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PATTERNS OF INVENTED SPELLING IN SPANISH

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A Thesis

Presented to the

Faculty of

California State University,

San Bernardino

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

Education:

Bilingual/Cross-Cultural Education

---

by

Mercedes Pérez

September 2002

PATTERNS OF INVENTED SPELLING IN SPANISH

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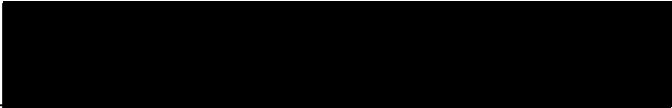
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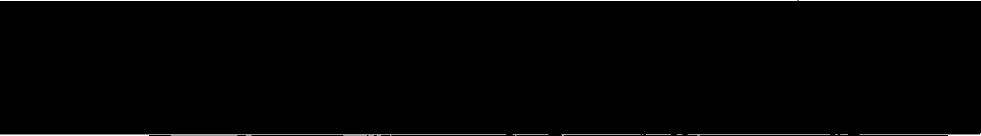
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September 2002

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## 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 medía (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.

## CHAPTER THREE

### DESIGN

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 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 be 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 established 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 be 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

Invented Spelling	Possible Explanation
<u>Substitution of grapheme b for v and vice versa</u>  enbita, enbito, benga, tavian, bibia, bisitar, inbierno, deberti, berdad, faboria, nuebecitos, nabidad, revado, bolbieron, avia, estava, bestir, ba, bamos, boy, avuja, binimos, benir, binir, berlo, benido, llebar, benian, gagava, abiento, bi, ber, bea, ariva, bacuna, beces, bes, vaje, tavien, bestido, vuenos, cueba, binieron, vien, ban niebe, bimos, biene, bolaban, bejetales, ber, uviera, ivan	Children perceive that b and v make the same sound.
<u>Substitution of grapheme s for z and vice versa</u>  sapatos, secate, abraso, asul, bes, ves, naris, empeso, iso, isquierda, personas, vecez	Children perceive that s and z make the same sound.
<u>Substitution of grapheme ll for y and vice versa</u>  pallaso, yoro, yorando, yore, aller, aya, oya, collotes, lla, eya, eyos, ollerón	Children are taught that the grapheme ll and y make the same sound.
<u>Substitution of grapheme q for c and vice versa</u>  quro, inyequsion, chicito	Children perceive the q and c to make the same sound.
<u>Substitution of grapheme c for z and vice versa</u>  ico, prinziipe, hize	Children perceive that the c and z make the same sound.

Invented Spelling	Possible Explanation
<u>Substitution of grapheme r for rr and vice versa</u>  carera, caros, caro, garar, hagaras, coremos, ariba, eridos, orrando, ariva	Maybe using the name of the letter to spell.
<u>Substitution of grapheme g for j and vice versa</u>  guganoms, ogos, manegando, dejo, caga, justo, escojimos, bejetales, gugaba, dige, Jerardo	Children are taught that sometimes the letter g makes the sound of the letter j.
<u>Substitution of grapheme c for s and vice versa</u>  caca, casa, asen, tonse, ciudadano, prinsesa, sercas, diserles, sierto, multiplicaciones, ise, television, inyequsion, sertificado, prinsipe, sielo, dise, calsetin, cenisiente, ase, cosinita vacito, celebracion, eomosionarse, serial, Garsia, cierto	Children are taught that sometimes the letter c makes the sound of the letter s.
<u>Substitution of grapheme n for ñ</u>  cumplanos, cumpreonos	Since children are growing up in an English speaking society they might not see the ñ in print on a daily basis.
<u>Substitution of grapheme i for y and vice versa</u>  i, ally, hi, aquy, querya, reyna, yva	Maybe using the sound of the letter i to spell.

Invented Spelling	Possible Explanation
<u>Omission of grapheme h</u>  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	Since children are taught that the grapheme h is silent they omit it.
<u>Addition of grapheme h</u>  hi, hagaco, hagaras	Children are overgeneralizing the silent h rule and adding the grapheme.

## 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

Invented Spelling	Possible Explanation
<u>Substitution of one vowel for another</u>	Children perceive that vowels have the same point of articulation.
oando, mucho, secate, ol, todo, gusta, muche, pura, fueran, lobo, muchas, digiron, sube, resbaladero, las, tinian, pelota, so, par, esperera, al, serial, degaron, otros, bendere, mondo, rasa, digoron, muno, revado, ambitada, liego, vayomos, siudedano, habie, estodio	
<u>Addition of a single vowel</u>	Children maybe overgeneralizing other rules.
vnguan, jugar, juguamos, edada, jugamos, juego, vana, jugaba, cueando, queiero	



Invented Spelling	Possible Explanation
<u>Substitution of grapheme n for m and vice versa</u>  tanbien, bonbero, lunbre, linpiaron, conpro, mos, nuy, ni, hernana, hernanito, dornio, ambitada, nana, cana, em, pomgo, linpia	Children may perceive that the n and m have the same point of articulation.
<u>Omission of one vowel from 2 or more together</u>  reso, tabin, familia, divirta, escula, lugo, bibloteca, quieramos, hora, tine, monstro	Children will use the vowel that is much more perceptible.
<u>Omission of single vowels</u>  Miga, jugba, garrar, diversones, entrda, anque, hzo, dercha, conmig, un, my, princes, cundo, cuand, reglar	The vowels may be less perceptible than the consonants to these children.
<u>Omission of grapheme n or m before a consonant</u>  tabien, lubre, mustro, cuado, tamien, tego, siepre, brico, blaca, ivierno, ropio	Children may delete nasals when the following consonant is perceived to have the same point of articulation.
<u>Substitution of grapheme ge for gue and vice versa</u>  juge, jugetes, page, amburgesa, quente	Children perceive that the grapheme ge and gue have the same sound.
<u>Substituion of grapheme r for l</u>  argo, cumpre, cumpreones	Children may perceive that the r and l have the same point of articulation.

Invented Spelling	Possible Explanation
<u>Substituion of grapheme j for h and vice versa</u>  juele, hugo <u>Substituion of grapheme c for t</u>  despierce <u>Substituion of grapheme p for v</u>  pidrio, piolin <u>Substituion of grapheme b for f</u>  brio <u>Substituion of grapheme t for b</u>  truja <u>Substituion of grapheme t for d</u>  cuandos <u>Substitution of grapheme t for p and vice versa</u>  tatin, espudiaron, espaban <u>Substituion of grapheme l for b</u>  lola	Children may perceive that the j and h have the same point of articulation.  Children may perceive that the c and t have the same point of articulation.  Children may perceive that the p and v have the same point of articulation.  Children may perceive that the b and f have the same point of articulation.  Children may perceive that the t and b have the same point of articulation.  Children may perceive that the t and d have the same point of articulation.  Children may perceive that the t and p have the same point of articulation.  Children may perceive that the l and b have the same point of articulation.

Invented Spelling	Possible Explanation
<u>Substituion of grapheme d for l</u>  de  <u>Substituion of grapheme g for q</u>  gue	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.

### Category 3

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

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

Invented Spelling	Possible Explanation
Esso, anio, milla, miss, familiia, edadad, ottras, quie, pallasio, nieeve, sirrenas	This may occur because children are taught to sound out words as a spelling strategy.

#### 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

Invented Spelling	Possible Explanation
dulce/dulces, le/les, usted/ustedes, amiga/amigas, favorita/favoritas, ella/ellas, galleta/galletas, mucha/muchas, su/sus, nombre/nombres, padre/padres, ser/hacer, veo/vio, fuimo/fuimos, tambien/tambi�n, puedamos/podemos,	Skills such as verb tense, plural foramation and the use of accents are skills that develop over time.

## Category 5

Category 5 English words that are spelled with Spanish orthography.

The children in this group live within a community where 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

Invented Spelling	Possible Explanation
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, Chistofofor/Christopher, ràyt/ride, aycrì and ayscri/ice cream, movìe/movie, chicen/chicken, chorts/shorts, varies/Barbies, oberoles/overalls	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.

## 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, where 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

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

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

Invented Spelling	Possible Explanation
pintra/pintar, lutimo/ultimo, haora/ahora	These spellings may Children inadvertently interchanged the order of two graphemes.

