to my brothers Alfonso, Frank and Pedro Pérez for always challenging me to do better, and to God for always being present in my life. I love you all.
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CHAPTER ONE
INTRODUCTION

Prior to the 1980s, students' writing was usually assessed on the basis of grammar, content, organization and spelling. If the student did not demonstrate a general knowledge of these skills, their writing was considered to be remedial. In the 1980s, there was a trend to accept students' invented spellings. Invented spellings were seen as children's attempts to communicate their thoughts on paper. Often times, students used one letter or a symbol to represent words, which, of course, would have been characterized as a spelling error before the 1980s. However, with the current trend to move away from a Literature Based Curriculum to one which returns back to basics, greater emphasis is now returning to conventional spelling. As teachers move away from a Literature Based Curriculum more and more schools are pushing phonics instruction. Once again students' spelling is now being assessed on accurateness and not on close approximations.

Problem
Second grade and third grade, English Language Learners use invented spelling in their writing as well as conventional spelling. This study will explore the types
of invented spellings the Spanish speaking students produce.

Research Question

What patterns of invented spelling exist in select second and third grade students' writing in their primary language?

Background

Many people view learning as a process in which a teacher puts knowledge into a child's head. Therefore, if the child listens to the teacher and does what the teacher says, then through some amazing process the child learns what the teacher is teaching. In this ideology, a child is merely a person who passively acquires knowledge, there is no social interaction. According to Vygotsky (1978), "every function in the child's cultural development appears twice, on two levels: first on the social and later on the psychological level—first between people as in interpsychological category and then inside the child as an intrapsychological category" (p. 128). Vygotsky saw learning as a social interaction between the child and a more competent peer. Learning in this model occurs through a child's active participation in learning activities. The child is not merely listening to the teacher; he is
helping to develop his/her own learning in collaboration with the teacher. First, the child completes a task with the help of the teacher and later completes the task on his/her own.

According to Litowitz (1993), "Vygotsky called the difference between what the child can do on his/her own and that which he/she can do in collaboration with a more knowledgeable other the zone of proximal development" (p.185). The zone of proximal development is where learning takes place. Through social interaction the teacher guides the child through a task. The teacher helps the child accomplish the task now and guides the child until he can complete the task on his own in the future. For example, when a parent teaches a child to tie his shoes, the parent does not just give the child the shoe and tell him to tie it. A parent first models the process of tying the shoe by reciting out loud the process. Soon after, the child ties his/her shoe himself/herself with the assistance of the parent. The parent will continue to recite the process aloud and might help the child by making the loops, but the child is expected to tie the shoe. Eventually, the child will be able to tie the shoe on his own without the assistance of the parent.
Within the educational arena, the zone of proximal development will work in much the same way. The teacher, as the more competent peer sets up a task for the child to accomplish. The student accomplishes the task at first by working with the teacher or a more competent peer and then through interaction with the more capable person learns to complete the task on his own. Moll and Whitmore (1993), give an example of the zone of proximal development in the classroom context. The class consists of third grade bilingual students. Within the classroom, the students were studying the theme of Native Americans. As a culminating activity, the students did research projects on various aspects of the theme. As the class studied the subject, the teacher created webs to organize information about Native Americans. In cooperative groups, the students are now creating webs on their own to organize their own information for their research (pp. 30-39).

In order for the zone of proximal development to exist in the classroom, two important concepts have to be present in the classroom, modeling and discourse. The teacher as the more competent peer has to model the desired behavior to the student. In the above example, the teacher had to first model how to create webs with the students and then allow them to share their thoughts while
creating their own webs. It is impossible for a child to learn or use a skill if that child has not seen the purpose for that particular skill. In this case, the teacher had already modeled the use of the web and the students had already seen its usefulness and were now using it to organize their own task.

Discourse, also has to occur for students to reach their future potential. It is through classroom dialogue that children learn to share their own knowledge, as well as listen to others thoughts and adapt or change their own thinking. According to Chang-Wells and Wells (1993) it is through participation in discourse that children discover three important functions of literacy: "accumulation and organization of information, fix decontextualized meaning and objectification of meaning" (p. 62). In other words through participation in discourse students will be able to organize data, assign meaning to concepts and to be able to clarify for themselves and others what it is that they are thinking or trying to convey. In the same chapter, they (Chang-Wells & Wells, 1993, p.65) introduced a second grade boy named Jack and his teacher, Helen Whaley. Through discourse the teacher helps groups of students to organize their knowledge, assign meaning and
explain their own thought processes through group participation in a classroom presentation:

T: Let’s find out what things we need to check on to be sure you’re ready for presentation. Danny?

D: How organized?

T: How—what things are we going to look at to see if they’re organized. We are going to look at organization. Nadir?

N: Does it make sense?

T: If what makes sense?

N: The play

This example demonstrates how meaningful discourse mediates understanding.

Theoretical Framework

As with reading and writing, spelling is also a developmental activity. A child does not know how to spell conventionally when he enters school. It is through social interaction with more competent peers and experts that a child learns to spell. According to Bear, Invernizzi, Johnston and Templeton (1996), spelling is learned through social forces and not individually. “Like spoken vocabularies, written words are learned in context. Whether through shared book experiences, lap reading, or
bedtime stories, written words appear in a social setting and social forces provide the impetus to learn them. Teachers, parents, and other intimates are the children's models in the social habits of reading and writing for work, for recreation, and for information. The practice and experience of imitation and appropriation provide the most powerful sway in children's learning. Social forces and rewards create the urge for students to spend the time necessary to learn to read and write. The more feedback and encouragement extended, the more persistently children continue to imitate the literate behaviors of their role models" (p. 2).

An important feature of the zone of proximal development is the concept of modeling. Through shared reading and writing experiences teachers model for students conventional or standard spelling and good spelling strategies. By analysis of students spelling errors, a teacher can determine what skills his/her students possess and what spelling skills he/she needs to set up a zone for. For example (Wilde, 1999, p. 176) if students are confusing the blend [tr] with the digraph [ch], a teacher first has to understand the reason for the spelling error and then set up activities that the child can use to spell words containing these sounds correctly.
According to Wilde (1999), the above example points out two important themes: "the importance of the teacher’s knowledge about why children produce the spellings they do, and the equal importance of building on what children already know" (p. 176). In the above situation, the teacher could set up a study of words that begin with these two sounds. By setting up word studies, the teacher not only models to the students the proper use of [tr] and [ch] words, but also gives them an opportunity to play with words. For example, a teacher could set up a game in which students create different words with [tr] and [ch] by adding different endings. The students could then discuss what words make sense and what words do not.

Dialogue is another important feature of the zone of proximal development. Children need to be given the opportunity to discuss their spelling strategies. It is through the discussion of their own thoughts and listening to other thoughts on spelling, that children can modify or adapt their own spelling strategies. Kamii and Randazzo (1985) state, "children construct knowledge by modifying their previous ideas, rather than by accumulating new bits transmitted from the outside, and the exchange of ideas among peers stimulates such modification." Wilde (1999) adds, "Asking the teacher to spell a word cuts off the
thinking process for the child...collaboration with peers promotes an additional level of active thinking: defending one’s own views and assessing those of others” (p. 181).

Summary

As with reading and writing, spelling is a skill that develops over time. Teachers need to be aware of why children invent the spelling that they write and then determine what they need to model and teach for students to correct the invented spellings. Teachers also need to give students the opportunity to discuss their own spelling strategies in order to reflect. It is through this reflection that children learn to modify their spelling strategies and incorporate new strategies into their spelling.
CHAPTER TWO
REVIEW OF THE LITERATURE

This chapter will discuss the research that has been completed by others on student spelling errors (invented spelling) and on the concept of spelling development. This section will be divided into three parts: early studies, recent studies and a summary of the research.

Early Studies

Early studies conducted by Zutell (1980), Hudelson (1981), Chomsky (1971), Temple (1979), Henderson and Beers (1980), seem to agree that spelling "errors" or rather invented spellings in students' writing are not random, but systematic. In their research, they have all found that the invented spellings of children have a predictable pattern. Zutell's (1980) study on fifteen students from first through fourth grade pointed out four categories of predictable invented spellings that were seen in student writing: 1) letter-name-sound correspondence 2) structural patterns 3) inflectional patterns and 4) derivational patterns. In the letter-name-sound correspondence, a student writing in Spanish might spell the word manzana with an S instead of a Z for the simple fact that the letter Z has the same sound as the letter S. An example of
a structural error would be if a student left off the silent H at the beginning of a word. An inflectional error would result if the student wrote the word media (stockings) as opposed to media (measuring) (p. 52). In studies conducted by Henderson (1980), they found similar categories of mistakes as stated above, but they also found that students relied on what they already knew as a basis for spelling unfamiliar words. For example, "if a student does not know how to spell the word built, but knew the word bill then he/she will merely add the letter T to bill to spell billt" (p. 5).

A study conducted by Temple (1979), concluded that students' invented spellings are widespread throughout the world. In every alphabetic language students invented spellings are very systematic (p. 5). A child repeatedly uses a pattern to represent the same grapheme, irregardless of the word that they are trying to spell. For example, a student might always use the letter S to represent the /s/ sound irregardless of the fact that the C, X and Z also make the same sound. Temple (1979) also found that the first attempts at spelling are based upon phonetic principles and that different students' invented spellings are virtually identical if they are at the same developmental stage (p.6).
In Beers (1980) studies on seventy-five first and second graders in Charlottesville, Virginia, he also concluded that students' invented spellings were not random, but systematic. In this study, students were given a list of words to spell that contained both real words and made up nonsense words. It was observed, as in Zutell's study, that students' first attempts at spelling words relied heavily on the letter-name-sound correspondence strategy. Students, at the second grade level, also demonstrated knowledge that letters and letter combinations represent sounds rather than letters being sounds themselves. Students at a higher developmental level were able to spell words correctly that combined blends or short vowel sounds. The final strategy that was observed in second grade student spelling was the awareness of silent letters in words, which would correspond to the structural patterns category (p. 41).

In a study conducted by Hudelson (1981), she also found that first and second grade bilingual students' invented spellings were also systematic and not random. In analyzing her data, Hudelson, organized the patterns of invented spelling into six categories: 1. spelling that reflects knowledge of letter names, 2. spelling that reflects use of phonetic categorization of speech sound,
3. spelling that reflects exaggerated pronunciation, 4. spelling that reflects community speech patterns, 5. spelling that reflects individual language development, 6. spelling that uses English words that have become part of the Spanish of the local community (pp. 55-59). Hudelson’s categories of invented spellings also coincided with that of Zutell (1980), but Hudelson also included categories, which reflected the child’s community influence on his/her spelling. Thus, Hudelson saw social forces as a powerful influence on children’s spelling.

Furthermore, in looking at spelling programs to improve student spelling, Henderson (1980) concluded, “Where instruction is paced to the child’s underlying conceptual grasp almost any methodology is likely to succeed” (p.2). Chomsky (1971), also agreed that a student will move from invented spelling if a student’s writing is nurtured and not constantly corrected. He stated: “children will develop a natural curiosity for the words around him/her and begin to ask how things are spelled” (p. 510).

Recent Studies

As with many of the early studies, more recent studies conducted by Wilde (1999), Bear et al. (1996), and
Valle-Arroyo (1990), also found that students spelling errors are not wild or random errors, but systematic attempts at spelling words using the knowledge they possess about spelling. Most of the researchers also found that social forces also influence the children's spelling.

In a study conducted by Bear et al. (1996), they found that children's spelling was developmental and that their invented spellings (spelling errors) were not random guesses, but systematic attempts to use the skills they had learned. The authors also identified six categories of spelling development: Preliterate, Early Letter Name, Middle and Late Letter Name, Within Word Pattern, Syllable Juncture and Derivational Constancy. The first stage of spelling development is Preliterate Spelling. In preliterate spelling, students are making scribbles or letter like characters to represent meaning. In the second stage (Early Letter Name), students use the names of letters to represent the sounds they wish to write. For example, cake might be written as KK. The Middle and late letter name stage is marked by the appearance of vowels in their spelling. So therefore in the above example, cake would now be spelled as Kak or Cak. The Within word pattern stage is marked by the students' ability to use most single syllable short vowel sound correctly and they
begin to use abstract patterns to represent long vowel sounds, such as smock for smoke. In the final two stages, students begin to use root words and syllables to spell words according to their meaning (p. 2).

In researching how children learn words, Bear, Invernizzi, Templeton and Johnston (1996) found that "students' word learning is socially motivated, biologically driven and cognitively refined" (p.2). In discussing biological forces, the authors believed that all children were born with the innate ability to learn language. They believed that this innate ability served as a basic foundation for children to learn how to read and write. Once a child is able to communicate in sentences then that child is ready to learn to read and write and see how the sentences in which they speak are represented in print.

They (Bear et al., 1996, p. 1) also found that most of the words that children learn are learned in social contexts and thus "social forces exert a powerful influence on learning." Children learn to speak by imitating the sounds that their parents make and by listening to their parents. The same holds true for reading and writing. Children learn to read and write by observing and participating in reading and writing
activities organized by their parents, teachers or other more capable people. Children do not learn how to read without role models to teach them. The last force, which influences a child’s ability to learn, is cognitive forces (which also take place in social settings known as schools.) By going to school, children learn how written words are constructed and how to manipulate this learning into communicating their own thoughts on paper.

In Wilde’s (1999) review of research on invented spelling, she found that many researchers agreed that spelling errors are not random guesses, but close approximations of conventional spelling. Wilde (1999) found that: “an important part of learning to spell is trying-taking risks, making attempts, and receiving feedback” (p. 173). As children are given the opportunity to make spelling errors or use invented spelling, they can see for themselves that writing is an ongoing process that never ends because a story can always be edited. Wilde also noted that good spellers were also avid readers. As children received more and more opportunities to read different genres, their writing and thus their spelling improved. Wilde concludes that children’s spelling is developmental, as children learn more about words their
use of invented spelling will diminish and they will use more conventional spelling.

Finally, Valle-Arroyo (1990) found that students’ errors were systematic and not random. Most of the children in this study relied on phoneme to grapheme conversion (PGC) in order to spell words. In other words, most students spelled words according to the sounds that they heard and used phonetic spelling. Ironically, most mistakes made were due to the over reliance on the PGC strategy (pp. 86-87). For example, students would incorrectly spell the word soda by using a T instead of the D. The study also concluded that students were most likely to spell nonsense words correctly over real words because most nonsense words are created using PGC. Older children were more likely to attempt spelling low frequency words than younger children. Second grade students in the study attempted to spell those words in which they could use the PGC, but did not attempt to spell low frequency words or irregular words.

Summary of Review

In all of the case studies reviewed, it was concluded that children’s invented spellings are not random or wild guesses, but that they were systematic attempts at
conventional spelling. Researches also pointed out the children usually spell words based on what they have already learned about spelling. Younger children usually rely heavily on what Valle-Arroyo termed phoneme-grapheme conversion to spell words. In other words, children usually spell words as they think they sound. However, all of the researchers saw spelling as a developmental process and believed that as children became older they would start to use more sophisticated spelling rules in order to spell unknown words.
A case study approach was carried out for this project. In order to find out what patterns of invented spelling occurred in Limited English Proficient (L.E.P.) students' stories and journal entries in their primary language (Spanish) were collected on a monthly basis. A running transcript of the words used in the writing sample was developed. Each word was classified into two categories: invented spelling or conventional spellings. The invented spellings were analyzed to see if any patterns emerged, as well as the frequency of occurrence. Each story was marked with the proportion of invented spellings to total words used. These records were kept in order to conduct mini-lessons to improve spelling skills through the use of dialogue and spelling strategies.

Data Needed

Students wrote on a daily basis for a period of thirty minutes and at the end of each month they chose a story to submit for evaluation and analysis. Thus, all nineteen samples were first drafts of journal entries and student developed stories. Once all nineteen samples were collected a running transcript was created in order to
classify whether a word was an invented spelling or a conventional spelling.

Subjects

Four students' writing samples, which include first drafts of stories and journal entries, from a primary language second and third grade class will be collected. Monthly writing samples from July 1998 to June 2000 were analyzed in their primary language, Spanish. The samples covered both their second and third grade years. The subjects consist of students who were considered to be at grade level or slightly below grade level. There were three girls and one boy of Mexican descent in the group. They had all been tested at a Limited English Proficient level one using the IPT (Idea Proficiency Test), which means that the students knew little to no oral English.

Student 001 was born in Jalisco, Mexico. His family immigrated to the United States when he turned one. He is the oldest of four children and is the first to attend school. He excelled in mathematics and enjoyed reading.

Student 002 was born in Los Angeles. Her parents do not speak any English, but mother was taking the English classes at the school. Her parents achieved an elementary education in Mexico. Her favorite subject was reading, but
she hated to write. She preferred to learn in Spanish than in English. Student 003 was born in Fontana, California. She is the eldest of two girls. Her parents are very supportive of her academics and encourage her to do well in school. Her favorite subject was mathematics. Student 004 was also born in Jalisco, Mexico. She came to the United States when she was a baby. Her parents did have schooling in Mexico. They both completed some high school, but did not graduate. Her parents encouraged her to do well in school. She enjoys reading and loves learning the English language.

Methodology

A case study approach was chosen to carry out this study. Students' first drafts of stories and journal entries were collected on a monthly basis over a 19 month period of time, to document the number of words that each student attempted to spell and the number of invented spellings they produced. Each word was also analyzed to determine whether it was an invented spelling or a conventional spelling.

Data Collection

On a monthly basis, students selected a journal entry or story they had written to turn in. All journal entries
and stories had to be first drafts. A running transcript was created to analyze the words that the students spelled. As can be seen from Appendices A-D, three categories were created: student spelling, conventional spelling and classification. Every word that the student attempted to spell was listed under the student spelling category. If the word was an invented spelling the word was written conventionally in the column right next to the word. Finally, in the third column was a classification as to why the student created the invented spelling. Each writing sample was labeled with the students' number, type of sample and the date in which it was written. For example, 001J5-19-00 stands for student 001, journal entry and the date on which it was written was May 15, 2000 and 003SS1-8-98 would mean student 003, student story and the date on which it was written would be January 8, 1998.

Once each writing sample had been categorized a ratio of invented spelling and conventional spelling was calculated. This system of categorization was adapted from Dr. Flores unpublished research in Spanish orthography.

Analysis of Data

Each writing sample included tallying the number of words used, which was the denominator. The numerator was
then the number of invented spellings. Thus, if a student's entry includes 200 words and has 35 invented spellings: then 35/200=17.5% would be the invented spelling rate with a conventional spelling rate of 82.5% (see appendices A-D).

Once the invented spellings were determined, categories were establish to further analyze, the invented spelling based on common linguistic features and strategies used. Hudelson's (1981) categories of invented spelling were used to categorize the invented spellings that the students' produce as well as two additional strategies were created to accommodate all of the invented spellings that the students produced. The eight categories used are: 1) spellings that reflect knowledge of letter names and/or sound letter correspondence, 2) spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation, 3) spelling errors that suggest the use of a spelling strategy of exaggerated pronunciation, 4) spellings that reflect individual language development, 5) English words that are spelled with Spanish orthography, 6) spellings that reflect community speech norms, 7) spellings that reflect letter reversals and 8) anomalies. The last two categories were added to account for new phenomenon not
included in Hudelson’s study. These categories were used to identify the different patterns of invented spelling that emerged in each.