## 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

Invented Spelling	Possible Explanation
carituras/caricaturas, acanzo/alcanzo, al/a, cenos/señor, jula/junta, atos/atras, pe/pero, juga/jugar, dro/dio, estudo/estubo, mejo/major, daile/baile, quevar/llevar, mutiplicaciones/multiplicaciones, atar/otra, espudienron/estubieron, albrerca/alberca, progama/programa, despue/despues, bujas/brujas, ría/fría, ogo/oyó, cagadita/calladita, regara/regalar	The children in this group misspelled some words for which no logical explanation could be reached.

## 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 where 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 now 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 prinziipe 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, suelo, 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, invitar 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 qiero.

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, estraños 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 gualita.

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 aí. 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, celebrasi3n as celebraci3n. 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, que 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: Disnelandia on July 23, 1998

and Disnylandia 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

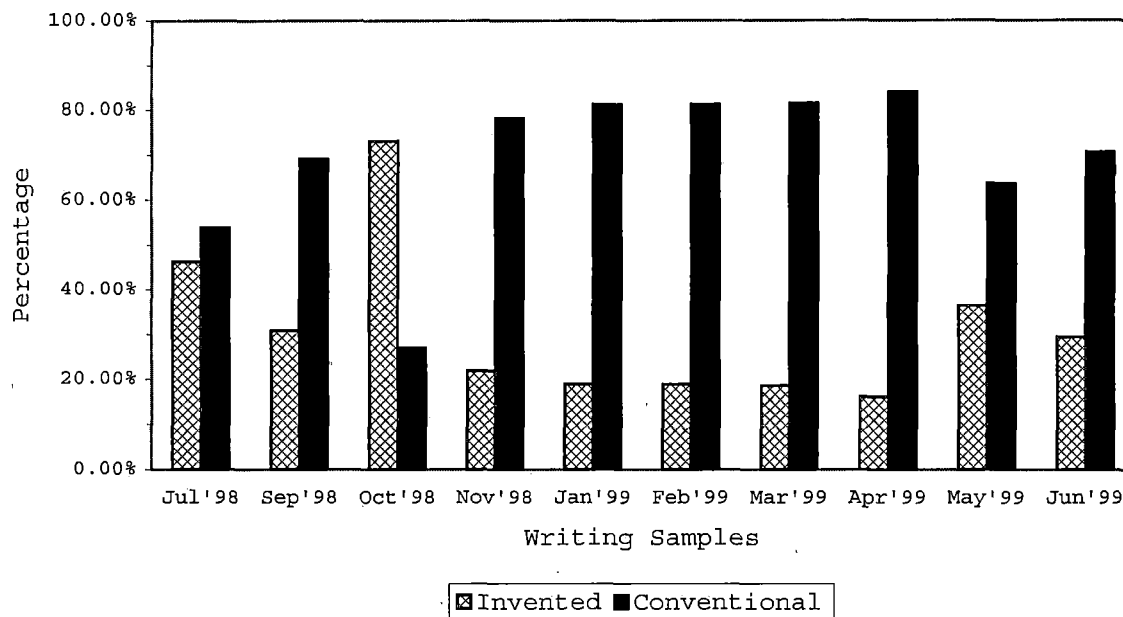
As can be seen from Table 9 and Graph 1, Student 001 improved his conventional spelling both during his second and third grade years. Throughout his second grade year, he improved his conventional spelling; however, he did have some months in which his invented spelling rate increased. In his first sample (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 at 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 than 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

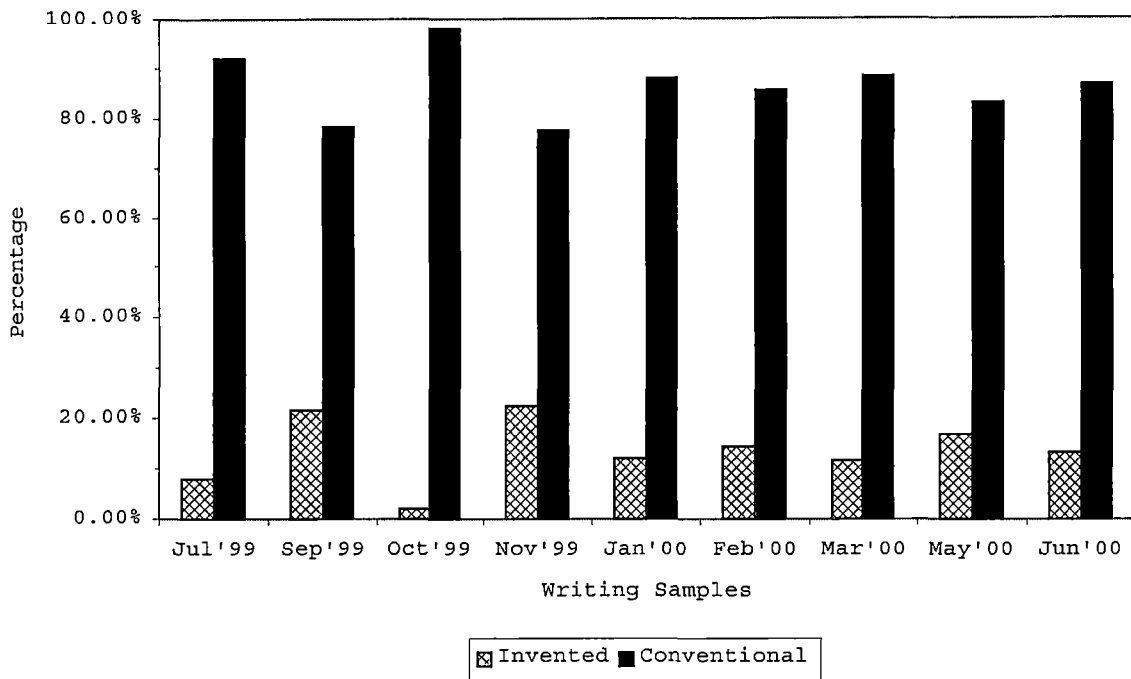
Table 9. Student 001's Spelling Profile for Second and Third Grade

Student 001-Second Grade

Sample Date	Jul'98	Sep'98	Oct'98	Nov'98	Jan'99	Feb'99	Mar'99	Apr'99	May'99	Jun99	Total
Invented Spelling	12	8	19	7	7	7	13	10	12	10	105
Total Words Used	26	266	26	32	37	37	70	62	33	34	383
Invented Spelling Rate	46.20%	30.80%	73.10%	21.90%	18.90%	18.90%	18.60%	16.10%	36.40%	29.40%	27.40%
Conventional Rate	53.80%	69.20%	26.90%	78.10%	81.10%	81.10%	81.40%	83.90%	63.60%	70.60%	72.60%

Student 001-Third Grade

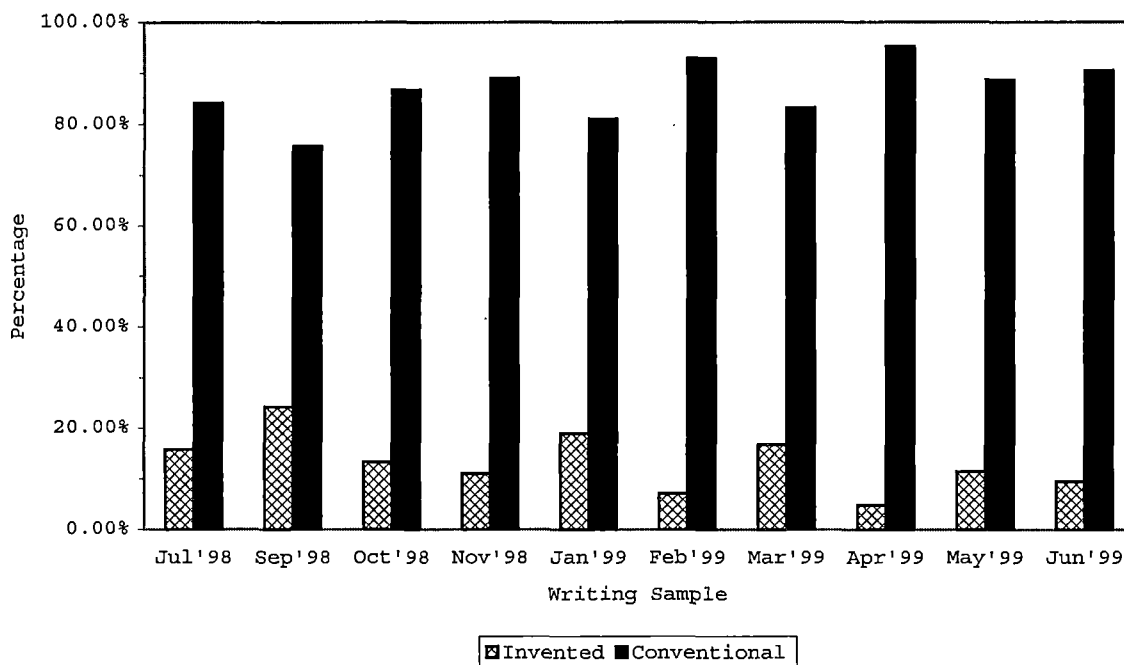
Sample Date	Jul'99	Sep'99	Oct'99	Nov'99	Jan'00	Feb'00	Mar'00	May'00	Jun'00	Total	2/3
Invented Spelling	3	10	1	14	6	11	11	12	14	82	187
Total Words Used	37	46	52	62	50	76	93	72	106	594	977
Invented Spelling Rate	8.10%	21.70%	2.00%	22.60%	12.00%	14.50%	11.80%	16.70%	13.20%	13.80%	19.10%
Conventional Rate	91.90%	78.30%	98.00%	77.40%	88.00%	85.50%	88.20%	83.30%	86.80%	86.20%	80.90%



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 Invented and Conventional Spelling Rate

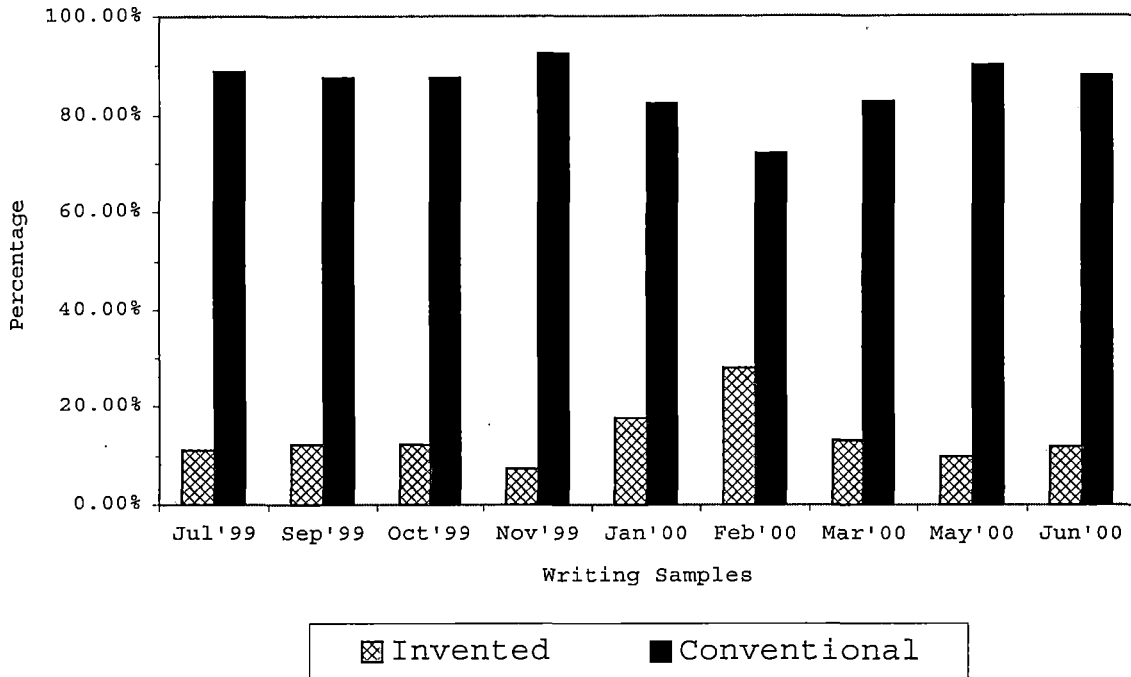
Table 10. Student 002's Spelling Profile for Second and Third Grade

Student 002-Second Grade

Sample Date	Jul'98	Sep'98	Oct'98	Nov'98	Jan'99	Feb'99	Mar'99	Apr'99	May'99	Jun99	Total
Invented Spelling	3	8	2	3	7	5	8	1	4	2	43
Total Words Used	19	33	15	27	37	70	48	21	35	21	326
Invented Spelling Rate	15.80%	24.30%	13.30%	11.00%	18.90%	7.10%	16.70%	4.80%	11.40%	9.50%	13.20%
Conventional Rate	84.20%	75.70%	86.70%	89.00%	81.10%	92.90%	83.30%	95.20%	88.60%	90.50%	86.80%

Student 002-Third Grade

Sample Date	Jul'99	Sep'99	Oct'99	Nov'99	Jan'00	Feb'00	Mar'00	May'00	Jun'00	Total	2/3
Invented Spelling	8	7	14	6	5	18	6	8	1	73	116
Total Words Used	42	40	80	56	36	71	75	89	77	566	892
Invented Spelling Rate	19.10%	17.50%	17.50%	10.70%	13.90%	23.90%	8.00%	9.00%	13.00%	12.90%	13.00%
Conventional Rate	80.90%	82.50%	82.50%	89.30%	86.10%	76.10%	92.00%	91.00%	87.00%	87.10%	87.00%



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%.

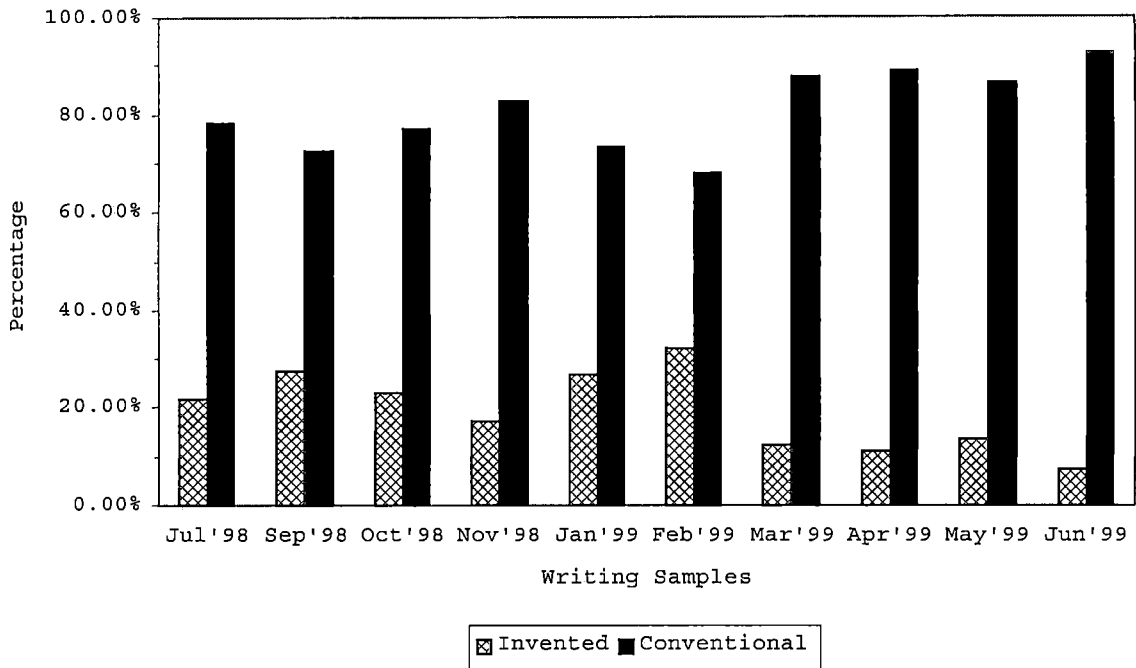
Table 11. Student 003's Spelling Profile for Second and Third Grade

Student 003-Second Grade

Sample Date	Jul'98	Sep'98	Oct'98	Nov'98	Jan'99	Feb'99	Mar'99	Apr'99	May'99	Jun99	Total
Invented Spelling	5	14	8	4	7	10	7	3	3	3	64
Total Words Used	23	51	35	23	26	34	56	27	22	41	338
Invented Spelling Rate	21.70%	27.50%	22.90%	17.40%	26.90%	32.30%	12.50%	11.00%	13.60%	7.300%	18.90%
Conventional Rate	78.30%	72.50%	77.10%	82.60%	73.10%	67.70%	87.50%	89.00%	86.40%	92.70%	81.10%