In order to see how both the conventional and invented spellings rates of each student fluctuated over time tables 9-12 and graphs 1-8 were created. Each table shows the sample date, number of invented spellings, total words used in the sample, the invented spelling rate and the conventional rate. The graphs also demonstrate the ratio of invented to conventional spelling (see graphs 1-8) for each grade. These tables and graphs showed the improvement of students’ conventional spelling rate over a two year period. Not every month showed an increase in conventional spelling, there were marked decreases; however, it was useful to go back to students’ transcripts to find out what conventions the students needed to work on. Finally, a table was also created for each of the eight categories showing the various invented spellings that the students produced in each category, as well as the convention the students need to improve (See table 1-8).
CHAPTER FOUR
ANALYSIS OF DATA

In analyzing this data, Sarah Hudleson’s (1981) six categories of invented spelling were adapted to identify categories of invented spellings (pp. 55-59), as well as two other categories that were established based on the data collected. The data was broken into eight categories of invented spelling: 1) spellings that reflect knowledge of letter names and/or sound letter correspondence, 2) spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation, 3) spelling errors that suggest the use of a spelling strategy of exaggerated pronunciation, 4) spellings that reflect individual language development, 5) English words that are spelled with Spanish orthography, 6) spellings that reflect community speech norms, 7) spellings that reflect letter reversals and 8) anomalies.

Category 1

Category 1 Spellings that reflect knowledge of letter names and/or sound letter correspondence.

All the second grade students in this group had received phonics instruction in the first grade and
continued to receive phonics instruction in Spanish using Estrellitas, a Spanish phonics program. As a result, students used their knowledge of letter sounds to spell words. As can been seen from table 1 their phonetic knowledge is used as evidenced by their invented spellings. The most prominent invented spellings in this category were those that involved the substitution of graphemes B and V. Many children perceive the two letters to have the same sound and thus interchange the letters frequently. Another substitution that occurred was the substitution of the letters C and S. Children have learned that the letter C sometimes imitate the sound of the letter S and therefore interchange these letters as well. As can be seen from Table 1, the omission of the silent H is also quite prevalent. Children often omit this letter because it is silent in the Spanish language. Children need to rely on the visual memorization strategy instead of the phonetic hypothesis to spell words containing the silent H conventionally.
Table 1.

Category 1: Spelling that Reflects Knowledge of Letter Names and Sound-letter Correspondence

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substitution of grapheme b for v and vice versa</td>
<td>Children perceive that b and v make the same sound.</td>
</tr>
<tr>
<td>enbita, enbito, bengá, tavían, ibía,</td>
<td></td>
</tr>
<tr>
<td>bisitar, inbierno, berdad,</td>
<td></td>
</tr>
<tr>
<td>faboría, nuebecitos, nabidad, revado,</td>
<td></td>
</tr>
<tr>
<td>bolbieron, avía, estava, bestir, ba,</td>
<td></td>
</tr>
<tr>
<td>bamos, boy, avuja, binimos, benir,</td>
<td></td>
</tr>
<tr>
<td>binir, berlo, benido, llebar, benian,</td>
<td></td>
</tr>
<tr>
<td>gagava, ahiento, bi, ber, bea, ariva,</td>
<td></td>
</tr>
<tr>
<td>bacuna, beces, bes, vaje, tavien,</td>
<td></td>
</tr>
<tr>
<td>bestido, vuenos, cueba, binieron, vien, ban niebe,</td>
<td></td>
</tr>
<tr>
<td>bimos, biene, bolaban, bejetales, ber, uviera, ivan</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme s for z and vice versa</td>
<td>Children perceive that s and z make the same sound.</td>
</tr>
<tr>
<td>sapatos, secate, abraso, asul, bes,</td>
<td></td>
</tr>
<tr>
<td>ves, narís, empesó, iso, isquierda, personás, vecez</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme ll for y and vice versa</td>
<td>Children are taught that the grapheme ll and y make the</td>
</tr>
<tr>
<td>pallaso, yoro, yorado, yore, aller,</td>
<td>same sound.</td>
</tr>
<tr>
<td>aya, oya, collotes, lla, eya, eyos, olleron</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme q for c and vice versa</td>
<td>Children perceive the q and c to make the same sound.</td>
</tr>
<tr>
<td>quro, inyegusion, chicito</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme c for z and vice versa</td>
<td>Children perceive that the c and z make the same sound.</td>
</tr>
<tr>
<td>ico, prinzipe, hize</td>
<td></td>
</tr>
<tr>
<td>Invented Spelling</td>
<td>Possible Explanation</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Substitution of grapheme r for rr and vice versa</td>
<td>Maybe using the name of the letter to spell.</td>
</tr>
<tr>
<td>carera, caros, caro, garar, hagaras, coremos, ariba, eridos, orlando, ariva</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme g for j and vice versa</td>
<td>Children are taught that sometimes the letter g makes the sound of the letter j.</td>
</tr>
<tr>
<td>guganoms, ogos, manegando, dejo, caga, justo, escojimos, bejetales, gugaba, dige,</td>
<td></td>
</tr>
<tr>
<td>Jerardo</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme c for s and vice versa</td>
<td>Children are taught that sometimes the letter c makes the sound of the letter s.</td>
</tr>
<tr>
<td>caca, casa, asen, tonse, siudadano, princesa, sercas, diserles, sierto,</td>
<td></td>
</tr>
<tr>
<td>multiplicaciones, ise, televiscion, inyequion, sertificado, princespe,</td>
<td></td>
</tr>
<tr>
<td>sielo, dise, calsetin, cenisiente, ase, cosinita vacito, celebracion,</td>
<td></td>
</tr>
<tr>
<td>eomosionarse, serial, Garsia, cierto</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme n for ñ</td>
<td>Since children are growing up in an English speaking society they might not see the ñ</td>
</tr>
<tr>
<td>cumplananos, cumpreconos</td>
<td>in print on a daily basis.</td>
</tr>
<tr>
<td>Substitution of grapheme i for y and vice versa</td>
<td></td>
</tr>
<tr>
<td>i, ally, hi, aquy, querya, reyna, yva</td>
<td>Maybe using the sound of the letter i to spell.</td>
</tr>
</tbody>
</table>
Invented Spelling | Possible Explanation
--- | ---
Omission of grapheme h | Since children are taught that the grapheme h is silent they omit it.

Ermano, asta, ermanito, asiendo, ayha, eridos, aora, ombre, asta, asen, ise, abiamos, ojas, ago, avia, ubiera, amburgesa, zanaoria, ai, orita, iciero, ico, ay, abia, aba, ayga

Addition of grapheme h | Children are overgeneralizing the silent h rule and adding the grapheme.

hi, hagaco, hagaras

Category 2

Category 2 Spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation.

In this category students used their knowledge of phonics to categorize certain letters to correspond to certain phonetic sounds. They over relied on points of articulation of phonetic sounds to spell words, often times producing invented spellings and not conventional spelling. As can be seen from Table 2, most of the invented spellings in this category involved the substitution of one vowel sound for another. Children perceive vowels to have the same point of articulation. When they pronounce the vowels they can feel the sound
coming from their throats and as a result often interchange one vowel for another. Another salient feature in this category is the substitution of the nasal letters M and N. Throughout the two year study, the four students frequently spelled words containing these letters by substituting one for another.

Table 2.

Category 2: Spelling that Reflects Use of Phonetic Categories of Speech Sounds

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substitution of one vowel for another</td>
<td>Children perceive that vowels have the same point of articulation.</td>
</tr>
<tr>
<td>oando, mucho, secate, ol, todo, gusta, mueche, pura, fueran, lobo, muchas, digiron, sube, resbaladero, las, tinian, peloto, so, par, esperera, al, serial, degaron, otros, bendere, mondo, rasa, digoron, muno, revado, ambitada, liego, vayomos, siudedano, habie, estodio</td>
<td></td>
</tr>
<tr>
<td>Addition of a single vowel</td>
<td>Children maybe overgeneralizing other rules.</td>
</tr>
<tr>
<td>vnguan, jugar, jguuamos, edada, juegamos, juego, vana, juegaba, cueando, queiero</td>
<td></td>
</tr>
<tr>
<td>Invented Spelling</td>
<td>Possible Explanation</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Substitution of grapheme n for m and vice versa</td>
<td>Children may perceive that the n and m have the same point of articulation.</td>
</tr>
<tr>
<td>tanbien, bonberro, lunbre, linpiaron, conpro, mos, muy, ni, hernana, hernanito, dornio, ambitada, nana, cana, em, pomgo, linpia</td>
<td></td>
</tr>
<tr>
<td>Omission of one vowel from 2 or more together</td>
<td>Children will use the vowel that is much more perceptible.</td>
</tr>
<tr>
<td>reso, tabin, famila, divirta, escula, lugo, biblioteca, quieramos, hora, tine, monstro</td>
<td>The vowels may be less perceptible than the consonants to these children.</td>
</tr>
<tr>
<td>Omission of single vowels</td>
<td></td>
</tr>
<tr>
<td>Miga, jugba, garrar, diversones, entra, anque, hzo, dercha, connig, un, my, princes, cundo, cuand, reglar</td>
<td>Children may delete nasals when the following consonant is perceived to have the same point of articulation.</td>
</tr>
<tr>
<td>Omission of grapheme n or m before a consonant</td>
<td></td>
</tr>
<tr>
<td>tabien, lubre, mustro, cuado, tamien, tego, siepre, brico, blaca, ivierno, ropio</td>
<td>Children perceive that the grapheme ge and gue have the same sound.</td>
</tr>
<tr>
<td>Substitution of grapheme ge for gue and vice versa</td>
<td></td>
</tr>
<tr>
<td>juge, jugetes, page, amburgesa, guente</td>
<td>Children may perceive that the r and l have the same point of articulation.</td>
</tr>
<tr>
<td>Substitution of grapheme r for l</td>
<td></td>
</tr>
<tr>
<td>argo, cumpre, cumpreones</td>
<td></td>
</tr>
<tr>
<td>Invented Spelling</td>
<td>Possible Explanation</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Substitution of grapheme j for h and vice versa</td>
<td>Children may perceive that the j and h have the same point of articulation.</td>
</tr>
<tr>
<td>juele, hugo</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme c for t</td>
<td>Children may perceive that the c and t have the same point of articulation.</td>
</tr>
<tr>
<td>despierce</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme p for v</td>
<td>Children may perceive that the p and v have the same point of articulation.</td>
</tr>
<tr>
<td>pidrio, piolin</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme b for f</td>
<td>Children may perceive that the b and f have the same point of articulation.</td>
</tr>
<tr>
<td>brio</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme t for b</td>
<td>Children may perceive that the t and b have the same point of articulation.</td>
</tr>
<tr>
<td>truja</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme t for d</td>
<td>Children may perceive that the t and d have the same point of articulation.</td>
</tr>
<tr>
<td>cuandos</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme t for p and vice versa</td>
<td>Children may perceive that the t and p have the same point of articulation.</td>
</tr>
<tr>
<td>tatin, espudiaron, espaban</td>
<td></td>
</tr>
<tr>
<td>Substitution of grapheme l for b</td>
<td>Children may perceive that the l and b have the same point of articulation.</td>
</tr>
<tr>
<td>lola</td>
<td></td>
</tr>
</tbody>
</table>
Children may perceive that the d and l have the same point of articulation.

Children may perceive that the g and q have the same point of articulation.

As children begin to write, teachers often tell children to sound words out as a strategy for spelling. Many times as children write they can be heard sounding words out. Therefore, any extra letters may be as a result exaggerated pronunciation (see Table 3).

Table 3.
Category 3: Spellings that Reflect the Use of a Spelling Strategy of Exaggerated Pronunciation

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esso, anio, milla, miss, familia, edadad, otras, quie, pallasio, nieve, sirrenas</td>
<td>This may occur because children are taught to sound out words as a spelling strategy.</td>
</tr>
</tbody>
</table>
Category 4

Category 4 Spellings that reflect individual language development.

Many of the children in this group were still acquiring their native language and thus errors such as verb tense and plurals may have not been acquired. As can be seen from table four an abundance of invented spellings in this category resulted from students not changing singular nouns to plural nouns. While it was a skill that had been taught in the classroom, students were still in the process of mastering that convention. Furthermore, there were several invented spellings within this category that involved the convention of using accents. For this study, it was decided not to include these invented spellings, but they were noted in the students' charts.

Table 4.

Category 4: Spelling that Reflects Individual Language Development

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dulce/dulces, le/les, usted/ustedes,</td>
<td>Skills such as verb tense, plural</td>
</tr>
<tr>
<td>amiga/amigas, favorita/favoritas,</td>
<td>foramation and the use of accents are skills that develop over time.</td>
</tr>
<tr>
<td>ella/ellas, galleta/galletas,</td>
<td></td>
</tr>
<tr>
<td>mucha/muchas, su/sus, nombre/nombres,</td>
<td></td>
</tr>
<tr>
<td>padre/padres, ser/hacer, veo/vio,</td>
<td></td>
</tr>
<tr>
<td>fuimos/fuimos, tambien/también,</td>
<td></td>
</tr>
<tr>
<td>pudamos/podemos,</td>
<td></td>
</tr>
</tbody>
</table>
Category 5

Category 5 English words that are spelled with Spanish orthography.

The children in this group live within a community were there are both Spanish and English speaking people. Many of them play with English only children in their neighborhood. As a result, they have internalized many English phrases and words and spelled them using Spanish orthography. (See table 5.)

Table 5.

Category 5: English Words that are Spelled with Spanish Orthography

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>truc/trick, o/or, tri/treat, gue/give, mi/me, santen/something, gu/good, yi/eat, poou/ Pooh, coras/quarters, Cati/Cathy, blus/blues, Flinstons/Flinstones, Disneylandia/Disneyland, peni /penny, Chistofor/Christopher, rayt/ride, aycr and ayscri/ice cream, mvie/movie, chicen/chicken, shorts/shorts, varies/Barbies, oberoles/overalls</td>
<td>The children are aware of English words despite the fact that they do not speak English. They hear English in their communities and at school.</td>
</tr>
</tbody>
</table>

35
Category 6

Category 6 Spellings that reflect community speech norms.

The families of the children in this group come from various states in Mexico and thus their spelling reflects the dialect of the region their families come from. The children will often spell words according to how they are pronounced by their families. In many cases, the Spanish that is spoken in the homes come from rural towns in Mexico, were many people are provided with a public education. Many times the Spanish spoken in the home is considered to be informal. Although most of the parents of the children in the study spoke a dialect from these rural towns in Mexico, the children do realize that there is a difference between oral language and what is written down on paper. Despite this there were instances in which the children's dialect surfaced in their writing. (See table 6.)
Table 6.

Category 6: Spelling that Reflects Community Speech Norms

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Se/sed, polecia/policía, ayga/haya,</td>
<td>These spellings may reflect the dialect of the Mexican state in which the families</td>
</tr>
<tr>
<td>pa/para, los/les, la/le,</td>
<td>originated from. It may also be informal speech.</td>
</tr>
<tr>
<td>tonse/entonces, garar/agarrar,</td>
<td></td>
</tr>
<tr>
<td>vinir/venir, binir/venir,</td>
<td></td>
</tr>
<tr>
<td>guena/buena, guenos/buenos, aí/allí,</td>
<td></td>
</tr>
<tr>
<td>cualita/abuelita, echeme/echarme,</td>
<td></td>
</tr>
<tr>
<td>los/nos, justar/gustar</td>
<td></td>
</tr>
</tbody>
</table>

Category 7

Category 7 Spellings that reflect letter reversals.

In this category, students used their knowledge of phonics to spell words, but perceived one sound to come before the other. They correctly identified the sounds of the words, but switched the order of the sounds they heard in the word. As can be seen from Table 7, invented spellings involving letter reversals were not common.

Table 7.

Category 7: Letter Reversals

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pintra/pintar, lutimo/ultimo,</td>
<td>These spellings may reflect the order of two graphemes.</td>
</tr>
<tr>
<td>haora/ahora</td>
<td></td>
</tr>
</tbody>
</table>

37
Category 8

Category 8 Anomalies.

The children in this group misspelled some words for which no logical explanation could be reached. Many of the words that were not spelled conventionally were words that the children knew how to spell and that they were able to spell when they were asked. It's evident that these anomalies were not as a result of invented spellings, but were just simply errors. (See table 8.)

Table 8.

Category 8: Anomalies

<table>
<thead>
<tr>
<th>Invented Spelling</th>
<th>Possible Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>carituras/caricaturas,</td>
<td>The children in this group misspelled some words for which no logical explanation could be reached.</td>
</tr>
<tr>
<td>acanzo/alcanzo, al/a, cenos/señor,</td>
<td></td>
</tr>
<tr>
<td>jula/junta, atros/atras, pe/pero,</td>
<td></td>
</tr>
<tr>
<td>juga/jugar, dro/dio, estudo/estubo,</td>
<td></td>
</tr>
<tr>
<td>mej/o/major, daile/baile,</td>
<td></td>
</tr>
<tr>
<td>quevar/llevar,</td>
<td></td>
</tr>
<tr>
<td>multiplicaciones/multiplicaciones,</td>
<td></td>
</tr>
<tr>
<td>otra/otra, espudieron/estubieron,</td>
<td></td>
</tr>
<tr>
<td>alberca/alberca, programa/programa,</td>
<td></td>
</tr>
<tr>
<td>despue/despues, bujas/brujas,</td>
<td></td>
</tr>
<tr>
<td>ría/fría, ogo/oyó,</td>
<td></td>
</tr>
<tr>
<td>cagadita/calladita, regara/regalar</td>
<td></td>
</tr>
</tbody>
</table>

Individual Student Analyses

This section will describe, present, and discuss four students' writing in spelling patterns in Spanish across the above aforementioned categories. Nineteen writing
samples per student were collected from journals and student stories and analyzed across nineteen months while they were in second and third grades. These analyses will demonstrate variational spelling patterns across time and child.

Student 001

Student 001 was born in Jalisco, Mexico. His family immigrated to the United States when he was a year old. He is the oldest of four children and is the first to attend school. He excels in mathematics and enjoys reading. However, writing is his least favorite subject. Initially he was writing many words in his native language syllabically, but had become more alphabetic (Ferreiro and Teberosky, 1982) by the end of his second grade year. He is currently in fifth grade and writing is still his least favorite subject. However, his teacher assures that his writing is very creative and that he has become a good writer.

Category 1. Spellings that reflect knowledge of letter names and/or sound/letter correspondence.

Student 001 had received phonics instruction in both kindergarten and first grade and thus possessed considerable knowledge of letter names and sound letter correspondence. Most of his invented spellings seem to
reflect his reliance of letter names and sound letter correspondence as a spelling strategy in his writing. By second grade he had concluded that each letter in a word produces a sound and thus uses one letter to represent each sound that he hears when saying a word out loud. In Spanish orthography the letter H is silent and thus most of student 001’s invented spellings resulted in the omission of the letter H in words, which contained them. He immediately started the word with the first letter that he pronounced. For example, in the first writing sample collected on July 23, 1998 (beginning of second grade), he spelled the word hermano as ermano. Since he did not hear the silent h at the beginning he simply omitted it. By the end of his third grade year he had learned which nouns contained the silent h, however, he was having trouble with verbs as we can see in the sample dated June 15, 2000 were he spelled the word, habíamos, without the letter h.

Also within this category, student 001’s invented spellings reflected his knowledge that certain letters often imitate the sound of other letters. Student 001 learned that in Spanish the B and V sound alike, that the c sometimes sounds like an s, the Z makes the same sound as the s and that sometimes the g makes the same sound as the J. As a result, throughout his writing he often
interchanges the letters that he believes to make the same sound. For example, on October 30, 1999 (beginning of second grade), he spelled the word, *vamos* and *van*, with a B instead of a V. On February 16, 1999 (middle of second grade), he spelled *ojos* with a G instead of a J and on November 19, 1999 (beginning of third grade), he spelled the word, *hacen*, with the letter s instead of a C. While he still had trouble with the use of these letters at the end of third grade he had learned to distinguish when to use them in basic everyday words, however, in longer more complicated words he still interchanged letters that he perceived to have the same sound.