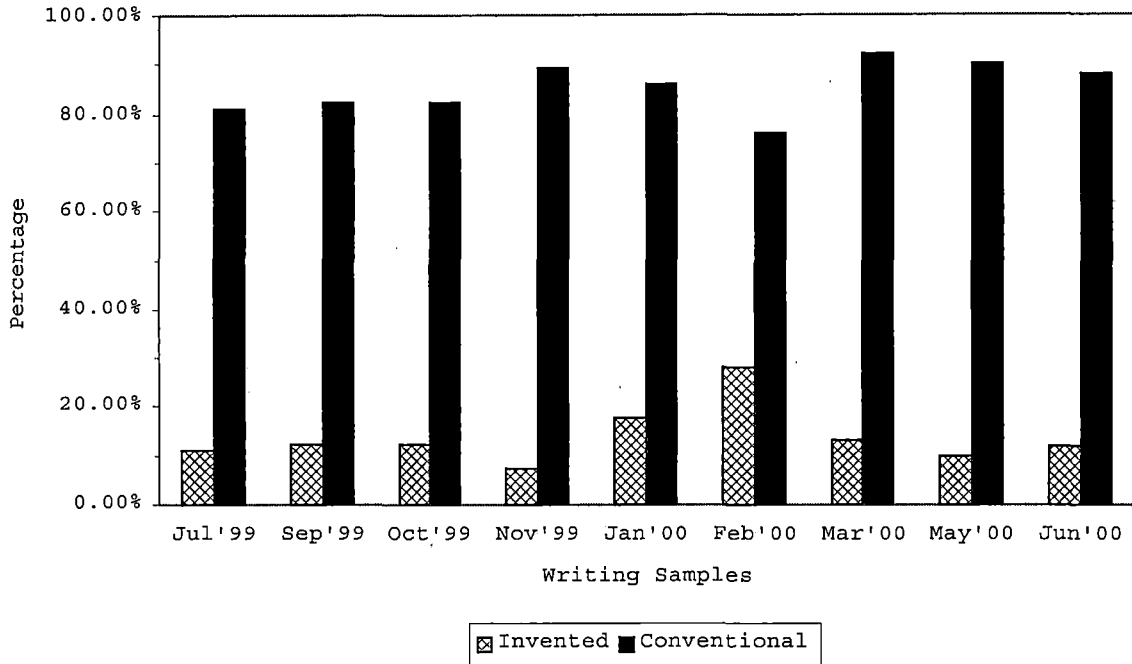
Student 003-Third Grade

Sample Date	Jul'99	Sep'99	Oct'99	Nov'99	Jan'00	Feb'00	Mar'00	May'00	Jun'00	Total	2/3
Invented Spelling	6	7	7	7	10	17	13	6	11	84	148
Total Words Used	53	57	56	94	57	61	75	65	91	609	947
Invented Spelling Rate	11.30%	12.30%	12.50%	7.40%	17.50%	27.90%	13.30%	10.00%	12.10%	13.90%	15.60%
Conventional Rate	88.70%	87.70%	87.50%	92.60%	82.50%	72.10%	82.70%	90.00%	87.90%	86.20%	84.40%



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,

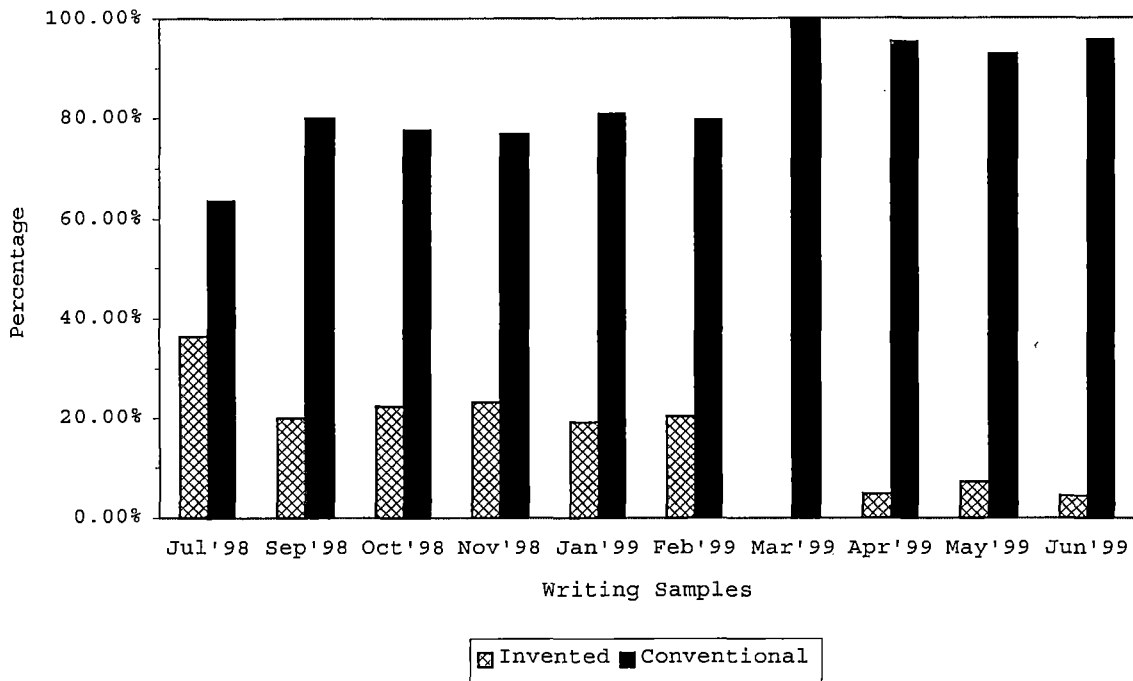
Table 12. Student 004's Spelling Profile for Second and Third Grade

Student 004-Second Grade

Sample Date	Jul'98	Sep'98	Oct'98	Nov'98	Jan'99	Feb'99	Mar'99	Apr'99	May'99	Jun99	Total
Invented Spelling	11	5	17	10	6	11	0	2	5	3	70
Total Words Used	30	25	76	43	31	54	39	40	68	67	473
Invented Spelling Rate	36.70%	20.00%	22.40%	23.30%	19.40%	20.40%	0.00%	5.00%	7.40%	4.50%	14.80%
Conventional Rate	63.30%	80.00%	77.60%	76.70%	80.60%	79.60%	100.00%	95.00%	92.60%	95.50%	85.20%

Student 004-Third Grade

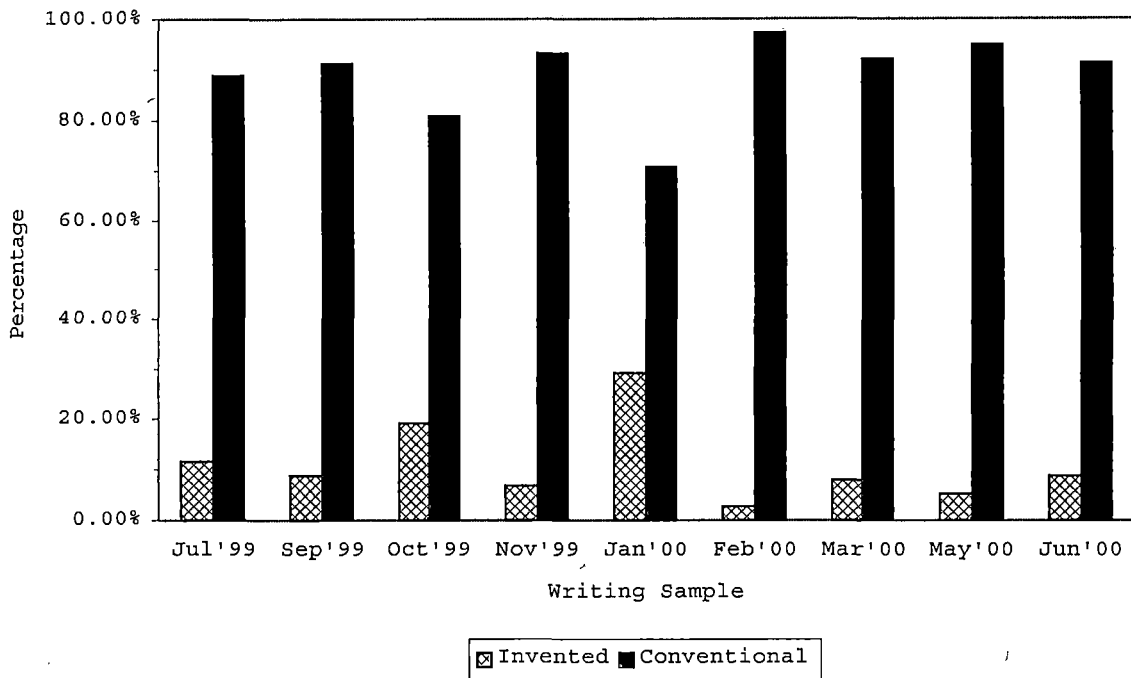
Sample Date	Jul'99	Sep'99	Oct'99	Nov'99	Jan'00	Feb'00	Mar'00	May'00	Jun'00	Total	2/3
Invented Spelling	6	5	25	7	10	2	9	4	9	77	147
Total Words Used	52	55	129	103	34	67	112	77	102	731	1204
Invented Spelling Rate	11.50%	9.00%	19.40%	6.80%	29.40%	27.90%	8.00%	5.20%	8.80%	10.50%	12.20%
Conventional Rate	88.50%	91.00%	80.60%	93.20%	70.60%	72.10%	92.00%	94.80%	91.20%	89.50%	87.80%



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 truii 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 come 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 spellings 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 they 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

<u>bacuna</u>	<u>Estabamos</u>	<u>silba</u>
<u>vago</u>	<u>lavador</u>	<u>vuelva</u>

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		
juge	jugue	substitution of grapheme ge for gue
con		
mi		
ermano	hermano	omission of grapheme h
a		
los		
juegetes	juguets	substitution of grapheme ge for gue
de		
carera	carrera	substituion of grapheme r for rr
de		
bie	bien	omission of grapheme n
reso	resio	omission of grapheme i
de	le	substitution of grapheme d for l
gusto		
a		
m		
ermanito	hermanito	omission of grapheme h
y		
a		
mi		
tabin	también	omission of graphemes m and e
gusto		
esso	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		
a		
la		
caca	casa	substitution of grapheme c for s
de		
la		
miga	amiga	omission of grapheme a
de		
mi		

hermana	hermano	substitution of grapheme a for o
no		
estaban	estaba	omission of grapheme n
y		
los		
venimos		
en		
caro	carro	substitution of grapheme r for rr
luego		
los	nos	substitution of grapheme l for n
fuimo	fuiimos	omission of grapheme s
a		
la		
caca	casa	sustitution of grapheme c for s
de		
nosotros		

Invented spelling rate: 8/26=30.8%

Conventional Spelling rate: 69.20%

### 001SS10-30-98

Student spelling	Conventional	Classification
A		
mi		
me		
gusta		
Halloween		
porque		
dan		
muchos		
dulce	dulces	omission of grapheme s
yo		
me		
a		
vistir		
de		
payaso		
m	me	omission of gragheme e
voy		
a		
pintra	pintar	reversal of graphemes a and r
la		
cara		
de		
colores		
tabien	tambien	omission of grapheme m
voy		

a		
contar		
los		
dulces		
mis		
hermanos		
se		
ban	van	substitution of grapheme b for v
a		
bistir	vistir	substitution of grapheme b for v
lo		
mismo		
co	que	substitution of grapheme co for que
mi		
se		
ban	van	substitution of grapheme b for v
a		
pintra	pintar	reversal of graphemes a and r
la		
cara		
y		
bamos	vamos	substitution of grapheme b for v
a		
decir		
truc	trick	English words spelled with Spanish orthography
o	or	English words spelled with Spanish orthography
trui	treat	English words spelled with Spanish orthography
gui	give	English words spelled with Spanish orthography
mi	me	English words spelled with Spanish orthography
santen	something	English words spelled with Spanish orthography
gu	good	English words spelled with Spanish orthography
to	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	Conventional	Classification
yo		
estaba		
siendo	haciendo	omission of grapheme h and sub. s for c
una		

casa		
para		
mis		
hermanos		
y		
yo		
tambien	tambien	substitution of grapheme n for m
y		
jugue		
con		
mis		
hermanos		
y		
fui		
a		
ser	hacer	substitution of verb ser for hacer
un		
carro		
para		
mis		
hermanos		
tenian		
se	sed	omission of grapheme d
le	les	omission of grapheme s
di		
argo	algo	substitution fo grapheme r for l
de		
tomar		

Invented spelling rate: 7/32=21.9%

Conventional Spelling rate: 78.10%

### 001J1-19-99

Student spelling	Conventional	Classification
yo		
un		
dia	día	accepted without accent
me		
encontre		
un		
peni	penny	English words spelled with Spanish orthography
y		
un		
anio	anillo	overexaggerated pronunciation
me		
lo		
lleve		



a		
la		
casa		
milla	mia	overexaggerated pronunciation
y		
luegos	luego	addition of grapheme s
los		
fui		
a		
la		
tienda		
para		
conpra	compra	substitution of grapheme n for m
mucha		
cosa		
y		
luego		
lo		
fuimos		
a		
la		
casa		
de		
losotros	nosotros	substitution of grapheme l for n
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		

cielo		
coremos	corremos	substitution of grapheme r for rr
en		
la		
nieve		
rapido	rápido	accepted without accent
yo		
le		
puse		
ropa		
sapatos	zapatos	substitution of grapheme s for z
guantes		
y		
un		
sobrero	sombrero	omission of grapheme m
ogos	ojos	substitution of grapheme g for j
boca		
manos		
y		
pies		
Invented spelling rate:	7/37=18.9%	
Conventional Spelling rate:	81.10%	

### 001J3-10-99

Student spelling	Conventional	Classification
yo		
fui		
a		
la		
casa		
de		
mis		
abuelitos		
luego		
fuimos		
a		
ber	ver	substitution of grapheme b for v
que		
estaba		
ariba	arriba	substitution of grapheme r for rr
del		
techo		
luego		
bi	vi	substitution of grapheme b for v
que		
era		

un		
gato		
chiquito		
y		
luego		
los		
fuimos		
a		
la		
casa		
de		
losotros	nosotros	substitution of grapheme l for n
y		
bimos	vimos	substitution of grapheme b for v
tele		
en		
la		
casa		
de		
losotros	nosotros	substitution of grapheme l for n
se		
trataba		
que		
un		
pallaso	payaso	substitution of grapheme ll for y
era		
un		
polecia	policía	substitution of grapheme e for i
se		
bistilla	vestía	
como		
un		
pallaso	payaso	substitution of grapheme ll for y
y		
bailaba		
aciba	hacia	dialect
trucos		
y		
tabien	también	omission of grapheme m
jugba	jugaba	omission of grapheme a
con		
los		
niños		
y		
corria		
resio		
con		

los  
niños

Invented spelling rate: 13 /70=18.6%

Conventional Spelling rate: 81.40%

**001J4-27-99**

Student spelling	Conventional	Classification
yo		
quiero		
ser		
cuando		
sea		
grande		
un		
bonbero	bombero	substitution of grapheme n for m
para		
que		
se		
pague	apague	substitution of grapheme ge for gue
la		
lubre	lumbre	omission of grapheme m
de		
la		
casa		
con		
la		
agua		
y		
ya		
no		
ayga	haya	omission of grapheme h
lunbre	lumbre	substitution of grapheme n for m
para		
que		
no		
se		
queme		
la		
guente	gente	substitution of grapheme gue for ge
de		
la		
casa		
y		
no		
esten		
eridos	herridos	omission of grapheme h and sub of r for rr

o		
muertos		
porque		
si		
juele	huele	substitution of grapheme j for h
que		
se		
quemen		
y		
la		
famila	familia	omission of grapheme i
se		
queden		
y		
orando	arranado	sustitution of graphemes o for a and r for rr
toda		
la		
familia		
de		
el		
que		
se		
murio	murió	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	último	reversal of graphemes l and u
recreo		
Si		
platicamos		
mucho		
no		
vamos		

tener		
el		
pari	party	English words spelled with Spanish orthography
de		
nieve		
i	y	substitution of grapheme i for y
si		
no		
platicamos		
si		
bamos	vamos	substitution of grapheme b for v
tener		
aycri	ice-cream	English words spelled with Spanish orthography
pari	party	English words spelled with Spanish orthography
luego		

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	substitution of grapheme n for m
aburjesa	hamburguesa	omission of graphemes h,m,u and sub. j for g
grandes		
muy		
grande		
y		
las		
papas		
eran		
tanbien	también	substitution of grapheme n for m
grandes		
como		
la		
anburgesa	hamburguesa	om. of grapheme h and sub. n for m and ge for
gue		
luego		
los	nos	substitution of grapheme l for n
fuimos		
a		
comer		

nive	nieve	omission of grapheme e
de		
nimon	limon	substitution of grapheme n for l
tanbien	también	substitution of grapheme n for m
comimos		
sandia		
luejo	luego	substitution of grapheme j for g
jugamos		
losotros	nosotros	substitution of grapheme l for n