**Category 2.** Spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation.

Whereas most of the invented spellings that student 001 created fell into the first category, almost all the others fell into this second category. In this category students have a tendency to spell according to phonetic categories or the points of articulation of letter sounds. The majority of invented spelling that student 001 created in this category involved the omission vowels and the substitution of one vowel for another. In words where two or more vowels were together, he often wrote the vowel
that he perceived to have the dominant sound. For example, on July 23, 1998 (beginning of second grade, he wrote the word, resio, by omitting the letter I. On April 27, 1999 (end of second grade), he wrote the word, familia, without the second I. Many vowels were also substituted for one another. This maybe because children perceive vowels in Spanish to have the same point of articulation; that is, that for each of the vowels the sound is mainly coming from the back of the mouth. For example, on March 10, 1999 (middle of second grade), he wrote the word, polecia, with an E instead of an I because he perceived the letter I to have the same point of articulation as the E.

Also within this category, student 001 had trouble distinguishing between the nasal letters M and N. While the two letters have different points of articulation they are perceived to have very similar sounds. For example on April 27, 1999 (end of second grade), he spelled the word, bombero, with a N instead of a M. However, since most of the invented spellings involving the substitution of the two nasals were made in his third grade another possible explanation might be that he was having trouble writing the two letters in cursive.

Category 3. Spellings that suggest the use of a spelling strategy of exaggerated pronunciation.
The invented spellings that emerged in this category occurred because students are usually taught to sound out words as a spelling strategy. Often times you can enter any elementary school classroom and hear students sounding out words as they are writing. Students also use their knowledge that a syllable usually consists of at least one vowel and one consonant and therefore add a consonant where the syllable is made up of only one vowel. For example, on July 23, 1998 (beginning of second grade), he wrote the word, eso, with an extra S. Students may also exaggerate the sound of a letter when trying to spell a word with two or more vowels together and thus end up adding an additional vowel to make up for the exaggerated pronunciation of the vowel as student 001 did when he wrote the word, fui, with an extra I on October 10, 1999 (beginning of third grade).

Category 4. Spellings that reflect individual language development.

Since all four students in this class were second graders they were still acquiring their primary language. The invented spellings in this category were not so much a creative way in which the student deciphered words, they were made more as a result of their language development. Skills such as making nouns from singular to plural had
been introduced to all four children, but student 001 still had not mastered this skill as evident at the beginning of his second grade year when he did not write the word, dulce, as a plural on October 30, 1998 (beginning of second grade).

Furthermore, at this age students are still developing their ability to conjugate verbs properly. At this stage, students often in their speech use the wrong subject verb agreement. For example, they take their basic knowledge of the verb to know (saber) in Spanish and say, sabo, to tell someone that they know something. However, the verb, saber, is an irregular verb and thus they end up conjugating the verb incorrectly (in this case the verb that should have been used was se). However, linguistically the child is conjugating it correctly as a regular verb. This is also evident in student 001’s writing, he conjugated the verb, poder, by using the present subjunctive tense base, pued- and the imperfect indicative tense ending, -amos, to come up with the word, puedamos. He should have used the present indicative tense and come up with the word, podemos.

Category 5. English words that are spelled with Spanish orthography.
Although student 001 lives in a Spanish speaking household and most of his neighbors are Spanish speaking as well, he loves learning English and is not afraid to speak it. He watches a great deal of television in English and is an avid Pokemon fan, as are other boys his age. The English that he hears on a daily basis comes through in his daily writing. He often writes about what he sees on his favorite cartoon or phrases that he hears, however, he spells the English that he hears using Spanish orthography. When writing in his journal about Halloween (October 30, 1998, beginning of second grade) he attempted to write the popular English phrase "Trick or treat. Give me something good to eat," but spelled it using Spanish orthography "truc o truii gui mi santen gu to yi." He uses what he has learned about letter names and sounds in Spanish and applies it to what he knows how to say in English, but as you can see it doesn't always produce conventional spelling. This particular entry accounts for his decrease in conventional use for this month.

**Category 6.** Spellings that reflect community speech norm.

The Spanish spoken by student 001 and his family would be by most Spanish speakers considered to be from a very small town in Jalisco, Mexico. Most children from
small towns in Mexico are not provided with a public education. Student 001's father did not have any formal school and his mother completed up to the fifth grade only. Often the Spanish spoken in these small towns is considered to be very informal or a dialect of Spanish and it is often reflected in their writing. Student 001 has also reflected this dialectical Spanish in his writing. He used the word, pa, instead of para on September 28, 1999 (beginning of third grade), tonse, instead of entonces on May 17, 2000 (end of third grade) and garar instead of agarrar on June 15, 2000 (end of third grade). These dialectical examples show that Student 001 has confidence and pride in his usage of this dialect.

Category 7. Spellings that reflect letter reversals.

In this category, Student 001 simply reversed the order of two letters in the word pintar (which he wrote pintra) on two occasions on October 30, 1998 (beginning of second grade), and in the word último (which he wrote lutimo) on May 14, 1999 (end of second grade). Whether he intended to spell the word as he did or whether he simply inadvertently switched the order of the two letters is unclear. These were the only two reversals in the entire nineteen samples, which demonstrate that they are not common occurrences.
Category 8. Anomalies

On February 24, 2000 (middle of third grade), student 001 wrote the word *caricaturas* as *carituras*. He left out the syllable, *ca*, in the middle of the word. No reasonable explanation for this invented spelling could be found, especially after asking the student how to say and spell the word, which he did both correctly. It was decided that he simply inadvertently left out the two letters. This particular omission of a syllable is the only one in the entire two year study of spelling anomalies.

**Student 002**

Student 002 was born in Los Angeles. Her parents do not speak any English, but mother is taking the English classes at the school. Her parents achieved an elementary education only in Mexico. Up until the age of four she lived in East Los Angeles. Her neighbors spoke Spanish and many of the advertisements were also in Spanish. Melissa is the eldest of three children. She loves school, but struggles with English. Her favorite subject is reading, but she prefers to read in Spanish. She does very well in mathematics and loves to write. She is an alphabetic writer, however, she does not like to revise her writing. She feels that when she is done writing her story that its time to move on to the next. She is know in the fifth
grade and is doing well, however, she still does not like to edit her writing.

Category 1. Spellings that reflect knowledge of letter names and/or sound/letter correspondence.

Student 002 also had phonics instruction in both kindergarten and first grade. She possesses a strong knowledge of letter/sound correspondence and spells most words accurately. The majority of her invented spellings fell into this category; however, they were concentrated to letters that made similar sounds. Often children are taught that the letter B and V make the same sound in Spanish, as a result children use these letters interchangeably. The majority of student 002’s invented spellings in this category were as a result of this. If student 002 had a doubt as to whether words contained either the letter B or V, she uses the letter B. While this strategy seems to be reasonable to her, it did keep her from spelling the words conventionally. As can be seen from her writing on July 23, 1998 (beginning of second grade), a word such as, *voy*, a high frequency word, was spelled correctly. Also on February 16, 1999 (middle of second grade), she was also able to spell other high frequency words such as *nieve, suave,* and *va* correctly using the letter V. However, as is evidenced on January
15, 1999 (middle of second grade), when a word was not a commonly used word she would spell the word with a B instead of a V, as she did when she spelled *bacuna* instead of *vacuna*.

Student 002 also had trouble with letters that change their sound to imitate the sound of another letter. In this category, she had problems with the letters c, s, and z, all of which produce the sound of the letter /s/. Her invented spellings reflect the fact that she knows that the letter C is often pronounced with the soft S sound as opposed to the hard /k/ sound. She also has the knowledge that the letter Z produces the same sound as the letter /s/. As a result, she often uses the letter S to represent the soft sound of the letter C and that of the letter Z. Furthermore, we can see from her writing samples that she uses all three letters interchangeably to represent the /s/ sound. For example, on October 1, 1999, she represented the word, *principe*, with the following invented spellings: *prinsipe* and *prinzipe* and the word, *princesa* as *prinsesa*. On May 15, 2000 (end of third grade), she spelled the word, *abrazo*, with a S instead of a Z.
Category 2. Spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation.

Most of the invented spellings that emerged in this category consisted of student 002 interchanging the two nasals M and N. While the two letters have different points of articulation, they are perceived to have very similar sounds. For example on January 19, 2000 (middle of third grade), she spelled the word, *compro*, with a N instead of a M and then repeatedly spelled the high frequency words, *mamá* and *dormir* with Ns instead of Ms. However, since all of the invented spellings involving the substitution of the two nasals were made in her third grade another possible explanation might be that she was having trouble writing the two letters in cursive.

Also, with this category student 002 had many invented spellings where she interchanged one vowel for another. She might have interchanged the vowels because in Spanish children may perceive that the vowels have the same point of articulation. Children believe that it is so because when saying the vowels they feel the sound of these letters produced in the back of their throats. For example, on July 23, 1998 (beginning of second grade), she spelled the word, *sabe*, with the letter U instead of the
letter A. On February 24, 2000 (middle of third grade), she spelled the word, sueño, with the letter I instead of the letter U.

**Category 3.** Spelling that suggest the use of a spelling strategy of exaggerated pronunciation.

Within elementary school classroom children are often taught to say words out loud in order to determine the spelling of words. Due to this, you can usually walk into any primary classroom during writing time and hear student sounding out the words as they spell them. However, many times children exaggerate the pronunciation of the letters and end up adding extra single letters or even extra syllables. For example, on October 23, 1998 (beginning of second grade), student 002 added an extra A to the word, edad, and came up with edada and she repeated the ending syllable -ad to edad and came up with edadad. It should be noted that these were the only two occurrences of exaggerated pronunciation in the entire two year study.

**Category 4.** Spellings that reflect individual language development.

Student did not produce any invented spellings in this category.

**Category 5.** English words that are spelled with Spanish orthography.
Despite the fact that student 002 is surrounded by English every day, she prefers to read and write in Spanish. At the beginning of her second grade year, she was tested for English proficiency at a level one, which means that she speaks little to no oral English. However, she has learned quite a bit of oral English and it was reflected in her writing. When she was not able to translate an English word into Spanish, she would spell the word using Spanish orthography. Thus, on October 10, 1998 (beginning of second grade), she spelled the word chicken, as chicen, and on March 10, 1999 (end of second grade), she spelled the word, overalls, as oberoles. Strangely enough, these were the only two instances of English usage with Spanish Orthography.

Category 6. Spellings that reflect community speech norm.

Student 002 lives in a community in which many of the neighbors are of Mexican descent and therefore speaks Spanish very well. Her Spanish is influenced by what she hears in her community. Many of the people in her community have had very little to no formal schooling in Mexico and therefore they speak what most consider informal Spanish. Her writing reflects this phenomenon. On October 23, 1998 (beginning of second grade), she spelled
the word, venir, as vinir, which is how most people in her community spell pronounce the word. The conversion of the E to I is a common dialectal feature of rural Mexico.

Category 7. Spellings that reflect letter reversals.
Student did not produce any invented spellings in this category.

Category 8. Anomalies
On October 1, 1999 (beginning of third grade), student 002 spelled the word, una, as uana. She added an extra A to the middle of the word. On February 24, 2000 (middle of third grade), she spelled the word, terror, without the ending R. No reasonable explanation could be found for these invented spellings, especially since she had spelled the first word conventionally on various writing samples throughout this study and when asked how to spell the word terror she spelled it correctly as well. This leads to the conclusion that they were just simply errors.

Student 003
Student 003 was born in Fontana, California. She is the eldest of two girls. Her parents were very supportive of her academics and encouraged her to do well in school. They wanted her to continue onto college so that she will not have to struggle as they do. She loves to read, but
mathematics is her favorite subject. Writing is her least favorite subject and she dislikes revising her writing more. When she has to write she prefers to write in Spanish and does not like to write in English. However, she does like to speak in English and enjoys oral English activities.

Category 1. Spellings that reflect knowledge of letter names and/or sound/letter correspondence.

Student 003 received phonics instruction in Kindergarten and first grades. During writing time she could always be heard sounding words out. As a result, she relied heavily on her phonics instruction to spell words. Most of the invented spellings that she created reflected her knowledge of letter names and letter sounds. As with the prior two students, she also had problems distinguishing between the use of the letter B and the use of the letter V. As noted before, children perceive these two letters to have the same sound. In fact, they are allophones of similar sounds /b/ and /v/. As a result, student 003 consistently interchanged the two letters. For example, on October 23, 1998 (beginning of second grade), she spelled the word vestir as bestir. While student 003 did use the letters V and B correctly on occasion, she was still interchanging them during her third grade year when
spelling high frequency words such as vivia, which she spelled bibia, on February 17, 2000 (middle of third grade) and venga, which she spelled benga, on June 15, 2000 (end of third grade).

Within this category, student 003 also had occurrences with the omission of the letter H. Children are taught that in Spanish the letter H makes no sound and thus is silent. Often children simply omit the silent H when they are spelling words that contain them. Student 003 did not omit the H in high frequency words that began with the letter such as, hermana, on October 23, 1998 (beginning of second grade) and hay, on November 23, 1999 (beginning of third). However, she did omit the H with the words which contained the silent H in the middle of the word, such as the word, ahorita, which she spelled, aorita, on March 10, 2000 (end of third grade). This demonstrates that she is relying exclusively on the phonetic hypothesis. She needs to learn the visual memorization strategy with this orthographic feature.

Category 2. Spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation.

Whereas almost all the invented spellings that student 003 created fell into the first category the
majority of the other invented spellings fell into this category. All the invented spellings that she created involved two major components; they either involved a vowel or one of the nasal letters N or M. Most of her invented spellings that involved vowels consisted of her substituting one vowel for another. Often, children interchange vowels because they perceive vowels to have the same point of articulation. As they say the sound out loud, they can feel the production of sound far back in their mouths in their throats. For example, on April 27, 1999 (end of second grade), she wrote the word, para, as pura, substituting the vowel U for A. On March 10, 2000 (middle of third grade), she substituted the vowel E for I in the word, invit.ar and invitado and came up with embitar and emitado. Student 003 also had problems omitting vowels when two or more vowels were together in a word. She spelled the word with the more dominant vowel and omitted the other. On November 23, 1999 (middle of third grade), she spelled the word, diversions as diversones, omitting the I and including the more dominant /o/ sound. This was also the case on January 19, 2000 (middle of third grade), when she omitted the letter U and used the more dominant /i/ sound; she spelled the word, quiero as giero.
Also within this category, Student 003 had some difficulty with the use of the two nasal letters M and N. She often omitted them or substituted one for the other in her invented spellings. She usually omitted the two nasal letters if they immediately preceded a bilabial letter such as B or P. An explanation for this might be that the children perceive both the nasals to be bilabial themselves, thus when they write the word they choose to denote the bilabial which is dominant to them. For example, on September 21, 1998 (beginning of second grade), she spelled the word, también, without the nasal letter M and on July 26, 1999 (beginning of third grade), she spelled the word, siempre, without the M once again. When using the two nasals she also substituted one for another in her spelling. This might be the case because children perceive these two letters to be very similar in sound and thus interchange them in their spelling. For example, on February 16, 1999 (middle of second grade), she spelled the word, nombre, as nonbre.

Category 3. Spelling that suggest the use of a spelling strategy of exaggerated pronunciation.

In primary language classrooms, in which Spanish is spoken, children are often taught to say words out loud in order to determine the spelling of words. This is mainly
true because the sounds of letters in the Spanish do not very much. The vowels for the most part have the same consistent sound. Due to this, you can usually walk into any primary classroom during writing time and hear student sounding out the words as they spell them. However, many times children exaggerate the pronunciation of the letters and end up adding extra single letters. For example, on July 23, 1998 (beginning of second grade), student 003 added an extra T to the word, otras (she wrote attras), on February 16, 1999 (middle of second grade) she added an extra E to the word, nieve and on May 25, 2000 (end of third grade), she spelled the word, mis (she wrote miss), with an extra S. It should be noted that these were only a few occurrences of exaggerated pronunciation in the entire two year study.

**Category 4.** Spellings that reflect individual language development.

All four students in this class were second graders and were still acquiring their primary language. The invented spellings in this category were not so much a creative way in which the student deciphered words, they were made more as a result of their language development. While students had already been taught how to change nouns from singular to plural and when to use them, Student 003
still had not mastered this skill as evident during her second grade year when she did not write the words, amiga (on July 23, 1998, beginning of second grade), mucha (on January 19, 1999, middle of second) and galleta (March 11, 1999 middle of second), as a plurals. She also used plurals when she did not need them. On November 19, 1998 (beginning of second) she wrote the word, extraños instead of extraño. It should be noted, that these invented spelling occurred mostly during her second grade year, by her third grade she had mastered this skill.

Category 5. English words that are spelled with Spanish orthography.

Despite the fact that student 003 is surrounded by English every day, she prefers to read and write in Spanish. However, she does love to speak in English. She said that it is easier to speak English then write. She said that English writing does not make sense to her. Things are spelled the way they sound in English. At the beginning of her second grade year, she was tested for English proficiency with the IPT (Idea Proficiency Test) and scored at a level one, which means that she speaks little to no oral English. She also loves to watch English cartoons and movies at her neighbor’s (who speaks only English) house. As a result she learned quite a bit of
oral English and writes words that she feels she can write, however, she writes them using Spanish orthography. Thus, on two occasions (July 23 and October 23, 1998, beginning of second grade) she wrote the word, quarters as coras. When she wrote about playing with her Barbies on March 11, 1999 (middle of second grade), she spelled the word varvis. Student 003 did not let her limited knowledge of written English keep her from getting her point across. She simply used her knowledge of written language in Spanish and applied to writing in English. She did know to articulate what she wanted.

Category 6. Spellings that reflect community speech norm.

The Spanish spoken by student 003 and his family would be by most Spanish speakers considered to be from rural Mexico. Most children from small towns in Mexico are not provided with a public education. Student 003’s father had very little schooling and her mother completed elementary school. Often the Spanish spoken by people in rural areas is considered to be very informal or a dialect of Spanish and it is often reflected in their writing. A very common practice in this dialect is to sometimes change the pronunciation of the letter B in words to a G. So when you hear someone from a rural area you can often
tell how much schooling they have had. Student 003 has also reflected this Spanish in her writing. For example, at the beginning of her second grade she wrote the words, guena and guenas instead of buena and buenas, respectively. On February 17, 2000 (middle of third grade), she wrote the word, abuelita as qualita.

Another common practice from people of rural Mexico is to cut off syllable from words. They might just articulate the first couple of syllables of a word when they are talking. This was evident not only in Student 003's writing, but also in her speech. As can be seen on February 16, 1999 (middle of second grade), she left out the middle syllable in the word, allí and wrote afí. On September 28, 1999 (beginning of third grade), she omitted the last syllable from para and wrote pa instead.

Category 7. Spellings that reflect letter reversals.

In this category, Student 003 simply reversed the order of the last two letters in the word otra on February 17, 2000 (end of third grade). Whether she intended to spell the word as she did or whether she simply inadvertently switched the order of the two letters is unclear. This was the only reversal in the entire nineteen samples, which demonstrate that they are not common occurrences. This is incredible given that the total words
used in nineteen samples of writing across second and third grades was nine hundred forty-seven words.

**Category 8. Anomalies**

Throughout the two years study, student 003 made some invented spellings for which no reasonable explanation could be determined. On several instances she omitted the ending letter of the word and added a couple of R’s to words where one wasn’t needed. For example, she omitted the ending letters to the following words: jugar, (March 11, 1999, middle of second grade), matar (October 11, 1999, beginning of third grade) and despues (February 17, 2000, middle of third grade), which she wrote juga, mata, and despue, respectively. She also added an R to the word, alberca and came up with albrerca (January 19, 2000, middle of third grade).

**Student 004**

Student 004 was also born in Jalisco, Mexico. She came to the United States when she was a baby. Her parents did have schooling in Mexico. They both completed some high school, but did not graduate. Her parents are very supportive and instill in their daughter the importance of a good education. She lives in a neighborhood where many people speak Spanish, but there are a few who are English speakers only. She loves to read and write, but her
favorite subject is mathematics. She enjoys watching television in English, but she mostly watches cartoons, however, her favorite programs are the Spanish soap operas. She enjoys writing about what she sees on television and about what is happening in her life. She enjoys English and often gets frustrated when she can’t articulate what she wants to say in English.

Category 1. Spellings that reflect knowledge of letter names and/or sound letter correspondence.

Student 004 also had phonics instruction in both kindergarten and first grade. She possesses a strong knowledge of letter/sound correspondence and spells most words accurately. The majority of her invented spellings fell into this category; however, they were mainly concentrated to letters that made similar sounds. Children are taught that in Spanish the B and the V make similar sounds, and that the C sometimes has the sound of the letter S, as a result children often interchange them in their writing. Since Student 004 perceived the letters B and V to have the same sound she substituted them throughout her second and third grade year. As can be seen from her writing on July 23, 1998 (beginning of second grade), she substituted the letter B for V in the words nieves (she wrote niebes) and in the word divertí (she
wrote *diberti*). Also on January 15, 1999 (middle of second grade), she was also able to spell other high frequency words such as *voy* and *abrazo*, correctly. However, as is evidenced on September 24, 1999 (beginning of third grade), if a word was not a high frequency word she would still interchange the B and the V, as she did when she spelled *huviera* instead of *hubiera*. Again, evidence that she is relying on the phonetic hypothesis for unknown words.

As with the letters B and V, children often interchange the letters C and S because they are taught that the C sometimes makes the /s/ sound. On November 23, 1998 (middle of second grade), she wrote the word, *celebración* as *celebración*. On October 10, 1999 (beginning of third grade) she wrote the words, *dice* as *dise*, and *Cenicienta* as *Cenisienta*. In the middle of her third grade year, she was still interchanging the two letters. On November 14, 1999, she wrote the words, *cereal* as *serial* and the word, *emocionaras* as *emosionaras*.

Furthermore, children in primary language Spanish classes are taught that the letter H is silent. Therefore, most children will omit the letter until they have built a strong sight vocabulary or use the visual memory strategy. In other words, they simply have to memorize which words
contain the silent H. For example, Student 004 omitted the H in the word, habia on July 23, 1998 (beginning of second grade). Also, on February 16, 1999 (middle of second grade) she omitted the H in the following words: hace, hago, zanahoria and hay (she wrote ase, ago, zanaoria and ay, respectively). However, throughout the two year study she did use the H in high frequency words such as hermana, hermano, and hijos.

Category 2. Spellings that reflect use of phonetic categorization of speech sounds, focusing especially on place of articulation.

Within this category student 004 had many invented spellings, but the majority involved the substitution of one vowel for another. She might have interchanged the vowels because in Spanish, children may perceive that the vowels have the same point of articulation. Children believe this because when they say the vowels, they feel the sound of these letters produced in the back of their throats. For example, on September 21, 1998 (beginning of second grade), she spelled the word, pelota as peloto. On February 16, 1999 (middle of second grade), she spelled the word, mono, with the letter U instead of the letter O in the first syllable.
She also produced other invented spellings within this category such as substituting the nasals N and M, substituting the letters P and B, omitting vowels, and omitting nasals, but they were very scant.

**Category 3.** Spelling that suggest the use of a spelling strategy of exaggerated pronunciation.

As mentioned before, children are often taught in school to sound out words as a spelling strategy. Thus, they grow to rely on the phonetic hypothesis. Children can be heard during writing time sounding out words as they write. Students 004 only sounded out words when she was struggling with the conventional spelling of words. As a result, she only produced to invented spellings in this category. On October 23, 1998 (beginning of second grade), she spelled the word, *gue* and *guie* and on November 11, 1999 (beginning of third grade) she spelled the word, *sirenas* as *sirrenas*.

**Category 4.** Spellings that reflect individual language development.

Since all for students in this second grade class were still acquiring knowledge of written language, many of the invented spellings in this category were not as a result of a student’s creativity, but more as a sign of what the students still need to learn. As with any
language, children learn skills at various points in their development and children master skills at varying times. Although students had already been taught how to change nouns from singular to plural and when to use them, Student 004 still had not completely mastered this convention, as evident from her writing. On October 23, 1998 and October 1, 1999 (beginning of second and third grade respectively), she wrote the word, su (singular) instead of using the word, sus (plural). On March 10, 2000 (end of third grade) she wrote the word nombre (singular) instead of the word, nombres (plural). While she did have some problems using the plural forms of words, there were many instances when she did use them conventionally.

Category 5. English words that are spelled with Spanish orthography.

As noted earlier, Student 004 enjoyed learning English and thus using a great deal of English in her writing. However, many times she wrote what she knew, but used Spanish orthography. Student 004’s favorite place to visit is Disneyland. Many of her stories take place there and she loves to write about the time she went. On various occasions, she attempted to write the word, but she wrote it using Spanish orthography. She came up with the following invented spellings: Disneylandia on July 23, 1998
and Disneylandia on June 21, 1999. Also, on September 21, 1998 (beginning of second grade), she wrote about basketball and spelled it, basquebbol.

Category 6. Spellings that reflect community speech norm.

Student did not produce any invented spellings in this category.

Category 7. Spellings that reflect letter reversals.

In this category, Student 004 simply reversed the direction in which the lower case D is written and merely flipped it around and use a lower case B. She did this during her second grade year. However, when asked to spell some of the words aloud, she would spell the words conventionally with the letter D and not B. On October 1, 1999 (beginning of second grade), she wrote the words trabajo, dejaban and baile as tradajo, dejadan and daile, respectively. She also interchanged the order of two letters in the word, ahora and came up with haora. Whether she intended to spell the word as she did or whether she simply inadvertently switched the order of the two letters is unclear. These were the only types of reversals in the entire nineteen samples (1,204 words total), which demonstrate that they are not common occurrences.
Category 8. Anomalies

There were several instances in which Student 004 made some invented spellings for which no reasonable explanation could be determined. On October 23, 1998 (beginning of second grade), she wrote the word, bruja twice as buja; however, throughout the same writing sample she wrote the word correctly several times. On June 21, 1999 (end of second grade), she omitted the letter F in the word, fría and she omitted the second letter R in the word, programa. When she was asked to spell the same word later, she was able to do so. Thus, they were simply errors.

Invented and Conventional Spelling Rates Across Grades

As can be seen from Table 9 and Graph 1, Student 001 improved his conventional spelling both during his second and third grade years. Throughout his second grade year, he improved his conventional spelling; however, he did have some months in which his invented spelling rate increased. In his first sample (July 23, 1999), he spelled 53.8% of words conventionally and had 46.2% invented spellings out of a total of 26 words. The following month shows a decrease in the percentage of invented spellings and approximately a four percent improvement in his
conventional spelling rate. However, on October 30, 1998, his conventional spelling rate dropped to 26.9%. This occurred because Student 001 took more risk in his writing. That is, he attempted to spell many English words with Spanish orthography; thus, the increase is his invented spelling. For the next five writing samples (November-April), his spelling conventional spelling showed a marked, but steady improvement. His invented spelling rate maintained at about 18% and his conventional spelling rate maintained at about 82%. The last two writings samples showed another drop in conventional spelling. On May 14, 1999, he once again attempted to write many English words using Spanish orthography, as a result his invented spelling rate increased to 36.4%. The final month (June 21, 1999) of second grade, his invented spelling rate went down 2%, but still stayed slightly higher that his previous average of 18.8%. This was due to the increased number of invented spellings involving the nasal letters M and N. For the writing samples that were collected during his second grade year, he attempted to spell 383 words, of which, 105 were invented spellings; thus, giving him a conventional spelling rate of 72.6% and an invented spelling rate of 27.4%. 
Student 001's third grade year showed marked improvement from his second grade year (see Table 9 and Graph 2). He started his first sample for third grade, with a conventional spelling rate of 91.9% and an invented spelling rate of 8.1%. This showed remarkable improvement considering he had a conventional spelling rate of 72.6% and an invented spelling rate of 27.4% at the end of his second grade year. The following month (September 28, 1999), his conventionally spelling rate showed a drop to 78.3%. This was due to his increased number of invented spellings that involved substitutions of the letters S and Z (which have the same sound) and the substitutions of vowels. On October 14, 1999, his conventional spelling rate increased once again to 98% and his invented spelling rate dropped to only 2%. November 19, 1999, showed another drop. His conventional spelling rate decreased to 77.4% and his invented spelling rate increased to 22.6% from the preceding month. However, for the rest of the year, his conventional spelling rate stayed at about 86% and his invented spelling rate stayed at about 14%. For his third grade year's writing samples, he attempted to spell 594 words, of which, 82 were invented spellings. This gave him an invented spelling rate of 13.8% and a conventional spelling rate of 86.2%. In all nineteen writing samples,
Student 001 used 977 words, of which, 187 were invented spellings. This resulted in an average conventional spelling rate of 80.9% and an invented spelling rate of 19.1% for two years.

Graph 1. Student 001-Second Grade Invented and Conventional Spelling Rate
Table 9. Student 001’s Spelling Profile for Second and Third Grade

**Student 001-Second Grade**

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<td>10</td>
<td>1</td>
<td>14</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>12</td>
<td>14</td>
<td>82</td>
<td>187</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>37</td>
<td>46</td>
<td>52</td>
<td>62</td>
<td>50</td>
<td>76</td>
<td>93</td>
<td>72</td>
<td>106</td>
<td>594</td>
<td>977</td>
</tr>
<tr>
<td>Invented Spelling Rate</td>
<td>8.10%</td>
<td>21.70%</td>
<td>2.00%</td>
<td>22.60%</td>
<td>12.00%</td>
<td>14.50%</td>
<td>11.80%</td>
<td>16.70%</td>
<td>13.20%</td>
<td>13.80%</td>
<td>19.10%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>91.90%</td>
<td>78.30%</td>
<td>98.00%</td>
<td>77.40%</td>
<td>88.00%</td>
<td>85.50%</td>
<td>88.20%</td>
<td>83.30%</td>
<td>86.80%</td>
<td>86.20%</td>
<td>80.90%</td>
</tr>
</tbody>
</table>
Graph 2. Student 001-Third Grade Invented and Conventional Spelling Rate

As with Student 001, Student 002 also showed improvement in her conventional spelling rate during her second and third grade years (see Table 10 and Graph 3). She started off second grade with a conventional spelling rate of 84.2% and an invented spelling rate of 15.8% on her first writing sample (July 23, 1998). The following month (September 11, 1998), she had a decrease to 75.4% in her conventional spelling rate and an increase in her invented spelling rate (24.3%). This was a result of a lot of single errors involving substitution of graphemes B
for V, S for C, and ge for gue, addition of a vowel, substitution of vowels and omission of grapheme H, as well as, two exaggerated pronunciations. For the rest of her second grade year, she fluctuated between a conventional spelling rate of eighty percent to ninety percent. Notably this is a very high rate for conventional use. This demonstrates her knowledge of conventional orthography. In second grade, Student 002 used 326 words and only 43 were invented spellings. This gave her a conventional spelling rate of 86.8% and an invented spelling rate of 13.2%.

Graph 3. Student 002-Second Grade Inventèd and Conventional Spelling Rate
Table 10. Student 002's Spelling Profile for Second and Third Grade

**Student 002-Second Grade**

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Jul'98</th>
<th>Sep'98</th>
<th>Oct'98</th>
<th>Nov'98</th>
<th>Jan'99</th>
<th>Feb'99</th>
<th>Mar'99</th>
<th>Apr'99</th>
<th>May'99</th>
<th>Jun'99</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invented Spelling</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>43</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>19</td>
<td>33</td>
<td>15</td>
<td>27</td>
<td>37</td>
<td>70</td>
<td>48</td>
<td>21</td>
<td>35</td>
<td>21</td>
<td>326</td>
</tr>
<tr>
<td>Invented Spelling Rate</td>
<td>15.80%</td>
<td>24.30%</td>
<td>13.30%</td>
<td>11.00%</td>
<td>18.90%</td>
<td>7.10%</td>
<td>16.70%</td>
<td>4.80%</td>
<td>11.40%</td>
<td>9.50%</td>
<td>13.20%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>84.20%</td>
<td>75.70%</td>
<td>86.70%</td>
<td>89.00%</td>
<td>81.10%</td>
<td>92.90%</td>
<td>83.30%</td>
<td>95.20%</td>
<td>88.60%</td>
<td>90.50%</td>
<td>86.80%</td>
</tr>
</tbody>
</table>

**Student 002-Third Grade**

<table>
<thead>
<tr>
<th>Sample Date</th>
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<th>Sep'99</th>
<th>Oct'99</th>
<th>Nov'99</th>
<th>Jan'00</th>
<th>Feb'00</th>
<th>Mar'00</th>
<th>May'00</th>
<th>Jun'00</th>
<th>Total</th>
<th>2/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invented Spelling</td>
<td>8</td>
<td>7</td>
<td>14</td>
<td>6</td>
<td>5</td>
<td>18</td>
<td>6</td>
<td>8</td>
<td>1</td>
<td>73</td>
<td>116</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>42</td>
<td>40</td>
<td>80</td>
<td>56</td>
<td>36</td>
<td>71</td>
<td>75</td>
<td>89</td>
<td>77</td>
<td>566</td>
<td>892</td>
</tr>
<tr>
<td>Invented Spelling Rate</td>
<td>19.10%</td>
<td>17.50%</td>
<td>17.50%</td>
<td>10.70%</td>
<td>13.90%</td>
<td>23.90%</td>
<td>8.00%</td>
<td>9.00%</td>
<td>13.00%</td>
<td>12.90%</td>
<td>13.00%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>80.90%</td>
<td>82.50%</td>
<td>82.50%</td>
<td>89.30%</td>
<td>86.10%</td>
<td>76.10%</td>
<td>92.00%</td>
<td>91.00%</td>
<td>87.00%</td>
<td>87.10%</td>
<td>87.00%</td>
</tr>
</tbody>
</table>
Graph 4. Student 003-Third Grade Invented and Conventional Spelling Rate

During Student 002's third grade year, she consistently increased her conventional spelling rate throughout all nine samples (see Table 10 and Graph 4). She started the year with a conventional spelling rate of 80.9% and an invented spelling rate of 19.10%. For the next three writing samples we saw the conventional spellings rate go up consistently from 80.95 to 89.3%. On January 19, 2000 there was a slight drop to 86.1% due to the increased number of invented spellings involving the substitution of the two nasal letters N and M. The following month (February 24, 2000) had a drop of 10%. The
increased number of invented spelling in this sample resulted because of her continued substitution of the two nasal letters N and M. Both April and May, samples showed another sharp increase in her conventional spelling rate to 92% and 91%, respectively. The last month (June 15, 2000) her conventional spelling rate dropped again to 87%. In this case, her invented spelling errors consisted of substituting the letters B and V and the two nasal letters M and N. These two orthographic features pose challenges until the child memorizes the conventional usage and abandons the phonetic hypothesis. During third grade, she used 566 words. There were 73 invented spellings. This gave her an invented spelling rate of 12.9% and a conventional spelling rate of 87.1% for third grade. For both second and third grade years combined she used 892 words and 116 were invented spellings; thus, resulting in an average conventional spelling rate of 87% and an invented spelling rate of 13%.

Student 003, also showed marked improvement in her conventional spelling rate during her second grade year (See Table 11 and Graph 5). Her first writing sample (July 23, 1998), showed a conventional spelling rate of 78.3% and an invented spelling rate of 21.7%. Her next writing sample (September, 21, 1998), showed a decrease in her
conventional spelling rate to 72.5%. This was an invented spelling rate increase to 27.5%; this was due to numerous substitutions of the letters B and V, C and S, and Ll and Y, as well as the omission of the letter H. For the next two writing samples, her conventional spelling rate increased, but she showed another drop for the next two writing samples. On January 19, 1999, her conventional spelling rate decreased by 9.2%. This was due to her continued substitution of the letters M and N, and B and V. On February 16, 1999, her conventional spelling rate decreased once again to 67.7%. Once again she was substituting the letters M and N, B and V, and S and C. For the next four samples, her conventional spelling rate steadily increased with final conventional spelling rate of 92.7% and an invented spelling rate of 7.3% for June 21, 1999. For her second grade year, Student 003 used 338 words, 64 were invented spellings and she achieved an overall conventional spelling rate of 81.1% and an invented spelling rate of 18.9%.

During her third grade year, she also showed improvement in her conventional spelling rate (See Table 11 and Graph 6). For the first three months she had a conventional spelling rate of about 88% or 87%. On November, 23, 1999 she had an increase in her conventional
spelling rate of 92.6%, however, this was immediately followed by two 10% decreases in January and February. On January 19, 2000, her conventional spelling rate decreased to 82.5% and her invented spelling rate increase to 17.5%. Her increased invented spelling rate was mostly due to her increased substitutions of one vowel for another. On February 17, 2000, her conventional spelling rate was 72.1% and her invented spelling rate was 27.9%. The 10% increase in invented spellings was as a result of her continued substitution of vowels and the letters B and V and S and Z, as well as the omission of the nasal letter N and the silent H. The next two writing samples showed an almost 10% increase in conventional spelling rate; however, she decreased her conventional spelling rate once again for the final writing sample. On June 15, 2000, her conventional spelling rate was 87.9% and her invented spelling rate was 12.1%. During her third grade year, student 003 she used 609 words of which she only had 84 invented spellings. Her conventional spelling rate averaged 86.2% and her invented spelling rate was 13.8%. For both years combined, she used 947 words and she only had 148 invented spellings. Her conventional spelling rate for both years averaged 84.4% and her invented spelling rate was 15.6%. 
Table 11. Student 003's Spelling Profile for Second and Third Grade

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Jul'98</th>
<th>Sep'98</th>
<th>Oct'98</th>
<th>Nov'98</th>
<th>Jan'99</th>
<th>Feb'99</th>
<th>Mar'99</th>
<th>Apr'99</th>
<th>May'99</th>
<th>Jun'99</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invented Spelling</td>
<td>5</td>
<td>14</td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>10</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>64</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>23</td>
<td>51</td>
<td>35</td>
<td>23</td>
<td>26</td>
<td>34</td>
<td>56</td>
<td>27</td>
<td>22</td>
<td>41</td>
<td>338</td>
</tr>
<tr>
<td>Invented Spelling Rate</td>
<td>21.70%</td>
<td>27.50%</td>
<td>22.90%</td>
<td>17.40%</td>
<td>26.90%</td>
<td>32.30%</td>
<td>12.50%</td>
<td>11.00%</td>
<td>13.60%</td>
<td>7.300%</td>
<td>18.90%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>78.30%</td>
<td>72.50%</td>
<td>77.10%</td>
<td>82.60%</td>
<td>73.10%</td>
<td>67.70%</td>
<td>87.50%</td>
<td>89.00%</td>
<td>86.40%</td>
<td>92.70%</td>
<td>81.10%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Jul'99</th>
<th>Sep'99</th>
<th>Oct'99</th>
<th>Nov'99</th>
<th>Jan'00</th>
<th>Feb'00</th>
<th>Mar'00</th>
<th>May'00</th>
<th>Jun'00</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invented Spelling</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>17</td>
<td>13</td>
<td>6</td>
<td>11</td>
<td>84</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>53</td>
<td>57</td>
<td>56</td>
<td>94</td>
<td>57</td>
<td>61</td>
<td>75</td>
<td>65</td>
<td>91</td>
<td>609</td>
</tr>
<tr>
<td>Invented Spelling Rate</td>
<td>11.30%</td>
<td>12.30%</td>
<td>12.50%</td>
<td>7.40%</td>
<td>17.50%</td>
<td>27.90%</td>
<td>13.30%</td>
<td>10.00%</td>
<td>12.10%</td>
<td>13.90%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>88.70%</td>
<td>87.70%</td>
<td>87.50%</td>
<td>92.60%</td>
<td>82.50%</td>
<td>72.10%</td>
<td>82.70%</td>
<td>90.00%</td>
<td>87.90%</td>
<td>86.20%</td>
</tr>
</tbody>
</table>
Graph 5. Student 003-Second Grade Invented and Conventional Spelling Rate

Student 004’s first writing sample (July 23, 1999), in second grade started with a conventional spelling rate of 63.3% and an invented spelling rate of 36.7% (See Table 12 and Graph 7). In this sample, she had numerous invented spellings involving substitutions of the letters M and N and B and V, and she spelled English words with Spanish orthography. For the next five writing samples, her conventional spelling rate fluctuated between a high seventy percent and a low eighty percent. On March 10, 1999 she had a conventional spelling rate of a 100%.
Graph 6. Student 003-Third Grade Invented and Conventional Spelling Rate

For the final three months she maintained her conventional spelling rate in the nineties. During her second grade year, she used 473 words and only had 70 invented spellings. Her average conventional spelling rate for the year was 85.2% and her invented spelling rate was 14.8%.