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		
linpiaran	limpiaran	substitution of grapheme n for m
los		
dientes		
en		
el		
dentista		
tambien	también	accepted without accent
me		
sacaron		
sangre		
a		
mi		
mucho	mucha	substitution of grapheme o for a
no		
dolio	dolió	accepted without accent
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%

# **001J9-28-99**

Student spelling	Conventional	Classification
yo		
se		
cortar		
el		
secate	zacate	substitution of graphemes e for a and s for z
me		
enseño		
mi		
papá		
a		
cortar		
el		
secate	zacate	substitution of graphemes e for a and s for z
con		
la		
maquina		
ora	ahora	omission of graphemes a and h
lo		
puedo		
cortar		
el		
secate	zacate	substitution of graphemes e for a and s for z
en		
la		
casa		
todo		
lo		
corto		
aora	ahora	omission of grapheme h
puedo		
cortar		
todo		
el		
secate	zacate	substitution of graphemes e for a and s for z
para		
que		



no		
ayga	haya	omission of grapheme h and addition of g
secate	zacate	substitution of graphemes e for a and s for z
mucho		
afuera		
pa	para	omission of graphemes r and a
que		
se		
bea	vea	substitution of grapheme b for v
bonito		

Invented spelling rate: 10/46=21.7%

Conventional Spelling rate: 78.30%

### 001SS10-14-99

Student spelling	Conventional	Classification
yo		
fuii	fui	exaggerated pronunciation of i
al		
hospital		
para		
mi rar	mirar	accepted with space
al		
bebe	bebé	accepted without accent
En		
la	el	language development
hospital		
porque		
si		
estaba		
bien		
en		
la	el	language development
hospital		
el		
bebe	bebé	accepted without accent
para		
que		
si		
estaba		
muy		
bien		
le		
traiamos		
de		
comer		
al		

bebe	bebé	accepted without accent
para		
que		
se		
dormiera		
en		
la		
cama		
muy		
cansado		
el		
bebé		
si		
estaba		
bien		
o		
mal		
les		
daban		
de		
comer		

Invented spelling rate: 1/52=2%

Conventional Spelling rate: 98%

### 001SS11-19-99

Student spelling	Conventional	Classification
venguan	vengan	addition of grapheme u
para		
que		
se		
divirta	divierta	omission of grapheme e
mucha		
si		
quiere		
algo		
no		
mas	más	accepted without accent
plaude	aplaude	omission of grapheme a
y		
un		
robot		
biene	viene	substitution of grapheme b for v
Jesus		
es		
muy		
rico		

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		
juguetes	juguetes	substitution of grapheme ge for gue
los		
juguetes		
asen	hacen	omission of grapheme h and sub of s for c
magia	mágia	accepted without accent
si		
ustede	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%



hermano

ya

no

yore

lloró

substitution of grapheme y for ll

mucho

Invented spelling rate:

6/50=12%

Conventional Spelling rate:

88%

### 001J2-24-00

Student spelling

Conventional

Classification

yo

aller

ayer

substitution of grapheme ll for y

ise

hice

omission of grapheme h and sub of s for c

mi

tarea

en

mi

casa

tambien

también

accepted without accent

mire

carituras

caricaturas

omission of syllable ca

en

mi

casa

luego

me

fui

a

domir

en

mi

cama

luego

en

la

mañanita

me

desperce

desperte

substitution of grapheme c for t

me

lave

mis

dientes

me

piene

luego

me

vine		
a		
la		
escuela		
los	nos	substitution of grapheme l for n
dieron		
un		
rayte	ride	English word spelled with Spanish Orthography
a		
mi		
y		
mi		
hermana		
luego		
ya		
lochaba	lonchaba	dialect
y		
me		
comi	comí	accepted without accent
casi		
todo	toda	ubstitution of grapheme o for a
mi		
comida		
luego		
me		
vine		
en		
la		
clase		
lugo	luego	omission of grapheme e
vine		
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		
aller	ayer	substitution of grapheme ll for y
ise	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

vinimos

substitution of grapheme b for v

a  
la  
Open  
House  
luego  
de  
Open  
House  
fuimos  
a  
la  
Walmart  
Despues

a  
la  
casa

nos

substitution of grapheme l for n

los  
fuimos  
en  
el  
carro  
luego  
miramos  
televiscion  
tambien  
tome  
algo  
de  
tomar  
luego  
de

televisión  
también

substitution of grapheme s for c  
accepted without accent

eso		
me		
fui		
a		
dormir		
en		
mi		
cama		
y		
me		
dormi	dormí	accepted without accent
sueñe	soñé	language development
de		
que		
yo		
estaba		
manejando	manejando	substitution of g for j
un		
carro		
que		
era		
de		
color		
verde		
con		
rojo		
y		
morado		
si		
me		
gusta	gusto	substitution of grapheme a for o
el		
carro		
como		
le		
daba		
cori	corrí	accepted without accent
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%



### Student spelling

127

a		
mi		
tambien	también	accepted without accent
me		
gusta		
juguar	jugar	addition of grapheme u
kickball		
porque		
no		
mas	más	accepted without accent
tenemos		
que		
patiar		
la		
pelota		
ariva	arriba	substitution of graphemes r for rr and v for b
y		
la		
tienen		
que		
carchar	cachar	dialectical
la		
pelota		
cuando		
la		
patean		
ariba	arriba	substitution of grapheme r for rr
Invented spelling rate:	12/72=16.7%	
Conventional Spelling rate:	83.30%	

#### 001J6-15-00

Student spelling	Conventional	Classification
ayer		
yo		
fui		
a		
la		
bibloteca	biblioteca	omission of grapheme i
a		
regresar		
unos		
libros		
que		
no		
abiamos	habiamos	omission of grapheme h
regresado		

cuando		
no		
podíamos		
los		
regresamos		
y		
nos		
dijeron	dijeron	substitution of graphemes g for j and i for e
que		
puedíamos	podíamos	verb tense
escoger		
otros		
que		
quieramos	queríamos	omission of grapheme i
que		
si		
puedamos	podemos	verb tense
garar	agarrar	omission of grapheme a and sub. r for rr
una		
movie		
la		
que		
sea		
era		
de		
dinosauris		
que		
bolaban	volaban	substitution of grapheme b for v
no		
mas	más	accepted without accent
y		
no		
pueden		
comer		
carne		
porque		
no		
tiene		
dientes		
comian		
plantas		
no		
mas	más	accepted without accent
nada		
mas	más	accepted without accent
porque		
eso		

lo		
que		
comen		
ellos		
de		
plantas		
que		
están		
bien		
grandes		
son		
ojas	hojas	omission of grapheme h
que		
comen		
o		
plantas		
si		
me		
justo	gusto	substitution of grapheme j for g
mirar		
la		
muve	movie	English words spelled with Spanish Orthography
que		
escojimos	escogimos	substitution of grapheme j for g
no		
estaba		
miedosa		
la		
movie		
de		
los		
dinosaurios		
que		
bolaban	volaban	substitution of grapheme b for v
y		
comen		
plantas		
que		
les		
justa	gusta	substitution of grapheme j for g
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

Student Spelling	Conventional	Classification
ya		
Susana		
sube	sabe	substituion of grapheme u for a
cual		
es		
mi		
casa		
yo		
tambien	también	accepted without accent
se		
cual		
es		
su		
casa		
núnca	nunca	accepted with additional accent
voy		
a		
su		
casa		
Invented Spelling rate:	3/19=15.8%	
Conventional Spelling rate:	84.20%	

### 002SS9-11-98

Student Spelling	Conventional	Classification
yo		
soy		
grande		
tengo		
años		
tengo		
una		
familiia	familia	overexaggerated pronunciation
buena		
edada	edad	addition of grapheme a
buena		
como		
mi		
papá		
y		
mamá		
mi		

comida		
faboria	favorita	substitution of grapheme b for v
es		
una		
amburgesa	hamburguesa	omission of grapheme h and sub. ge for gue
con		
chicen	chicken	English words spelled with Spanish orthography
resbaladeros	resbaladeras	substitution of grapheme o for a
y		
jugar		
perros		
mi		
mamá		
tiene		
buena		
edadad	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		
vinir	venir	substitution of grapheme i for e
todos		
los		
días		
para		
aprender		
y		
estudiar		
mucho		
es		
muy		
bonito		
benir	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		
falda		
me		
ceda	queda	substitution of grapheme c for q and om. of u
para		
ir		
a		
la		
iglesia		
cuando		
se		
termina		
jugamos		
mi		
prima		
y		
yo		
sino	si no	accepted without space
biene	viene	substitution of grapheme b for v
entonses	entonces	substitution of grapheme s for c
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	dolió	accepted without accent
mucho		
tambien	también	accepted without accent
en		
el		
dedo		
con		
un		
pidrio	vidrio	substitution of grapheme p for v
mucho		



que		
pica		
tan		
feo		
tambien	también	accepted without accent
la		
bacuna	vacuna	substitution of grapheme b for v
porque		
le		
dan		
fuerte		
a		
la		
inequision	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		
berdad	verdad	substitution of graphem b for v
Invented Spelling rate:	5/70=7.1%	
Conventional Spelling rate:	92.90%	