For the first four months of her third grade year, her conventional spelling rate fluctuated between 80% and 90%. On January 19, 2000, her conventional spelling rate decreased to 70.6% and her invented spelling rate increased to 29.4%. She had an abundance of invented spellings involving the substitutions of letters D and V,
Table 12. Student 004’s Spelling Profile for Second and Third Grade

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Invented Spelling</td>
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<td>5</td>
<td>17</td>
<td>10</td>
<td>6</td>
<td>11</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>70</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>30</td>
<td>25</td>
<td>76</td>
<td>43</td>
<td>31</td>
<td>54</td>
<td>39</td>
<td>40</td>
<td>68</td>
<td>67</td>
<td>473</td>
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<td>Invented Spelling Rate</td>
<td>36.70%</td>
<td>20.00%</td>
<td>22.40%</td>
<td>23.30%</td>
<td>19.40%</td>
<td>20.40%</td>
<td>0.00%</td>
<td>5.00%</td>
<td>7.40%</td>
<td>4.50%</td>
<td>14.80%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>63.30%</td>
<td>80.00%</td>
<td>77.60%</td>
<td>76.70%</td>
<td>80.60%</td>
<td>79.60%</td>
<td>100.00%</td>
<td>95.00%</td>
<td>92.60%</td>
<td>95.50%</td>
<td>85.20%</td>
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</tbody>
</table>

<table>
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<tr>
<th>Sample Date</th>
<th>Jul’99</th>
<th>Sep’99</th>
<th>Oct’99</th>
<th>Nov’99</th>
<th>Jan’00</th>
<th>Feb’00</th>
<th>Mar’00</th>
<th>May’00</th>
<th>Jun’00</th>
<th>Total</th>
<th>2/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invented Spelling</td>
<td>6</td>
<td>5</td>
<td>25</td>
<td>7</td>
<td>10</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>9</td>
<td>77</td>
<td>147</td>
</tr>
<tr>
<td>Total Words Used</td>
<td>52</td>
<td>55</td>
<td>129</td>
<td>103</td>
<td>34</td>
<td>67</td>
<td>112</td>
<td>77</td>
<td>102</td>
<td>731</td>
<td>1204</td>
</tr>
<tr>
<td>Invented Spelling Rate</td>
<td>11.50%</td>
<td>9.00%</td>
<td>19.40%</td>
<td>6.80%</td>
<td>29.40%</td>
<td>27.90%</td>
<td>8.00%</td>
<td>5.20%</td>
<td>8.80%</td>
<td>10.50%</td>
<td>12.20%</td>
</tr>
<tr>
<td>Conventional Rate</td>
<td>88.50%</td>
<td>91.00%</td>
<td>80.60%</td>
<td>93.20%</td>
<td>70.60%</td>
<td>72.10%</td>
<td>92.00%</td>
<td>94.80%</td>
<td>91.20%</td>
<td>89.50%</td>
<td>87.80%</td>
</tr>
</tbody>
</table>
Graph 7. Student 004-Second Grade Invented and Conventional Spelling Rate

V and B, N and M, G and Ll, S and Z, and P and T. For the final four months of her third grade year she had an average conventional spelling rate in the nineties. Overall, for her third grade year she had an overall conventional spelling rate of 89.5% and an invented spelling rate of 10.5%. She used 731 words and 77 were invented spellings. For both her second and third grade years combined, she used 1,204 words and only 147 were invented spellings. She achieved an overall conventional
spelling rate of 87.8% and an invented spelling rate of 12.2% for both years.

Graph 8. Student 004-Third Grade Invented and Conventional Spelling Rate

Summary

It is evident from this two year study that the majority of students' invented spellings were as a result of their knowledge of letter names and sound/letter correspondence, as well as their knowledge of phonetic categorization. This is probably due to the fact that children are often given a great deal of phonics instruction. As a result, children use their vast
knowledge of phonics and the phonetic hypothesis as their sole strategy for spelling unfamiliar words. While the phonetic hypothesis can be an effective strategy for spelling, it does not always produce conventional spelling. This may sound like an irony since Spanish is supposed to be so phonetic. However, as one can see Spanish speaking children solely using the phonetic hypothesis invent Spanish orthography (B. Flores, personal communication, 2002). For this reason, children also need to be taught visual memorization strategies for those instances in which knowledge of phonics fails to produce conventional spelling.

Furthermore, while teachers often focus on what students spell incorrectly versus what they can spell conventionally, it was apparent from this study that the majority of the time students produced more conventional spelling than invented spellings. By looking at Tables 9-12, we can see that on the average students spelled conventionally at least eighty percent of the time.
CHAPTER FIVE

CONCLUSIONS AND IMPLICATIONS

Introduction

This study proposed to examine the invented spelling patterns that children create in their writing. Nineteen writing samples were collected for four Spanish speaking, proficient students. All the samples collected were first drafts of either journal entries or student generated stories. Each word was looked at to see if the student had spelled the word conventionally or if it was an invented spelling. The invented spellings were analyzed and categorized according to the possible strategy that the students used to create them. Hudeleson’s (1981) six categories of invented spelling were used to categorize the invented spellings that resulted in this study: 1. spelling that reflects knowledge of letter names, 2. spelling that reflects use of phonetic categorization of speech sound, 3. spelling that reflects exaggerated pronunciation, 4. spelling that reflects community speech patterns, 5. spelling that reflects individual language development, 6. spelling that uses English words that have become part of the Spanish of the local community (pp. 55-59). However, two additional categories were developed
in order to accommodate all the invented spellings that the students generated in this study. A seventh category for reversals was added as well as an eighth category, which accommodated anomalies.

Major Findings

In a study conducted by Temple (1979), he found that students' invented spellings were very systematic and not mere random guesses (p.1). He also concluded that a child's first attempts at spelling are based upon phonetic principles. Upon concluding this study, it was found that students invented spellings were also very systematic and that the majority were based on phonetic principles. It was because of their intense instruction in phonics that children relied mostly on "phonics" and the phonetic hypothesis to spell words. Most of the invented spellings created by the students in this study fell into the first two categories: 1. spelling that reflects knowledge of letter names and 2. spelling that reflects the use of phonetic categorization of speech sound. Each student in this study relied on what they had learned in phonics instruction to spell unfamiliar words. While this strategy does work it did not always produce conventional spelling.
Within the first category, spellings that reflect knowledge of letter names and sounds, students’ invented spellings dealt most with the substitution of letters that had the same sound. For example, all four students’ had numerous invented spellings dealing with the substitution of the letters B and V. Since most students are taught that these two letters make the same sound in Spanish, they often interchange the two letters. Students also had an abundance of invented spellings with the substitution of the letters C, Z and S. This is also due to the fact that children learn through phonics instruction that the C sometimes imitates the /s/ sound and that the Z in Spanish is also pronounced with the /s/ sound. Beers (1980) study on seventy-five first and second graders also found that students’ first attempts at spelling words relied heavily on the letter-name-sound correspondence strategy (p. 41). Furthermore, students also omitted the letter H in various words. Since the sound is silent in Spanish, students relied on phonics instruction to spell words. However, when they pronounced words with the silent H, they often wrote down the letter of the sound immediately after word. When spelling words with silent letters, it is better for student to rely on visual memorization strategies as opposed to phonics instruction. In fact, the children will
need to learn and use visual memory strategies to produce conventional spelling.

When looking at invented spellings that reflected the use of phonetic categorization, it was surprising to find that the most common type of invented spelling did not deal with the substitution of the letters M and N, instead it dealt with the substitution of one vowel for another. In Hudleson’s (1982) study, she found that students did, in fact, substitute the two nasals M and N (p. 60). However, the only invented spellings she found involved the deletion of vowels and not the substitution of vowels. All four students displayed this phenomenon. Upon careful analysis, however, children might be substituting one vowel for another because they perceive vowels to have the same point of articulation. When pronouncing vowels they can feel the production of sound coming from their throats and therefore interchange them.

One of the first zones of proximal development that teachers develop in the classroom for students is that of sounding words out in order to spell. Teachers can be heard during shared writing time, sounding words out in a cadence as she spells them on the board or on chart paper. When students, in turn, go to their desk to write you can hear them at their desk sounding words out as they spell.
Eventually, students do internalize what they have been taught and write quietly at their desk. However, they keep in mind what they have been taught and often revert back to only sounding out words as a strategy to the spelling of an unfamiliar word. While this strategy can produce conventional spelling, it is not always the case. Often students exaggerate the pronunciation of the word and thus spell them with extra letters. While this did occur in some of the students' writing samples in this case study, it was not a common occurrence.

In researching how children learn words, Bear et al. (1996) found that most of the words that children learn are learned in social contexts and thus "social forces exert a powerful influence on learning" (p. 1). There is no better proof of this phenomenon than categories five and six, which deal with English words spelled with Spanish orthography and spellings that reflect community speech norms. Despite the fact that the students in this study spoke very limited English, they still lived in a community in which they heard or saw a lot of English. Often, the four students in the classroom played with children who spoke only English and had learned English through the interaction with their English speaking friends. As a result, they learned many words and phrases
that they later tried to incorporate in their writing. For example, Student 001 wrote a journal entry about what he was going to do on Halloween. A friend had taught him the phrase, "Trick or treat? Give me something good to eat," therefore, he incorporated the phrase in his journal entry. However, he used a phrase that was not familiar to him and wrote it in language which he was knowledgeable. He wrote the phrase using Spanish orthography and came up with "truc o truui gui mi santen gu to yi."

Despite the fact that most of the students in this study were either born in or immigrated to the United States shortly after birth, their primary language is still Spanish and they are very limited in English. While they have spent little to no time in Mexico, many of their parents came from very rural towns in Mexico. Their parents had received little to no education because public schooling was not available. As a result, many of the people who immigrate to the United States speak a very informal Spanish. As we know, parents are the first teachers of children and thus whatever level of Spanish the parents speak will be that of the children. For instance, in many rural towns in Mexico people shorten words and may only pronounce certain syllables in a word. Thus, the word, para will be said pa. Many times they
substitute the grapheme B for G and instead of saying the word *bueno* they will say *gueno*. Some of the students produced such invented spellings, which proves that social forces influence learning. These are known as dialectical differences.

The last two categories used in this study are indicators that sometimes invented spellings are random. No reasonable explanation could be found for both the categories that involved letter reversals and anomalies. The invented spellings in these two categories seemed to be more as a result of a simple error. It is possible, that the students simply wrote the word too quickly or just forgot to put in certain letters. For the invented spellings that resulted in these two categories students were asked to spell the same words at a later date and had no trouble coming up with the conventional spelling. For example, student 004 spelled the word *bruja* as *buja*, but in the same writing sample spelled the word correctly several times.

Another surprising feature that arose in this study was the infrequency in which students developed invented spellings. For most months during their second grade year, the students had a conventional spelling rate of at least 70% or above. During their third grade year it increased
to a conventional spelling rate of at least 85% or above. Despite the fact that students did have some decreases in conventional spelling rate for some months, there were other months in which the students had a conventional spelling rate in the high ninety percents for several months in a row. This demonstrates that many times educators focus more on students' spelling errors as opposed to focusing on their spelling strengths. Despite the fact that students' had many invented spelling in this case study, they proved that they had already mastered many spelling conventions, which unfortunately, sometimes go unnoticed.

Implications

This study looked at various aspects of students' invented spellings, as well as the frequency in which they occurred over a two year time period. For the most part, students used conventional spelling, however, several categories of invented spellings surfaced. Upon looking at the data, the most prevalent patterns of invented spellings involved spellings that reflected letter names and sounds and phonetic categorization. This was as a result of direct phonics instruction. While phonics is an integral part of a balanced literacy program, teachers
need to be aware that many words do not follow the phonetic principles they teach. It is the responsibility of the teacher to be aware of the various patterns of invented spellings that their students produce in order to move them to conventional spelling. A teacher needs to be aware of the invented spellings that their students' produce and why the produce them, in order to set up mediated structures to move them to conventional spelling.

In early studies conducted by Zutell (1980), Henderson and Beers (1980), Chomsky 1971 and Hudelson (1981), it was found that spelling was a developmental skill and that the invented spellings that children produced were not random, but systematic attempts at conventional spelling. In all the studies conducted and in this case study, definite categories of invented spellings resulted. Most of which were based on phonetic principles. Thus, proving students rely on their knowledge of phonics to spell. Educators need to promote visual memorization strategies in addition to phonics instruction to promote conventional spelling. Visual memorization strategies which can be incorporated in the classroom are word studies, word banks, word notebooks, word sorts, spelling games, magnetic letters, and various other activities.
However, before any mediated structures can be used, teachers first need to assess their students writing to determine what patterns of invented spelling they are producing. In this case study, students were required to write in an interactive journal on a daily basis. As each student finished writing his/her entry, they would read what they had written to the teacher. The teacher, in turn, would say aloud her response to what the student wrote. In the response, the teacher would incorporate spelling skills that the student needed to develop. The interactive journal served several purposes: to make certain that the teacher was able to understand what the student wrote, to see if the student picked up on any of his/her spelling mistakes and to jot down any obvious patterns of invented spellings that the students produced. Once the teacher had met with all twenty students, she would use the notes taken to develop spelling mini-lessons for the students. For example, if the students were interchanging the letters B and V, she set up a word study involving the letters B and V. As a class, the students would give the teacher words that contained syllables with the letters B or V. She then conducted a mediated structure in which the students were given a syllable and
they had to find words that contained the syllable in an initial, medial and ending position (see figure 1).

Table 13. Word Search for the Syllables **Ba** and **Va**

<table>
<thead>
<tr>
<th>bacuna</th>
<th>Estabamos</th>
<th>silba</th>
</tr>
</thead>
<tbody>
<tr>
<td>vago</td>
<td>lavador</td>
<td>vuelva</td>
</tr>
</tbody>
</table>

The purpose of this mediated structure was to help students develop visual memorization strategies with the letters B and V by conducting a word search that contained these letters in different positions within a word.

Although it is important for teachers to provide students with mediated structures in order to move students from invented spelling to conventional spelling, it is far more important to allow students the freedom to explore their spelling. Children need various opportunities to put what they have learned to practice. If a child is required to develop conventional spelling immediately after a lesson, the child may use words that he/she is confident they can spell in order to avoid embarrassment or ridicule. Children need to be able to take risks in their writing and use words that they may not know how to spell. This allows teachers to take notes on what conventions the child needs to develop, so that he
or she can create lessons that address the conventions that need to be mastered. Teachers also need to allow children to share thoughts on how a word is spelled. Thus, when it is writing time it may not always be quiet. This allows children to take risks in their spellings and it allows them to see what spelling strategies their peers incorporate when spelling unfamiliar words. For example, in the class in which the case study was conducted, a child needed to know how to spell the word, because, so he asked if anyone knew how to spell the word. A girl in the class casually turned around and said, "spell it in Spanish, its be-ca-u-se. It's a lot easier. In English, the word is too hard to spell." The little girl in the class was simply using her knowledge of Spanish orthography to spell English words, however, from that point on the children in the class could spell the word because.

Questions for Further Study

This study analyzed the invented spellings of four Spanish speaking, proficient students during their second and third grade years. Hudelsons' (1981), six categories of invented spelling were used to identify the possible explanations for these spellings, as well as two
additional categories were created to accommodate all the invented spellings that the students produced. It was found that the vast majority of these invented spellings were based on the students' knowledge of phonetic principles. However, while phonetic principles often produce conventional spelling in Spanish, there are circumstances in which visual memorization strategies need to be incorporated into the classroom. The subjects in this study are now in fifth grade and have transitioned into English classes. It would be very beneficial to analyze their English spelling to see if the same patterns of invented spelling emerged in their English orthography as emerged in their Spanish orthography.

Conclusion

After conducting this case study it seems apparent to me that there are six major conclusions:

1. There are definite invented spelling patterns in students' writings. With overwhelming consistency all four students in this study relied on their knowledge of phonetic principles to spell words. The students produced the same types of invented spellings in both category 1 (spellings that reflect knowledge of letters
names and sounds) and category 2 (spellings that reflect the use of phonetic categorization). As can be seen from Table 1 most students invented spellings in category 1 involved the substitution of the graphemes B and V. While in category 2 all four students produced numerous invented spellings involving the substitution of one vowel for another. Thus, proving that the invented spellings that students produce are not random, but based on the phonetic principles that they have been taught in school.

2. I believe that as with writing, spelling is learned in a social context and thus should be taught in social situations. A child's desire to become a better speller is not based on the fact that teachers want them to spell conventionally, instead is it based on the desire to communicate more effectively with others. In order for students to become better writers and spellers they must be given various opportunities to communicate with others. They have to be able to take risk in their writing, as well as share what they have written with one another.
3. **Children should have the opportunity to defend their spelling strategies and amend what they know by listening to others.** Since phonetic principles do not always produce conventional spelling, students need to be given opportunities to discuss what spelling strategies they use when confronted with unfamiliar words. The students themselves can serve as role models for one another. For example, as stated previously, one student in the study pointed out to students that she used her Spanish as a spelling strategy to spell English words. As a result, the students in the class were successfully able to spell the word, because, conventionally.

4. **Teachers need to continue to provide children with a learning environment that promotes creativity and is accepting of children’s attempts at spelling unfamiliar words.** As with any other academic subject, spelling is a skill that develops over time. Children need to be encouraged to take risks and not be reprimanded or ridiculed for their invented spellings. Teachers need to provide students with various
spelling strategies that involve not only phonetic principals, but also strategies that involve visual memorization. As a result, teachers need to incorporate in their curriculum: word studies, word banks, word hunts, and various other activities that allow children to explore and play with words.

5. Furthermore, teachers also need to be aware that children’s learning does not only take place in the classroom, but also in their homes and in their communities. As was evident from this study, some of the invented spellings that children produced were a reflection of the communities in which they live. If the parents spoke dialectical Spanish, it was reflected in the students writing. For example, Student 003 spelled the word, buena as guena because in rural towns in Mexico (where her parents came from) that is the way the word is articulated. Children also hear English and Spanish within their communities and use what they already know to accommodate new knowledge. As a result children spelled words they heard in English with Spanish orthography. Thus, their invented
spellings will not only be a reflection of what they have learned in school, but also of what they experience in their homes and communities.