## Student Spelling

137

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	sábado	accepted without accent
queria		
binir	venir	substitution of graphemes b for v and i for e
a		
la		
escuela		
el		
domingo		
me		
dijo	dijo	accepted without accent
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	voy	substitution of grapheme b for v
a		
ir		
a		
la		
montaña		
magica	mágica	accepted without accent
para		
la		

otra		
semana		
con		
mi		
mamá		
mi		
papá		
tambien	también	accepted without accent
con		
Janet		
ya		
ban	van	substitution of grapheme b for v
a		
ser		
como		
ocho		
beces	veces	substitution of grapheme b for v
que		
bamos	vamos	substitution of grapheme b for v
a		
ir		
a		
la		
montaña		
magica	mágica	accepted without accent

Invented Spelling rate: 4/35=11.4%

Conventional Spelling rate: 88.60%

### 002J6-21-99

Student Spelling	Conventional	Classification
Yo		
por		
mi		
casa		
bi	vi	substitution of grapheme b for v
una		
mariposa		
dos		
flores		
un		
arbol	árbol	accepted without accent
nubes		
y		
un		
cerco		
tambien	también	accepted without accent

bi	vi	substitution of grapheme b for v
una		
casita		
de		
campañā		

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

### 002J7-28-99

Student Spelling	Conventional	Classification
yo		
ayer		
fui		
con		
mi		
papā		
y		
mi		
mamá		
aya	allā	substitution of grapheme y for ll
para		
que		
mi		
papā		
se		
iciero	hiciera	omission of grapheme h and sub. o for a
siudedano	ciudadano	substitution of graphemes s for c and e for a
si		
se		
ico	hizo	omission of grapheme h and sub. c for z
tambien	también	accepted without accent
le		
dieron		
un		
sertficado	certificado	substitution of grapheme s for c
una		
bendere	bandera	substitution of grapheme e for a
tambien	también	accepted without accent
habie	habia	substitution of grapheme e for a
muche	mucha	substitution of grapheme e for a
gente		
que		
se		
metia		
despues	después	accepted without accent
todos		

se		
metieron		
mi		
papá		
tambien	también	accepted without accent

Invented Spelling rate: 8/42=19.1%

Conventional Spelling rate: 80.90%

### 002J9-24-99

Student Spelling	Conventional	Classification
hora	ahorá	omission of grapheme a
yo		
voy		
a		
ir		
al		
hospital		
deberas	deveras	dialectical
para		
ber	ver	substitution of grapheme b for v
al		
bebe	bebé	accepted without accent
y		
bamos	vamos	substitution of grapheme b for v
a		
ir		
el		
martes		
pero		
no		
fuimos		
yo		
pienso		
que		
esta	está	accepted without accent
bien		
chicito	chiquito	substitution of grapheme c for qu
y		
bonito		
yo		
se		
que		
boy	voy	substitution of grapheme b for v
a		
quererlo		
mucho		

anque	aunque	omission of grapheme u
sea		
mi		
primito		

Invented Spelling rate:	7/40=17.5%
Conventional Spelling:	82.50%

# 002SS10-1-99

Student Spelling	Conventional	Classification
hace		
mucho		
tiempo		
en		
un		
castillo		
uana	una	addition of grapheme of a
princesa		
era		
bien		
traviesa		
el		
prinsipe	principe	substitution of grapheme s for c
tenia		
a		
un		
gato		
bien		
malo		
un		
día		
el		
prinzipie	principe	substitution of grapheme z for c
encontro		
una		
prinsesa	princesa	substitution of grapheme s for c
pero		
si		
gato		
no		
la		
queria		
el		
prinzipie	principe	substitution of grapheme z for c
pensaba		
que		
era		



bueno		
el		
gato		
hizo		
un		
cocnifero	cocinero	addition of grapheme n
el		
prinzipie	principe	substitution of grapheme z for c
que		
era		
la		
prinsesa	princesa	substitution of grapheme s for c
un		
día		
el		
prinzipie	principe	substitution of grapheme z for c
acanzo	alcanzo	omission of grapheme l
a		
ber	ver	substitution of grapheme b for v
al		
gato		
destrosando		
el		
castillo		
despues	después	accepted without accent
la		
prinsesa	princesa	substitution of grapheme s for c
y		
el		
prinzipie	principe	substitution of grapheme z for c
se		
casaron		
el		
gato		
se		
hiz	hizo	omission of grapheme o
bueno		
y		
se		
caso	casó	accepted without accent
con		
una		
gata		

Invented Spelling rate: 14/80=17.5%  
Conventional Spelling rate: 82.50%

## Student Spelling

144

una		
caga	caja	substitution of grapheme g for j
de		
diamantes		
ay	hay	omission of grapheme h
agua		
limpia		
ay	hay	omission of grapheme h
en		
la		
caga	caja	substitution of grapheme g for j

Invented Spelling rate: 6/56=10.7%

Conventional Spelling rate: 89.30%

### 002J1-19-00

Student Spelling	Conventional	Classification
yo		
fui		
a		
la		
casa		
de		
mi		
tia	tía	accepted without accent
Blanca		
ella		
me		
conpro	compro	substitution of grapheme n for m
bien		
muchas		
cosas		
llenos		
de		
regalos		
en		
nabidad	navidad	substitution of grapheme b for v
ella		
le		
conpro	compro	substitution of grapheme n for m
todo		
a		
ni	mi	substitution of grapheme n for m
ella		
casi		
no		
tiene		

dinero		
mi		
tia	tía	accepted without accent
es		
nuy	muy	substitution of grapheme n for m
buena		

Invented Spelling rate: 5/36=13.9%

Conventional Spelling rate: 86.10%

### 002J2-24-00

Student Spelling	Conventional	Classification
yo		
ayer		
bi	vi	substitution of grapheme b for v
una		
pelicula	película	accepted without accent
de		
Felix		
el		
tenia		
mucha		
terro	terror	omission of grapheme r
pero		
el		
era		
muy		
rico		
despues	después	accepted without accent
me		
fui		
a		
dornir	dormer	substitution of grapheme n for m
con		
a		
las		
pero		
yo		
no		
me		
queria		
ir		
a		
dornir	dormer	substitution of grapheme n for m
con		
mi		
nana	mamá	substitution of grapheme n for m

a		
su		
cana	cama	substitution of grapheme n for m
me		
tuve		
que		
dornir	dormir	substitution of grapheme n for m
en		
el		
cielo	suelo	substitution of graphemes c for s and i for u
ni	mi	substitution of grapheme n for m
hernana	hermana	substitution of grapheme n for m
se		
con		
mi		
nana	mamá	substitution of grapheme n for m
arriba		
de		
la		
cana	cama	substitution of grapheme n for m
mi		
hernanito	hermanito	substitution of grapheme n for m
chicisto	chiquito	substitution of grapheme c for qu
se		
dornio	dormio	substitution of grapheme n for m
conmig	conmigo	omission of grapheme o
en		
el		
suelo		
le		
gusto		
dormirse		
ally	allí	omission of grapheme y for i
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		
ase	hace	omission of grapheme h and sub. of s for c
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		
boy	voy	substitution of grapheme b for v
a		
berlo	verlo	substitution of grapheme b for v
porque		
todos		
son		
buenos		
son		

alla	allá	accepted without accent
yo		
los		
quiero		
mucho		
a		
todos		
de		
alla	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
aquy	aquí	substitution of grapheme y for i
le		
gusto		
que		
tambien	también	accepted without accent
le		
compre		
otra		

cosa		
que		
tambien	también	accepted without accent
le		
compre		
otra		
cosa		
que		
tambien	también	accepted without accent
le		
gusto		
le		
di		
un		
abrasso	abrazo	substitution of grapheme s for z
y		
un		
beso		
dijo		
que		
muchas		
gracias		
me		
ba	va	substitution of grapheme b for v
a		
llebar	llevar	substitution of grapheme b for v
al	a	addition of grapheme l
el		
parque		
ora	ahora	omission of grapheme a and h
pero		
yo		
no		
quiero		
porque		
me		
dijo		
que		
me		
iba		
a		
comprar		
todo		
los		
que		
yo		
queriya	queria	substitution of grapheme of y for i