6. Finally and most importantly, I have found that most teachers, including myself, focus on what students cannot do as opposed to recognizing what they can do. I decided to conduct this study on spelling because I felt that my students were not spelling conventionally. However, I now realize that over seventy percent of the words spelled in this study were spelled conventionally and that by the end of the their third grade year the students were collectively spelling at an average of eighty five percent.

I hope that this study encourages teachers to take a closer look at their students' spelling and not only analyze what invented spellings are being produced, but also the quantity of words that their students are spelling conventionally. In addition, I strongly suggest that teachers set up activities that provide students with various opportunities for them to learn visual memorization strategies and explore a multitude of words through various literacy activities such as reading, writing, interactive journals, daily message, etc. As Bear
et al. (1996) stated, spelling is learned through social forces and not individually. "Like spoken vocabularies, written words are learned in context. Whether through shared book experiences, lap reading, or bedtime stories, written words appear in a social setting and social forces provide the impetus to learn them" (p.2).
APPENDIX A

TRANSCRIPT FOR STUDENT 001
Transcript 1

001J7-23-98

Student spelling  Conventional  Classification

yo  jugue  substitution of grapheme ge for gue
con  hermano  omission of grapheme h
mi  juguetes  substitution of grapheme ge for gue
car  carrera  substitution of grapheme r for rr
bic  bien  omission of grapheme n
res  resio  omission of grapheme i
gusto  le  substitution of grapheme d for l
m  hermanito  omission of grapheme h
y  también  omission of graphemes m and e
gusto  eso  exaggerated pronunciation of s
gue  que  substitution of grapheme g for q
gugamos  jugamos  substitution of grapheme g for j

Invented spelling rate: 12/26=46.2%
Conventional Spelling rate: 53.80%

001J9-21-98

Student spelling  Conventional  Classification

yo  fui  substitution of grapheme c for s
a
la
caca  casa  substitution of grapheme c for s
de
la
miga  amiga  omission of grapheme a
de
mi
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<th>Invented spelling rate:</th>
<th>8/26=30.8%</th>
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<tr>
<td>Conventional Spelling rate:</td>
<td>69.20%</td>
</tr>
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</table>

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<th>Student spelling</th>
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</thead>
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<tr>
<td>A mi</td>
<td>A mi</td>
<td></td>
</tr>
<tr>
<td>me gusta</td>
<td>me gusta</td>
<td></td>
</tr>
<tr>
<td>Halloween</td>
<td>Halloween</td>
<td></td>
</tr>
<tr>
<td>porque</td>
<td>porque</td>
<td></td>
</tr>
<tr>
<td>dan</td>
<td>dan</td>
<td></td>
</tr>
<tr>
<td>muchos</td>
<td>muchos</td>
<td></td>
</tr>
<tr>
<td>dulce</td>
<td>dulces</td>
<td>omission of grapheme s</td>
</tr>
<tr>
<td>yo me a vistir de payaso</td>
<td>me</td>
<td>omission of grapheme e</td>
</tr>
<tr>
<td>m voy a pintra la cara de colores</td>
<td>pinentar</td>
<td>reversal of graphemes a and r</td>
</tr>
<tr>
<td>tabien</td>
<td>tambien</td>
<td>omission of grapheme m</td>
</tr>
</tbody>
</table>
a
contar
los
dulces
mis
hermanos
se
van
substitution of grapheme b for v
a
vistir
substitution of grapheme b for v
lo
mismo
que
substitution of grapheme co for que
mi
se
van
substitution of grapheme b for v
a
pintar
reversal of graphemes a and r
la
cara
y
vamos
substitution of grapheme b for v
a
decir
truc
trick
or
English words spelled with Spanish orthography
treat
English words spelled with Spanish orthography
give
English words spelled with Spanish orthography
me
English words spelled with Spanish orthography
santen
something
English words spelled with Spanish orthography
gu
good
to
English words spelled with Spanish orthography
yi
eat
English words spelled with Spanish orthography
voy
a
comer
dulce
Invented spelling rate: 19/26=73.1%
Conventional Spelling rate: 26.90%

001J11-19-98
Student spelling
yo
estaba
siendo
una
Conventional
haciendo
Classification
omission of grapheme h and sub. s for c
casa
para
mis
hermanos
y
yo
también
y
jugué
con
mis
hermanos
y
fui
a
ser
un
carro
para
mis
hermanos
tenían
se
le
di
argo
de
tomar

Invented spelling rate: \( \frac{7}{32} = 21.9\% \)
Conventional Spelling rate: \( 78.10\% \)

001J1-19-99

Student spelling	Conventional	Classification

yo	un
día	me
encontre
un
penny
y
un
anillo
tome
lo
lleve
a la casa milla
y luego los fui a la tienda para compra
mucha cosa y luego lo fuimos a la casa de losotros

Invented spelling rate: 7/37=18.9%
Conventional Spelling rate: 81.10%

001SS2-16-99

Student spelling Conventional Classification
En el inbierno invierno substitution of grapheme b for v
yo boy voy substitution of grapheme b for v
hacer una
casa de hielo
y un mono
de nieve hasta
el
<table>
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<tr>
<th>cielo</th>
<th>corremos</th>
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</tr>
</thead>
<tbody>
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<td>en</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nieve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rapido</td>
<td>rapido</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>yo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>le</td>
<td></td>
<td></td>
</tr>
<tr>
<td>puse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ropa</td>
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</tr>
<tr>
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<td>zapatos</td>
<td>substitution of grapheme s for z</td>
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<tr>
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<td></td>
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<tr>
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</tr>
<tr>
<td>un</td>
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<tr>
<td>sobrero</td>
<td>sombrero</td>
<td>omission of grapheme m</td>
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<tr>
<td>ojos</td>
<td>ojos</td>
<td>substitution of grapheme g for j</td>
</tr>
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<tr>
<td>manos</td>
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<td>y</td>
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<tr>
<td>pies</td>
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Invented spelling rate: 7/37=18.9%
Conventional Spelling rate: 81.10%

### 001.J3-10-99

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<td>ver</td>
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<td></td>
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<tr>
<td>que</td>
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</tr>
<tr>
<td>estaba</td>
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<tr>
<td>arriba</td>
<td>arriba</td>
<td>substitution of grapheme r for rr</td>
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<tr>
<td>del</td>
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<td></td>
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<td>techo</td>
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<tr>
<td>era</td>
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</table>
un gato chiquito y luego los fuimos a la casa de losotros y bimos tele en la casa de losotros se trataba que un pallaso era un polecia se bistilla como un pallaso y bailaba aciba trucos y tabien jugaba con los nifios y corria resio con

| nosotros | substitution of grapheme l for n |
| vimos | substitution of grapheme b for v |
| nosotros | substitution of grapheme l for n |
| payaso | substitution of grapheme ll for y |
| policía | substitution of grapheme e for i |
| vestía | |
| payaso | substitution of grapheme ll for y |
| hacia | dialect |
| también | omission of grapheme m |
| jugaba | omission of grapheme a |
Invented spelling rate: 13 /70=18.6%
Conventional Spelling rate: 81.40%

001J4-27-99

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<td>omission of grapheme m</td>
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<td>herridos</td>
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muertos
porque
si
juele
que
se
quemen
y
la
famila
se
queden
y
orando
toda
la
famila
de
el
que
se
murio

substitution of grapheme j for h

omission of grapheme i

sustitution of graphemes o for a and r for rr

accepted without accent

Invented spelling rate: 10/62=16.1%
Conventional Spelling rate: 83.90%

0015-14-99

Student spelling
Conventional
Classification

aora
ahora
omission of grapheme h

va
se
hacer
Language Development

el
ayscri
ice-cream
English words spelled with Spanish orthography

pari
party
English words spelled with Spanish orthography

asta
hasta
omission of grapheme h

la
tarde
asa
hasta
omission of grapheme h and t

el
lutimo
ultimo
reversal of graphemes l and u

recreo

Si
platicamos
mucho

no
vamos
tener el pari de nieve i si no platicamos si bamos tener aycri pari luego

English words spelled with Spanish orthography

i si bamos tener

substitution of grapheme i for y

vamos

substitution of grapheme b for v

ice-cream party

English words spelled with Spanish orthography

Invented spelling rate: 12/33 = 36.4%

Conventional Spelling rate: 63.60%

0016-21-99

Student spelling Conventional Classification

yo fui a la tienda para con prar comprar aburjesa hamburguesa

substitution of grapheme n for m

muy grande

omission of graphemes h,m,u and sub. j for g

también grandes como la anburgesa hamburguesa
también grandes como la anburgesa

también grandes como la anburgesa

substitution of grapheme n for m

hamburguesa
gue

om. of grapheme h and sub. n for m and ge for

luego

hamburguesa

luego

hamburguesa

luego

hamburguesa

luego

hamburguesa

nos

substitution of grapheme l for n

a comer

116
nive  
nive 

nieve  
nieve 

omission of grapheme e

demon  

tambien  

también 

substitution of grapheme n for l

tambien  

también 

substitution of grapheme n for m

Invented spelling rate:  

10 /34=29.4%

Conventional Spelling rate:  

70.60%

001J7-27-99

Student spelling  

Conventional  

Classification

yo  

fui  

al  

dentista  

a  

que  

me  

limpiaran  

limpiaran  

substitution of grapheme n for m

los  

dientes  

en  

cel  

dentista  

tambien  

también  

accepted without accent

me  

sacaron  

sangre  

a  

mi  

mucho  

no  

dolio  

mucho  

luego  

me  

picaron  

con  

una  

avuja  

abuja  

substitution of grapheme v for b

no  

duele  

hi  

y  

addition of grapheme h and sub of i for y
se 
siente  
cuando  
me  
pica  

Invented spelling rate: 3/37=8.1%  
Conventional Spelling rate: 91.90%  

<table>
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<th>Conventional</th>
<th>Classification</th>
</tr>
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<tbody>
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<td>yo</td>
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<td></td>
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<tr>
<td>se</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cortar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>el secate</td>
<td>zacate</td>
<td>substitution of graphemes e for a and s for z</td>
</tr>
<tr>
<td>me enseño</td>
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<td></td>
</tr>
<tr>
<td>mi papá a cortar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>el secate con la maquina ora</td>
<td>zacate</td>
<td>substitution of graphemes e for a and s for z</td>
</tr>
<tr>
<td>lo puedo cortar el secate en la casa todo lo corto aora puedo cortar todo el secate para que</td>
<td>zacate</td>
<td>substitution of graphemes e for a and s for z</td>
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118
Invented spelling rate: 10/46=21.7%
Conventional Spelling rate: 78.30%
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<th>Classification</th>
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</thead>
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<tr>
<td>vengan para que se divert a mucha si quiere algo no mas plaude y un robot bien</td>
<td>vengan</td>
<td>addition of grapheme u</td>
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<tr>
<td></td>
<td>diviert a</td>
<td>omission of grapheme e</td>
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<tr>
<td></td>
<td>m as</td>
<td>accepted without accent</td>
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<tr>
<td></td>
<td>aplaude</td>
<td>omission of grapheme a</td>
</tr>
<tr>
<td></td>
<td>viene</td>
<td>substitution of grapheme b for v</td>
</tr>
</tbody>
</table>
que
es
bueno
y
les
da
dinero
el
show
el
que
esta
en
Riverside
es
de
caros  carros  substitution of grapheme r for rr
en
la
izquierda
esta
la
tienda
de
jugetes  juguetes  substitution of grapheme ge for gue
los
jugetes
asen  hacen  omission of grapheme h and sub of s for c
magia  màgia  accepted without accent
si
ustedes  ustedes  omission of grapheme s
baylan  bailan  substitution of grapheme y for i
sin
nadie
los  les  substitution of grapheme o for e
ase  hacen  omission of grapheme h and sub of s for c
una
mujer
de
berda  verdad  substitution of grapheme b for v and omission of
d
ol  al  substitution of grapheme o for a
ombre  hombre  omission of grapheme h

Invented spelling rate:  14/62=22.6%.
Conventional Spelling rate:  77.40%
Melisa y su hermana y mire a un niño que yoro tenía diez años una doctora lo miro yorando luego a mi hermano le picaron no yoro tenía siete años ya se quiro después de mi

001J1-19-00

Student spelling  Conventional  Classification

yo  fui  al  doctor  para  me  yo  mire a  Melisa  Melissa  omission of grapheme s  y  su  hermana  yo  mire a  un  niño  que  yoro  tenía  diez  años  una  doctora  lo  miro  yorando  luego  a  mi  hermano  le  picaron  no  yoro  tenía  siete  años  ya  se  quiro  después  de  mi

lloró  substitution of grapheme y for ll  llorando  substitution of grapheme y for ll  lloró  substitution of grapheme y for ll  curó  substitution of grapheme q for c
<table>
<thead>
<tr>
<th>Student spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td>ayer</td>
<td>substitution of grapheme ll for y</td>
</tr>
<tr>
<td>aller</td>
<td>hice</td>
<td>omission of grapheme h and sub of s for c</td>
</tr>
<tr>
<td>mire</td>
<td></td>
<td>accepted without accent</td>
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<tr>
<td>caricaturas</td>
<td>caricaturas</td>
<td>omission of syllable ca</td>
</tr>
<tr>
<td>desperec</td>
<td>desperte</td>
<td>substitution of grapheme c for t</td>
</tr>
</tbody>
</table>

Invented spelling rate: 6/50 = 12%
Conventional Spelling rate: 88%
vine
a
la
escuela
los
dieron
un
rayte
a
mi
y
mi
hermana
luego
ya
lochaba
lunchaba
dialect
y
me
comi
comí
accepted without accent
casi
toda
substitution of grapheme o for a
mi
comida
luego
me
vino
en
la
clase
luego
omission of grapheme e
vino
aqui
me
ise
hice
omission of grapheme h and sub of s for c
mi
casa
de
niebe
nieve
substitution of grapheme b for v

Invented spelling rate: 11/76=14.5%
Conventional Spelling rate: 85.50%

001J3-10-00

Student spelling | Conventional | Classification
--- | --- | ---
yo | ayer | substitution of grapheme ll for y
aller | hice | omission of grapheme h and sub of s for c
mi tarea a cuatro de la tarde y la termine a las cuatro triente luego binimos a la Open House luego de Open House fuimos a la Walmart Despues a la casa los fuimos en el carro luego miramos televisión tambien también tome algo de tomar luego de
eso
me
fui
a
dormir
en
mi
cama
y
me
dormí
soñé
accepted without accent

sueñe
de
que
yo
estaba
manejiando
un
carro
que
era
de
color
verde
con
rojo
y
morado
si
me
gusta
el
carro
como
le
daba
corri
bien
recio
que
la
le
substitution of grapheme a for e
de
di
substitution of grapheme e for i
mas
más
accepted without accent

Invented spelling rate: 11/93=11.8%
Conventional Spelling rate: 88.20%
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<th>Classification</th>
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<tr>
<td>mucho</td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
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<tr>
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<td>cuando</td>
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<td></td>
</tr>
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<td>substitution of grapheme b for v</td>
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<td>dejo</td>
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<td></td>
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<td>jugar</td>
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<tr>
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<td>jugar</td>
<td>addition of grapheme u</td>
</tr>
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</table>
a
mi
también
me
gusta
juguar
kickball
porque
no
mas
tenemos
que
patiar
la
pelota
ariva
y
la
tienen
que
cachar
la
pelota
cuando
la
patean
ariba
Invented spelling rate: 12/72=16.7%
Conventional Spelling rate: 83.30%

001J6-15-00

Student spelling Conventional Classification
ayer yo a
fui a
la biblioteca biblioteca omission of grapheme i
a regresar unos libros
que no
abiamos habiamos omission of grapheme h
regresado
<table>
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<td>no</td>
<td></td>
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<td>mas</td>
<td>más</td>
<td>accepted without accent</td>
</tr>
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<td>porque</td>
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<td></td>
</tr>
<tr>
<td>eso</td>
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</tbody>
</table>

129
lo que comen ellos de plantas que están bien grandes son hojas que comen o plantas si me justo gusto me si me juego gusto

la movie que escogimos no estaba miedosa la movie de los dinosaurios que bolaban y comen plantas que les justa gusta a ellos porque son animales

Invented spelling rate: 14/106=13.2%
Conventional Spelling rate: 86.80%
APPENDIX B

TRANSCRIPT FOR STUDENT 002
Transcript 2

002J7-23-98

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<th>Classification</th>
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<td>ya</td>
<td>sabe</td>
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<tr>
<td>Susana</td>
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<td>cual</td>
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<td></td>
</tr>
<tr>
<td>es</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>casa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yo</td>
<td>también</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>tambien</td>
<td></td>
<td></td>
</tr>
<tr>
<td>se</td>
<td></td>
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</tr>
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<td></td>
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<tr>
<td>es</td>
<td></td>
<td></td>
</tr>
<tr>
<td>su</td>
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<td></td>
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<tr>
<td>casa</td>
<td>nunca</td>
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</tr>
<tr>
<td>voy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>su</td>
<td></td>
<td></td>
</tr>
<tr>
<td>casa</td>
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</tr>
</tbody>
</table>

Invented Spelling rate: 3/19 = 15.8%
Conventional Spelling rate: 84.20%

002SS9-11-98

<table>
<thead>
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<th>Classification</th>
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</thead>
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</tr>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>tengo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>una</td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
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<td>edad</td>
<td>addition of grapheme a</td>
</tr>
<tr>
<td>edada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>buena</td>
<td></td>
<td></td>
</tr>
<tr>
<td>como</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>papá</td>
<td></td>
<td></td>
</tr>
<tr>
<td>y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mamá</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
comida  
faboria  
es  
una  
amburgesa  
con  
chicen  
resbaladeros  
y  
jugar  
perros  
mi  
mamá  
tiene  
buena  
edad  
edad  
addition of graphemes a and d

Invented Spelling rate: 8/33=24.3%
Conventional Spelling rate: 75.70%

002J10-23-98
Student Spelling  Conventional  Classification
me gusta  venir  substitution of grapheme i for e
vinir  todos  los  dias  para  aprender  y  estudiar  mucho  es  muy  bonito  venir  substitution of grapheme b for v

Invented Spelling rate: 2/15=13.3%
Conventional Spelling rate: 86.70%

002J11-19-98
Student Spelling  Conventional  Classification
Mi mamá  me
compro
una
faldas
me
ceda
para
ir
da
la
iglesia
cuando
se
termina
jugamos
mi
prima
y
yo
sino
bien
entonces
yo
con
Jannette

Invented Spelling rate: 3/27 = 11%
Conventional Spelling rate: 89%

002J1-15-99

Student Spelling  Conventional  Classification
a
mi
me
pico
la
doctora
me
dolio
mucho
también
en
el
dedo
con
un
pidrio
mucho
dolió
también

accepted without accent
accepted without accent
substitution of grapheme p for v
que  pica  tan  feo
  también  también  accepted without accent
la  bacuna  vacuna  substitution of grapheme b for v
porque  le  dan
fuerte  a
la  inyequion  inyección  substitution of graphemes q for c and s for c

Invented Spelling rate:  7/37=18.9%
Conventional Spelling rate:  81.10%

002SS2-16-99

Student Spelling  Conventional  Classification
En  el  inbierno  invierno  substitution of grapheme b for v
yo  quiero  esciar  esquiar  substitution of grapheme c for qu
en  la  nieve  hacer  un
mono  de  nieve  suave
para  jugar  con
el  mono  de  nieve  con
la  gorra  muy
negra
pero bonita y con su bufanda con la zanaoria zanahoria omission of grapheme h con los botones y la boca aí ahí omission of grapheme h va estar con su mamá y su papá en su casa propia muy bonita con las lamparas sillones camas mesas frutas bejetales vegetales substitution of graphemes b for v and j for g como si fueran de verdad verdad substitution of graphem b for v

Invented Spelling rate: 5/70=7.1%
Conventional Spelling rate: 92.90%
<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ami me compraron dos oberoles unos de pantalon y otro de shorts uno de pooh y otro de piolin tambien unos sapatos negros el oberol de piolin era negro el otro era azul los tengo bien nuebcitos tambien los zapatos no mas que estan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- overalls: English words spelled with Spanish Orthography
- pantalón: accepted without accent
- shorts: English words spelled with Spanish Orthography
- Pooh: English words spelled with Spanish Orthography
- violín: substitution of grapheme p for v
- también: accepted without accent
- zapatos: substitution of grapheme s for z
- overall: English words spelled with Spanish Orthography
- violín: substitution of grapheme p for v
- nuevecitos: substitution of grapheme b for v
- también: omission of grapheme b
- más: accepted without accent
- están: accepted without accent
en
la
casa

Invented Spelling rate: 8/48=16.7%
Conventional Spelling rate: 83.30%

002J4-26-99
Student Spelling  Conventional  Classification
Yo desde el sabado quería binir a la escuela el domingo me dijó mi mamá que el lunes iba a entrar

Invented Spelling rate: 1/21=4.8%
Conventional Spelling rate: 95.20%

002J5-14-99
Student Spelling  Conventional  Classification
Yo boy a ir a la montaña magica para la

voy substitution of grapheme b for v

mágica accepted without accent

<table>
<thead>
<tr>
<th></th>
<th>Invented</th>
<th>Conventional Spelling rate:</th>
<th>4/35=11.4%</th>
<th>88.60%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>002J6-21-99</strong></td>
<td>Student Spelling</td>
<td>Classification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yo</td>
<td>por</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mi</td>
<td>casa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bi</td>
<td>vi</td>
<td>substitution of grapheme b for v</td>
<td></td>
<td></td>
</tr>
<tr>
<td>una</td>
<td>mariposa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dos</td>
<td>flores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>un</td>
<td>arbol</td>
<td>accepted without accent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nubes</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>un</td>
<td>cerco</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tambien</td>
<td>también</td>
<td>accepted without accent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Otra semana con mi mamá mi papá también con Janet ya ban a ser como ocho beces que vamos a ir a la montaña magica acierta: 88.60%
bi vi substitution of grapheme b for v
una casita de campaña

Invented Spelling rate: 2/21=9.5%
Conventional Spelling rate: 90.50%

002J7-28-99

Student Spelling Conventional Classification
yo ayer fui con mi papá y mi mamá
aya para que mi papá se hiciero
si siudedano ciudadano
ico tambien le dieron un sertificado una bendere tambien habie muche gente que se metia despues todos

allá substitution of grapheme y for ll
omission of grapheme h and sub. o for a
substitution of graphemes s for c and e for a
omission of grapheme h and sub. c for z
accepted without accent
substitution of grapheme s for c
substitution of grapheme e for a
accepted without accent
substitution of grapheme e for a
substitution of grapheme e for a
accepted without accent
se
metieron
mi
papá
también
también
accepted without accent

Invented Spelling rate: 8/42=19.1%
Conventional Spelling rate: 80.90%

002J9-24-99

Student Spelling | Conventional | Classification
hora | ahora | omission of grapheme a
yo | yo | dialectical
voy | bebé | accepted without accent
a | vamos | substitution of grapheme b for v
ir | ir |
al | el |
hospital | martes |
debieras | para |
der | ver |
bebe | al |
y | ber |
bamos | al |
a | bebe |
ir | y |
el | para |
martes | deberas |
pero | para |
no | ber |
fuimos | al |
yo | bebe |
pienso | y |
que | bamos |
está | a |
bien | ir |
chicito | el |
bonito | deberas |
yo |医务 |
se | para |
que | para |
boy | para |
a | para |
quererlo | para |
much | para |

141
<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional Spelling</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>anque aunque</td>
<td>omission of grapheme u</td>
<td></td>
</tr>
<tr>
<td>sea nui primito</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Invented Spelling rate:** 7/40 = 17.5%

**Conventional Spelling:** 82.50%

**002SS10-1-99**

<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional Spelling</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>hace mucho tiempo en un castillo uana princesa era bien traviesa el principe tenia a un gato bien malo un dia el principe encontro una princesa pero si gato no la queria el principe pensaba que era</td>
<td>principe principe princesa principe</td>
<td>substitution of grapheme z for c substitution of grapheme s for c substitution of grapheme s for c</td>
</tr>
</tbody>
</table>

142
El gato hizo un cocinero.

El príncipe que era la princesa un día pronunció alcanzó a ver al gato destrozando el castillo después de la princesa y el príncipe se casaron el gato se hizo bueno y se casó con una gata.

Inventor Spelling rate: 14/80 = 17.5%

Conventional Spelling rate: 82.50%
parque
de
los
diamantes
vengan
al
parque
de
los
diamantes
se
van
a
divertir
la
joyería
esta
está
accepted without accent
atrás
del
parque
traigan
a
su
familia
para
ver
cristales
diamantes
oro
plata
también
también
accepted without accent
pueden
ir
al
March
con
una
lancha
a
la
dercha
derecha
omission of grapheme e
de
la
entrada
ay
hay
omission of grapheme h
una  
caga  
de  
diamantes  
ay  
agua  
limpia  
ay  
en  
la  
caga  
caja  
substitution of grapheme g for j

Invented Spelling rate: 6/56=10.7%
Conventional Spelling rate: 89.30%

<p>| 002.J1-19-00 |
|-------------------|-------------------|-------------------|
| Student Spelling  | Conventional      | Classification    |
| yo                |                   |                   |
| fui               |                   |                   |
| a                 |                   |                   |
| la                |                   |                   |
| casa              |                   |                   |
| de                |                   |                   |
| mi                |                   |                   |
| tia               | tía               | accepted without accent |
| Blanca            |                   |                   |
| ella              |                   |                   |
| me                |                   |                   |
| compro            | compro            | substitution of grapheme n for m |
| bien              |                   |                   |
| muchas           |                   |                   |
| cosas             |                   |                   |
| llenos            |                   |                   |
| de                |                   |                   |
| regalos           |                   |                   |
| en                |                   |                   |
| navidad           | navidad           | substitution of grapheme b for v |
| ella              |                   |                   |
| le                |                   |                   |
| compro            | compro            | substitution of grapheme n for m |
| todo              |                   |                   |
| a                 |                   |                   |
| mi                | mi                | substitution of grapheme n for m |
| ella              |                   |                   |
| casi              |                   |                   |
| no                |                   |                   |
| tiene             |                   |                   |</p>
<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ayer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bi</td>
<td>vi</td>
<td>substitution of grapheme b for v</td>
</tr>
<tr>
<td>una</td>
<td>película</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>pelicula de</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felix el</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tenia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mucha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>terro</td>
<td>terror</td>
<td>omission of grapheme r</td>
</tr>
<tr>
<td>pero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>el</td>
<td></td>
<td></td>
</tr>
<tr>
<td>era</td>
<td></td>
<td></td>
</tr>
<tr>
<td>muy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rico</td>
<td></td>
<td></td>
</tr>
<tr>
<td>despues</td>
<td>después</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>me fui a dormir</td>
<td>dormer</td>
<td>substitution of grapheme n for m</td>
</tr>
<tr>
<td>con a las</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pero yo no me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>queria ir a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a dormir con mi</td>
<td>dormer</td>
<td>substitution of grapheme n for m</td>
</tr>
<tr>
<td>nana</td>
<td>mamá</td>
<td>substitution of grapheme n for m</td>
</tr>
</tbody>
</table>

Invented Spelling rate: 5/36 = 13.9%
Conventional Spelling rate: 86.10%
a
su

Cama

Substitution of grapheme n for m

me
tuve

que
dormir
en
el
cielo
mi
hermana
se
con
mi
nana
arriba
de
la
cana
mi
hernanito
chicisto
se
dormio
conmig
en
el
suelo
le
gusto
dormirse
ally
en
el
suelo

Invented Spelling rate: 18/71=23.9%
Conventional Spelling rate: 76.10%

002J3-10-00

Student Spelling Conventional Classification

yo
ayer
fui
con
mi
tía
mañana
a
lo
mejor
bamos
vamos
substitution of grapheme b for v
a
ir
pero
si
mi
papá
no
asc
cosas
para
poder
ir
pero
los
bamos
vamos
substitution of grapheme of b for v
tener
que
ir
muy
tempranito
como
a
las
en
punto
aya
allá
substitution of grapheme y for ll
estan
mis
primos
estan
todos
alla
allá
accepted without accent
yo
voy
substitution of grapheme b for v
boy
a
berlo
verlo
substitution of grapheme b for v
porque
todos
son
buenos
son
Yo los quiero mucho a todos de allá allá accepted without accent porque siempre me puedo quedar en sus casa como siempre porque me quiero todos

Invented Spelling rate: 6/75=8%
Conventional Spelling rate: 92%

002J5-15-00
Student Spelling Conventional Classification
yo ayer le di a mi mama mamá accepted without accent lo que hize hice substitution of grapheme z for c aqy aquí substitution of grapheme y for i le gusto que también accepted without accent le compre otra
cosa que también le compró otra cosa que también le gustó. Le di un abrazo y un beso. Dijo que muchas gracias. Me ba

va a llevar al parque ahora pero yo no quiero porque me dijo que me iba a comprar. Todo los que yo quería
le
dije
que
no
se
gastar
su
dinero
porque
ella
tiene
que
comprarse
algo
para
ella
no
para
mi
yo
quiero
tanto
mi
mamá

Invented Spelling rate: 8/89=9%
Conventional Spelling rate: 91%

002J6-15-00

<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ayer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fui</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>la</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tienda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>para</td>
<td></td>
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</tr>
<tr>
<td>que</td>
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</tr>
<tr>
<td>compraran</td>
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<tr>
<td>papitas</td>
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<tr>
<td>de</td>
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</tr>
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<td>chile</td>
<td></td>
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</tr>
<tr>
<td>queso</td>
<td></td>
<td></td>
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<tr>
<td>y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>de</td>
<td></td>
<td></td>
</tr>
<tr>
<td>todas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
maneras
jugos
tambien	también	accepted without accent
sodas
porque
me
dio
dolares
para
mi
no
mas	más	accepted without accent
a
Janeth
le
dieron
dolares
no
mas	más	accepted without accent
ella
se
compro
una
falda
con
una
camiseta
alla	allá	accepted without accent
en
el
swap
meet
de
Chula
Vista
era
la
camiseta
de
azul
bien
bonito
era
con
blanco
pero
yo
<table>
<thead>
<tr>
<th>Words</th>
<th>Correct Spelling</th>
<th>Rate</th>
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<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>compre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>una</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blusa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>un</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pantalon</td>
<td>pantalón</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>tambien</td>
<td>también</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>estos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>zapatos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>que</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tengo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>puestos</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Invented Spelling rate: 1/77 = 13%

Conventional Spelling rate: 87%
APPENDIX C

TRANSCRIPT FOR STUDENT 003
Transcript 3

**003J7-23-98**

<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>llamo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carmelita</td>
<td></td>
<td></td>
</tr>
<tr>
<td>otras</td>
<td>otras</td>
<td>overexaggerated pronunciation</td>
</tr>
<tr>
<td>tres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>amigas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>son</td>
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</tr>
<tr>
<td>Susana</td>
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</tr>
<tr>
<td>Ana</td>
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</tr>
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<td>Karen</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>mis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>amiga</td>
<td>amigas</td>
<td>omission of grapheme s</td>
</tr>
<tr>
<td>favorita</td>
<td>favoritas</td>
<td>omission of grapheme s</td>
</tr>
<tr>
<td>juego</td>
<td></td>
<td></td>
</tr>
<tr>
<td>con</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ella</td>
<td>ellas</td>
<td>omission of grapheme s</td>
</tr>
<tr>
<td>les</td>
<td></td>
<td></td>
</tr>
<tr>
<td>doy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>coras</td>
<td>quarters</td>
<td>English words spelled with Spanish orthography</td>
</tr>
</tbody>
</table>

Invented Spelling rate: 5/23 = 21.7%
Conventional Spelling rate: 78.30%

**003J9-21-98**

<table>
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</table>
Invented Spelling rate: $\frac{14}{51}=27.5\%$
Conventional Spelling rate: $72.50\%$

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003SS10-23-98
Invented Spelling rate: 8/35 = 22.9%
Conventional Spelling rate: 77.1

003J11-19-98
Student Spelling: Conventional Classification
yo era una niña que jugaba con sus primas pero yo estaba en mi casa pero yo las extraños mucho a las primas

Conventional Spelling: estaba en mi casa pero yo las extraños mucho a las primas

Invented Spelling rate: 4/23 = 17.4%
Conventional Spelling rate: 82.6

003J1-19-99
Student Spelling: Conventional Classification
yo
tengo  
mucho  
amigas  
en  
se  
llama  
Diana  
juega  
muchas  
conmigo  
com  
julio  
conmigo  
en  
la  
cafetería  
luego  
nos  
bamos  
a  
casa  
entonces  
juego  
atos  
conmigo  
en  
la  
cafetería  
luego  
nos  
bamos  
a  
casa  
entonces  
juego  
atos  

Invented Spelling rate: 7/26=26.9%
Conventional Spelling rate: 73.1

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<th>Student Spelling</th>
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<th>Classification</th>
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<td>Mi nombre Carmelita en invierno hace mucho frio y cae</td>
<td>nombre invierno hace mucho frio y cae</td>
<td>substitution of grapheme n for m substitution of grapheme b for v substitution of grapheme s for c substitution of grapheme b for f substitution of grapheme y for c</td>
</tr>
<tr>
<td>Hay casas calientes en las</td>
<td></td>
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</tr>
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montañas
blancas
puedes
jugar
ai
allí
omission of grapheme ll
y
aser
hacer
omission of graphemes h and sub of s for c
un
mono
de
nieve
nieve
overexaggerated pronunciation
blanca
pe
pero
omission of graphemes r and o
no
ir
sercas
cercas
substitution of grapheme s for c
del
lago

Invented Spelling rate: 10/34=32.3%
Conventional Spelling rate: 67.70%

003J3-11-99
Student Spelling | Conventional | Classification
--- | --- | ---
Yo
ayer
fui
a
la
casa
de
un
una
omission of grapheme a
amiga
que
se
llama
Cathy
Jugamos
a
las
escondidas
pero
nos
cansamos
de
juga
jugar
omission of grapheme r
luego
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<tr>
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<td>Barbies</td>
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</tr>
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<td>entonces</td>
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<td></td>
</tr>
<tr>
<td>su</td>
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</tr>
<tr>
<td>mamá</td>
<td></td>
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</tr>
<tr>
<td>nos</td>
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<td></td>
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<td>dio</td>
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<td>galletas</td>
<td>omission of grapheme s</td>
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<tr>
<td>con</td>
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<td>la</td>
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<td></td>
</tr>
<tr>
<td>mesa</td>
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</tr>
<tr>
<td>luego</td>
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<tr>
<td>llego</td>
<td>llegó</td>
<td>accepted without accent</td>
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<tr>
<td>su</td>
<td></td>
<td></td>
</tr>
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<td>papá</td>
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<td></td>
</tr>
<tr>
<td>de</td>
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<td>Cati</td>
<td>Cathy</td>
<td>English words spelled with Spanish Orthography</td>
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<tr>
<td>y me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fui</td>
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<td>a</td>
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<td>la casa</td>
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<td>acostamos</td>
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<tr>
<td>mucho</td>
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</table>

Invented Spelling rate: \( \frac{7}{56} = 12.5\% \)
Conventional Spelling rate: 87.50%
que
este
adentro
de
la
casa
y
pura
para
substitution of grapheme u for a
jugar
con
el
mi
hermana
va
substitution of grapheme b for v
poder
jugar
mucho
rato

Invented Spelling rate: 3/27=11%
Conventional Spelling rate: 89%

003J5-14-99
Student Spelling Conventional Classification
Yo fui al pari party English words spelled with Spanish orthography
de amiga Dulce ella siempre jugaba substitution of graphemes g for j and v for b
gugava conmigo en la Henry era bien buena y también accepted without accent
y gugava jugava substitution of graphemes g for j and v for b
con Lesli
Invented Spelling rate: 3/22 = 13.6%
Conventional Spelling rate: 86.40%

003J6-21-99

<table>
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<th>Student Spelling</th>
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<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>A mi me compraron una alberca ahora me voy a meter a bañar con mi hermana a la mej o se mete mi papá y mi mamá voy a invitar a mi prima a tadas todas</td>
<td></td>
<td>omission of grapheme h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>substitution of grapheme a for o</td>
</tr>
<tr>
<td></td>
<td></td>
<td>omission of grapheme r</td>
</tr>
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</table>
Invented Spelling rate: 3/41 = 7.3%
Conventional Spelling rate: 92.70%

003J7-26-99

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<td>estudiante</td>
<td>substitution of grapheme o for u</td>
</tr>
<tr>
<td>jugar mucho en la escuela porque me gusta yo estudio mucho en la escuela</td>
<td>hago</td>
<td>omission of grapheme h</td>
</tr>
<tr>
<td>lo que yo puedo aser en la escuela pero siempre me dan tarea dice</td>
<td>hacer</td>
<td>omission of grapheme h and sub of s for c</td>
</tr>
<tr>
<td>mi primo que la tarea es porque no</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

163
la
terminamos
en
la
clase
luego
es
tiempo
que
vayomos
vayamos
substitution of grapheme o for a
a
casa

Invented Spelling rate: 6/53=11.3%
Conventional Spelling rate: 88.70%

| 003J9-28-99 |
|---|---|---|
| Student Spelling | Conventional | Classification |
| yo | película | accepted without accent |
| voy | Chucky's | English words spelled with Spanish Orthography |
| a | Chucky's | |
| ver | a | |
| la | las | |
| película | películas | accepted without accent |
| Chuckies | luego | |
| Bride | voy | |
| a | a | |
| las películas | la | |
| Chucky's | las | |
| de los | de | |
| Flinstons | cuando | |
| cueando | | |
| se | | |
| acaba | | |
| me | | |
| voy | | |
| a | | |
| ir | | |
| a | | |
| la | | |
| casa | | |
jugar
en
la
cocinita
cocinita
nos
vamos
a
la
tienda
a
compra
vaso
porque
mi
tío
dijo
que
compromos
vasito
pa
para
omission of syllable ra
dar
le
a
los
niños
un
vacito
vasito
substitution of grapheme c for s

Invented Spelling rate: 7/57 = 12.3%
Conventional Spelling rate: 87.70%

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<tr>
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<td>vez</td>
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</tr>
<tr>
<td>rey</td>
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<td></td>
</tr>
<tr>
<td>vivian</td>
<td></td>
<td></td>
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<td>en</td>
<td></td>
<td></td>
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<tr>
<td>un</td>
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</table>
castillo y el dragón se llevó a la princesa a un cueva luego vino el rey le dijo el rey que lo iba a matar luego le dijo la princesa que no lo mates es solamente un amigo no te ba aser hacer nada

Invented Spelling rate: 7/56=12.5%
Conventional Spelling rate: 87.50%
el mundo
de las sirenas
es un parque de diversiones
hay muchos juegos para que se diviertan vengan pronto al parque de diversiones
el juego de las sirenas se encuentra a la izquierda de la entrada hay mucha agua y te puede llevar a México
Hay sirenas en el agua para que las mires en medio de el lago esta el barco de platicar ahí puedes platicar con las sirenas y puedes desirles muchas cosas el barco de miedo esta atras de la tienda hay muchas fantasmas te asutan
mucho
ahi

Invented Spelling rate: 7/94 = 7.4%
Conventional Spelling rate: 92.60%

**003J1-19-00**

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<td>dije</td>
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Invented Spelling rate: 10/57=17.5%
Conventional Spelling rate: 82.50%

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que
ay
un
mostro
después
se
lo
camio
a
la
niña
que
estaba
en
la
casa
después
se
fueran
a
atar
parte
después
se
fuero
my
lejos
a
bibir
alla
y
se
fuero
a
la
casa
de
gualita
abuelita
dialect

Invented Spelling rate: 17/61=27.9%
Conventional Spelling rate: 72.10%

003J3-10-00
Student Spelling Conventional Classification
yo
tengo
una
alberca
grande
en
mi
casa
yo
voy
da
enbitar
invitar
substitution of graphemes b for v and e for i
da
unas
amigas
da
mi
alberca
yo
no
enbito
invito
substitution of graphemes b for v and e for i
da
ms
mis
omission of grapheme i
amigas
amigos
substitution of grapheme a for o
solamente
una
vez
da
ambitada
invitado
substitution of graphemes a for i and o and m for n
da
un
niño
a
lado
de
mi
casa
eso
fue
la
última
accepted without accent
vez
substitution of grapheme s for z
que
ambitada
invitado
substitution of graphemes a for i and o and m for n
da
un
niño
a
mi
alberca
lla
no
a
enbitado
a
nadie
mas
a
mi
alberca
que
ten
en
mi
casa
orita
luego
no
puede
echame
un
brico
a
la
alberca

Invented Spelling rate: 13/75=13.3
Conventional Spelling rate: 82.70%

003J5-25-00

Student Spelling  Conventional  Classification

yo  voy  a
v
to
mesical  Méxicali  accepted without accent
a
jugar
con
miss
otros
primos
al
burro
y
al

173
trigo
se
huga
a
si
se
ponen
un
calsetín
en
la
cabeza
luego
hagaras
un
palo
y
los
tienes
que
tachar
con
el
palo
para
que
esa
persona
sea
el
burro
pero
a
mi
nunca
me
tachan
con
me
hagaco
y
los
tiro
al
suelo
para
que
juega
omission of grapheme e and sub of h for j
calzetín
substitution of grapheme s for c
agarras
addition of grapheme h and sub. of r for rr
nos
substitution of grapheme l for n
agacho
addition of grapheme h and sub. of c for ch
Invented Spelling rate: 6/65 = 10%
Conventional Spelling rate: 90.00%

<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>quiero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ir</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td></td>
<td></td>
</tr>
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<tr>
<td>amiga</td>
<td></td>
<td></td>
</tr>
<tr>
<td>par</td>
<td>por</td>
<td>substitution of grapheme a for o</td>
</tr>
<tr>
<td>eso</td>
<td></td>
<td></td>
</tr>
<tr>
<td>quiero</td>
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<td></td>
</tr>
<tr>
<td>ir</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>la</td>
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<td>confio</td>
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</tr>
<tr>
<td>en</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ella</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cundo</td>
<td>cuando</td>
<td>omission of grapheme a</td>
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ase
algo
bien
y
ella
confía
en
mi
cuando
algo
bien
y
quiero
que
ella
también
benga
a
mi
casa
para
que
juegemos
a
la
cosinita
yo
quiero
que
ella
también
benga
para
que
mi
mama
la
cuide
yo
quiero
que
yo
sea
so
amiga
favorita

hace
omission of grapheme h and sub. of s for c
confía
accepted without accent
cuando
omission of grapheme a
hago
omission of grapheme h
también
accepted without accent
venga
substitution of grapheme b for v
juguemos
addition of grapheme e and sub of ge for gue
cocinita
substitution of grapheme s for c
también
accepted without accent
venga
substitution of grapheme b for v
mamá
accepted without accent
quiero
addition of grapheme e
su
substitution of grapheme o for u
Invented Spelling rate: 11/91 = 12.1%
Conventional Spelling rate: 87.90%
APPENDIX D

TRANSCRIPT FOR STUDENT 004
Transcript 4

004J7-23-98
Student Spelling                  Conventional       Classification
yo                              Disneilandia       English words spelled with Spanish orthography
fui                             Disneilandia       accepted without accent
a                              también            substitution of grapheme m for n
Disneylandia                     también            accepted without accent
y                              nos                substitution of grapheme m for n
D tambiem                       nos                substitution of grapheme m for n
os                              perdimos          substitution of grapheme m for n
perdimos                        en                substitution of grapheme m for n
Disneylandia                     en                substitution of grapheme m for n
y                              Disneylandia       English words spelled with Spanish orthography
me                             Disneylandia       accepted without accent
meti                           metí                accepted without accent
a                              a                 substitution of grapheme m for n
la                              la                 substitution of grapheme m for n
casa                          casa               substitution of grapheme m for n
de                              de                 substitution of grapheme m for n
Blaca                        Blanca            omission of grapheme n
niebes                          Nieves            substitution of grapheme b for v
y                              Blanca            omission of grapheme n
abia                           Nieves            substitution of grapheme b for v
una                            Blanca            omission of grapheme n
truga                          Bruja            substitution of t for b
y                              bruja            substitution of t for b
me                             bruja            substitution of t for b
asustó                          asustó            accepted without accent
y                              divertí            substitution of grapheme b for v
me                             divertí            substitution of grapheme b for v
diberti                         divertí            substitution of grapheme b for v
mucho                          divertí            substitution of grapheme b for v

Invented Spelling rate: 11/30=36.7%
Conventional Spelling rate: 63.30%

004J9-21-98
Student Spelling                  Conventional       Classification
el                             viernes            ommission of grapheme n
viernes                        viernes            substitution of grapheme b for v
y                              yo                 substitution of grapheme b for v
me                             me                 substitution of grapheme b for v
fui                             fui                 substitution of grapheme b for v
a                              a                 substitution of grapheme b for v
la
playa
y
fui
con
mi
familia
y
juge
jugue
a
la
peloto
pelota
tabien
tambien
al
basquebol
basketball
y
juge
jugue
me
familia

Invented Spelling rate: 5/25=20%
Conventional Spelling rate: 80%

Student Spelling
avía
una
vez
tres
brujas
que
querían
a
unos
niños
y
las
mamás
no
estaban
en
la
casa
y
la
buja
las

004SS10-23-98

Classification
omission of grapheme h and sub. v for b
substitution of grapheme s and z

accepted without accent
tres
bujas
salieron
de
su
casa
y
los
niños
tinian
miedo
y
las
bujas
benian
en
camino
y
las
niños
antes
que
binieran
las
bujas
los
niños
le
llamaron
a
sus
mamas
y
las
mamas
benian
en
camino
y
primero
llegaron
las
mamas
las
brujas
se
fueron
tenian
substitution of grapheme i for e
brujas
omission of grapheme r
venian
substitution of grapheme b for v
los
substitution of grapheme a for o
que
overexaggerated pronunciation
vinieran
substitution of grapheme b for v
brujas
omission of grapheme r
mamás
accepted without accent
mamás
accepted without accent
venian
substitution of grapheme b for v
mamás
accepted without accent
<table>
<thead>
<tr>
<th>a</th>
<th>sus</th>
<th>su</th>
<th>omission of grapheme s</th>
</tr>
</thead>
<tbody>
<tr>
<td>casa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lla</td>
<td>ya</td>
<td>ya</td>
<td>substitution of grapheme ll for y</td>
</tr>
<tr>
<td>no</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bolbieron</td>
<td>volvieron</td>
<td>substitution of b for v</td>
<td></td>
</tr>
</tbody>
</table>

Invented Spelling rate: 17/76 = 22.4%
Conventional Spelling rate: 77.60%

004SS11-23-98

<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>cuand yo me desperto a mi me la celebración en Navidad mi mama me da un abrazo porque es mi cumplanos me papa me da una computadora voy a pedir una munéca para jugar</td>
<td>cuando yo me desperto a mi me la celebración en Navidad mi mama me da un abrazo porque es mi cumpleaños me mi papá me da una computadora voy a pedir una munéca para jugar</td>
<td>omission of grapheme o substitution of grapheme s for c substitution of grapheme b for v accepted'without accent substitution of grapheme e for c and sub of n for ñ substitution of grapheme e for i accepted without accent</td>
</tr>
</tbody>
</table>
con ella mi mama hace tamales muy buenos substitution of grapheme b for v

Invented Spelling rate: 10/43=23.3
Conventional Spelling rate: 76.70%

004J1-15-99
Student Spelling Conventional Classification
yo mañana me voy a ir a
Corona porque es el
cumpleaños de mi tía a
mari pero no se
cuantos años cumpre pero yo le voy a
preguntar a mi mama mamá accepted without accent

Invented Spelling rate: 6/31=19.4%
Conventional Spelling rate: 80.60%

<table>
<thead>
<tr>
<th>Student Spelling</th>
<th>Conventional</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yo en el invierno me visto muy abrigadita porque ase mucho frío y también ago un mono de nieve Le pomgo primero la lola grande Después la mediana luego la chicita luego le la nariz de zanaoria las manos son de palo se</td>
<td>invierno</td>
<td>omission of grapheme n</td>
</tr>
<tr>
<td></td>
<td>hace</td>
<td>omission of grapheme h and sub of s for c</td>
</tr>
<tr>
<td></td>
<td>también</td>
<td>accepted without accent</td>
</tr>
<tr>
<td></td>
<td>hago</td>
<td>omission of grapheme h</td>
</tr>
<tr>
<td></td>
<td>mono</td>
<td>substitution of grapheme u for o</td>
</tr>
<tr>
<td></td>
<td>pongo</td>
<td>substitution of grapheme m for n</td>
</tr>
<tr>
<td></td>
<td>bola</td>
<td>substitution of grapheme l for b</td>
</tr>
<tr>
<td></td>
<td>chiquita</td>
<td>substitution of grapheme c for qu</td>
</tr>
<tr>
<td></td>
<td>nariz</td>
<td>substitution of grapheme s for z</td>
</tr>
<tr>
<td></td>
<td>zanahoria</td>
<td>omission of grapheme h</td>
</tr>
</tbody>
</table>
los
encuentran
en
la
nieve
También
también
accepted without accent
ay
hay
omission of grapheme h
colotes
coyotes
substitution of grapheme ll for y
y
pueden
morderte

Invented Spelling rate: 11/54 = 20.4%
Conventional Spelling rate: 79.60%

004J3-10-99
Student Spelling Conventional Classification
yo
ayer
fui
al
paíque
con
mi
hermana
Juliana
a
jugar
A
ir
a
buscar
pelotitas
para
mi
hermano
Armando
pero
yo
las
quiero
pero
mi
mamá
me
dijo
que
esas
pelotas
eran
para
bebes
como
mi
hermano
Armando

Invented Spelling rate: 0%
Conventional Spelling rate: 100%

004J4-26-99
Student Spelling

Conventional

Classification

yo
en
las
vacaciones
y
la
tarea
pero
no
la
ise
toda
porque
nos
fui
a
Mexico
con
porque
se
yva
a
morir
mi
no
me
dejo
quedar
con
mi

tia
porque

hice
omission of grapheme h and sub s for c

México
accepted without accent

iva
substitution of graphemes y for i and v for b

tía
accepted without accent
tine tiene omission of grapheme e
muchos niños que cuidar son sus hijos

Invented Spelling rate: 2/40=5%
Conventional Spelling rate: 95%

004J5-14-99
Student Spelling Conventional Classification
el otro viernes voy a ir al swapmeet
y me voy a comprar un trajesito de floresitas esta bien bonito también también accepted without accent
voy a comprar una mochila porque mi hermanito me la rompió omission of grapheme m
cuando omission of grapheme n
me estaba bañando en la regadera mi mamá
le preguntó porque lo hizo
el le dijo porque ella me abiento mis carros pero no cierto entonces por eso voy a comprar una mochila de esmeralda

Invented Spelling rate: 5/68=7.4%
Conventional Spelling rate: 92.60%

004J6-21-99
Student Spelling Conventional Classification
yo el sábado tuve una fiesta
pero
no
era
mía
era
de
mi
hermano
Armando
no
había
piñata
nada
mas
pastel
regalos
sopa
pero
no
me
gusta
la
sopa
porque
la
carne
estaba
muy
ría
y
no
havia
asador
por
eso
no
me
comí
la
carne
para
el
día
de
los
padres
le

| accepted without accent | accepted without accent | substitution of grapheme v for b | omission of grapheme f | accepted without accent | accepted without accent |
regale el libro la foto la corbata fuimos a Disneylandia

Invented Spelling rate: 3/67=4.5%
Conventional Spelling rate: 95.50%

004J7-27-99 Student Spelling

Conventional Classification

yo ayer me fui con mi amiga Leslie a comer a la casa de Judith después nos fuimos al parque pero no creas que nos fuimos solas nos
fuimos
con
la
mamá
de
Judith
si
nos
uviera
llevabola
mamá
de
Judith
nos
uvieran
revado
no
uviera
benido
a
la
escuela

Invented Spelling rate:  6/52=11.5%
Conventional Spelling rate:  88.50%

004J9-24-99
Student Spelling  Conventional  Classification
yo  ayer
vi  soñadoras
pero  mi
mamá  no
me
dejo  dejó  accepted without accent
ver  soñadoras
arriba  la
pude  que
ver
Hace mucho tiempo

Invented Spelling rate: 5/55=9%
Conventional Spelling rate: 91%

004SS10-1-99
Student Spelling Conventional Classification
Hace mucho tiempo
el papá de Cenicienta
murio Cenicienta
y Cenicienta
iso hizo
el trabajo trabajo
la casa
y las hermanas su mamá siempre
se
ivan iban
dejadan dejaban
a Cenicienta Cenicienta en
la casa
asiendo haciendo el quehacer
sus amigos
los ratones le dice
todo lo que saben lo que
dice
las dos hermanas y
su mamá

eyos ellos substitution of grapheme ll for y
ollerón oyeron substitution of grapheme ll for y
que se
se iban a
a ir
au a addition of grapheme u
daile baile substitution of grapheme d for b
Cenicienta Cenicienta substitution of grapheme s for c
les dijeron substitution of grapheme o for e
que si pero si encuentra un vestido bonito los ratones le encontraron un collar una tela

dijo que si pero si encuentra un vestido bonito los ratones le encontraron un collar una tela

Cenicienta se encontró a su aba azul le dio

roja substitution of grapheme a for o
Cenicienta Cenicienta substitution of grapheme s for c
encontró accepted without accent

omission of grapheme h and sub b for d
su bestido vestido substitution of grapheme b for v
su carro
y se fue al baile no sabia por donde irse el principe estaba bailando luego el principe la veo vio substitution of grapheme e for i
y baila bailó substitution of grapheme a for o
con ella luego omission of grapheme e
a la se ba va substitution of grapheme b for v

Invented Spelling rate: 25/129=19.4%
Conventional Spelling rate: 80.60%

004SS11-1-99
Student Spelling Conventional Classification
el mundo mundo substitution of grapheme o for u
de las sirenas es un parque de
<table>
<thead>
<tr>
<th>Word</th>
<th>Corrected Word</th>
<th>Notes</th>
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<td></td>
</tr>
<tr>
<td>te</td>
<td></td>
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</tr>
<tr>
<td>va</td>
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</tr>
<tr>
<td>encantar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cuando</td>
<td></td>
<td></td>
</tr>
<tr>
<td>estás</td>
<td></td>
<td></td>
</tr>
<tr>
<td>allí</td>
<td>allí</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>te</td>
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<tr>
<td>emocionarás</td>
<td>emocionarás</td>
<td>substitution of graphemes for c</td>
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<td>izquierda</td>
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<tr>
<td>la</td>
<td></td>
<td></td>
</tr>
<tr>
<td>entrada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>esta</td>
<td>está</td>
<td>accepted without accent</td>
</tr>
<tr>
<td>la</td>
<td></td>
<td></td>
</tr>
<tr>
<td>recamara</td>
<td></td>
<td></td>
</tr>
<tr>
<td>es</td>
<td></td>
<td></td>
</tr>
<tr>
<td>una</td>
<td></td>
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</tr>
<tr>
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</tr>
<tr>
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<td>overexaggerated pronunciation</td>
</tr>
<tr>
<td>nadan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>por</td>
<td></td>
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<tr>
<td>el</td>
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puedes comprar cereal
sopa es un lugar grande
hay mucha gente en medio de la entrada esta
la casa de las sirenas
la casa de las sirenas es muy grande verde
y juegan a las escondidas
vengan muy pronto
es esperería el mundo de las sirenas

197
Invented Spelling rate: \( \frac{7}{103} = 6.8\% \)
Conventional Spelling rate: \( 93.20\% \)

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Invented Spelling rate: \( \frac{10}{34} = 29.4\% \)
Conventional Spelling rate: \( 70.60\% \)

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<tbody>
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</tbody>
</table>
me gusta mucho hacer tarea porque las multiplicaciones son muy fácil porque son como las sumas dividir es lo mismo que multiplicaciones casi todo es lo mismo mi mamá me puso ayer a estudiar las tablas del cuatro para pasar a Rafael pero Rafael creo que
nos
va
a
pasar
porque
el
se
sabe
todas
las
tablas
y
yo
nada
mas
más
accepted without accent
algunas
de
las
tablas

Invented Spelling rate: 2/67=3%
Conventional Spelling rate: 97%

004j3-10-00
Student Spelling
yo
ahora
voy
a
ir
la
casa
de
mis
primos
porque
mi
tía
tía
accepted without accent
Mari
nos
va
a
quevar
a
ver
la

Conventional
Classification
reversal of graphemes h and a
substitution of grapheme qu for ll
una noche en el cine pero mi tía nos va a pagar el boleto a todo la familia somos personas en mi familia pero, lla van a ser personas porque mi mamá va a tener un nuevo bebé no sabemos como se va
a
llamar
porque
todos
se
estan
peliando
por
nombre
nombres
esos
nombres
son
Junior
Ruben
Jerardo
Gerardo
por
ultimo
ultimo
Chistofor
Christopher
pero
mi
dijo
que
se
va
a
llamar
Oscar
porque
ella
y
mi
papá
quieren
que
se
llame
Oscar
porque
todos
los
de
mas
más
estaba
estaban
omission of grapheme s
substitution of grapheme j for g
accepted without accent
English words spelled with Spanish orthography
accepted without accent
omission of grapheme n

Invented Spelling rate: 9/112=8%
Conventional Spelling rate: 92%
Student Spelling

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porque
no
quiero
faltar
a
la
escuela
ningún
día
más
mis
amigas
me
cuentan
la
novela
si
no
la
veo
ellas
me
la
cuentan
porque
ellas
también
son
noveleras
y
igual
yo

Invented Spelling rate: 4/77=5.2%
Conventional Spelling rate: 94.80%
Armando va a cumplir años yo le voy a regalar el tatin del diablo mi mamá le va a regalar dólares mi hermanito chiquito que se llama Omar le va a regalar un puppy de Blues Clue pero lo que más le va a justar el lo
que mi papá le va a regalar le va a reglar un juego del Nintendo y el juego Tarzan para el día de los padre le vamos a regalar a Diosito yo le voy a regalar el cuadro de Diosito el osito de la escuela

regalar  omission of grapheme a
jugó  addition of grapheme e
día  accepted without accent
padres  omission of grapheme s
Invented Spelling rate: 9/102=8.8%
Conventional Spelling rate: 91.20%
REFERENCES