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**

Student Spelling	Conventional	Classification
yo		
ayer		
fui		
a		
la		
tienda		
para		
que		
compraran		
papitas		
de		
chile		
de		
queso		
y		
de		
todas		

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	compró	accepted without accent
una		
falda		
con		
una		
camiseta		
alla	allá	accepted without accent
en		
el		
swap		
meet		
de		
Chula		
Vista		
era		
la		
camiseta		
de		
asul	azul	substitution of grapheme s for z
bien		
bonito		
era		
con		
blanco		
pero		
yo		

tambien	también	accepted without accent
me		
compre		
una		
blusa		
un		
pantalon	pantalón	accepted without accent
tambien	también	accepted without accent
estos		
zapatos		
que		
tengo		
puestos		

Invented Spelling rate:	1/77=13%
Conventional Spelling rate:	87%

APPENDIX C  
TRANSCRIPT FOR STUDENT 003

### Transcript 3

#### 003J7-23-98

Student Spelling	Conventional	Classification
yo		
me		
llamo		
Carmelita		
ottras	otras	overexaggerated pronunciation
tres		
amigas		
y		
son		
Susana		
Ana		
Karen		
Karina		
son		
mis		
amiga	amigas	omission of grapheme s
favorita	favoritas	omission of grapheme s
juego		
con		
ella	ellas	omission of grapheme s
les		
doy		
coras	quarters	English words spelled with Spanish orthography

Invented Spelling rate: 5/23=21.7%

Conventional Spelling rate: 78.30%

#### 003J9-21-98

Student Spelling	Conventional	Classification
el		
viernes		
vila	vi la	accepted without spacing
pelea		
de		
oscar		
de		
la		
olla	Hoya	omission of grapheme h and sub. ll for y
estuvo		
vien	bien	substitution of grapheme v for b
guena	buena	substitution of grapheme g for b
gano	ganó	accepted without accent

oscar		
de		
la		
olla	Hoya	omission of grapheme h and sub. ll for y
tavien	también	omission of grapheme m and sub. v for b
numeritos	númeritos	accepted without accent
gano	ganó	accepted without accent
un		
cenos	Cenon	substitution of grapheme c for s, s for r and n for
ñ		
de		
los		
amigos		
de		
mi		
papa	papá	accepted without accent

Invented Spelling rate: 14/51=27.5%

Conventional Spelling rate: 72.50%

### 003SS10-23-98

Student Spelling	Conventional	Classification
yo		
el		
dia	día	accepted without accent
de		
Halloween		
me		
voy		
a		
bestir	vestir	substitution of grapheme b for v
de		
reyna	reina	substitution of grapheme y for i
y		
mi		
hermana		
de		
pallasio	payaso	substitution of grapheme ll for y and overex. pron.
me		
van		
a		
llebar	llevar	substitution of grapheme b for v
a		
Halloween		
pero		
en		
el		

monte		
dan		
dulces		
guenos	buenos	substitution of grapheme g for b
porque		
le		
dan		
dinero		
o		
coras	quarters	English words spelled with Spanish orthography

Invented Spelling rate: 8/35=22.9%

Conventional Spelling rate: 77.1

### 003J11-19-98

Student Spelling	Conventional	Classification
yo		
era		
una		
niña		
que		
juegaba	jugaba	addition of grapheme e
con		
sus		
primas		
pero		
yo		
estava	estaba	substitution of grapheme v for b
en	em	substitution of grapheme n for m
mi		
casa		
pero		
yo		
las		
estraños	estraño	addition of grapheme s
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	tengo	omission of grapheme n
mucha	muchas	addition of grapheme s
amigas		
en		
escuela		
se		
llama		
Diana		
juega		
mucho		
conmigo		
come		
julo	junta	omission of grapheme n and sub. l for t
conmigo		
en		
la		
cafeteria		
luego		
nos		
bamo	varnos	substitution of grapheme b for v
a		
casa		
entonces		
juego		
atos	atras	omission of grapheme r and sub. o for a

**003SS2-16-99**



montañas

blancas

puedes

jugar

alí

allí

omission of grapheme ll

y

aser

hacer

omission of grapheme 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

jugamos		
a		
las		
varvis	Barbies	English words spelled with Spanish Orthography
entonces		
su		
mamá		
nos		
dro	dio	substitution of grapheme r for i
galleta	galletas	omission of grapheme s
con		
leche		
nos		
sentamos		
En		
la		
mesa		
luego		
llego	llegó	accepted without accent
su		
papá		
de		
Cati	Cathy	English words spelled with Spanish Orthography
y		
me		
fui		
a		
la		
casa		
nos		
acostamos		
mucho		

Invented Spelling rate: 7/56=12.5%

Conventional Spelling rate: 87.50%

### 003J4-27-99

Student Spelling	Conventional	Classification
Mi		
papá		
nos		
ba	va	substitution of grapheme b for v
a		
compra		
un		
perrito		
para		

que  
este  
adentro  
de  
la  
casa  
y  
pura  
jugar  
con  
el  
mi  
hermana  
ba  
poder  
jugar  
mucho  
rato

para

substitution of grapheme u for a

va

substitution of grapheme b for v

Invented Spelling rate: 3/27=11%

Conventional Spelling rate: 89%

### 003J5-14-99

Student Spelling

Conventional

Classification

Yo  
fui  
al  
pari  
de  
amiga  
Dulce  
ella  
siempre  
gugava  
conmigo  
en  
la  
Henry  
era  
bien  
buena  
y  
tambien  
gugava  
con  
Lesli

party

English words spelled with Spanish orthography

jugaba

substitution of graphemes g for j and v for b

también  
jugava

accepted without accent  
substitution of graphemes g for j and v for b

Invented Spelling rate: 3/22=13.6%  
 Conventional Spelling rate: 86.40%

**003J6-21-99**

Student Spelling	Conventional	Classification
A		
mi		
me		
compraron		
una		
alberca		
aora	ahora	omission of grapheme h
me		
voy		
a		
meter		
a		
bañar		
con		
mi		
hermana		
a		
la		
mejo	mejor	omission of grapheme r
se		
mete		
mi		
papá		
y		
mi		
mamá		
voy		
a		
invitar		
a		
mi		
prima		
a		
tadas	todas	substitution of grapheme a for o
mis		
primas		
y		
a		
mi		
primo		
Alex		

Invented Spelling rate: 3/41=7.3%  
 Conventional Spelling rate: 92.70%

**003J7-26-99**

Student Spelling	Conventional	Classification
A		
mi		
me		
gusta		
jugar		
mucho		
en		
la		
escuela		
porque		
me		
gusta		
yo		
estodio	estudio	substitution of grapheme o for u
mucho		
en		
la		
escuela		
ago	hago	omission of grapheme h
lo		
que		
yo		
puedo		
aser	hacer	omission of grapheme h and sub of s for c
en		
la		
escuela		
pero		
siepre	siempre	omission of grapheme m
me		
dan		
tarea		
dise	dice	substitution of grapheme s for c
mi		
primo		
que		
la		
tarea		
es		
porque		
no		

la  
terminamos  
en  
la  
clase  
luego  
es  
tiempo  
que  
vayamos  
a  
casa

vayamos

substitution of grapheme o for a

Invented Spelling rate: 6/53=11.3%

Conventional Spelling rate: 88.70%

### 003J9-28-99

Student Spelling

Conventional

Classification

yo  
voy  
a  
ver  
la  
película  
Chuckies  
Bride  
a  
las  
películas  
luego  
voy  
a  
ver  
la  
de  
los  
Flinstons  
cueando  
se  
acaba  
me  
voy  
a  
ir  
a  
la  
casa

película  
Chucky's

accepted without accent  
English words spelled with Spanish Orthography

películas

accepted without accent

Flinstones  
cuando

English words spelled with Spanish Orthography  
addition of grapheme e

a		
jugar		
en		
la		
cosinita	cocinita	substitution of grapheme s for c
nos		
bamos	vamos	substitution of grapheme b for v
a		
la		
tienda		
a		
compra		
vaso		
porque		
mi		
tío		
dijo		
que		
compremos		
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%

### 003SS10-11-99

Student Spelling	Conventional	Classification
abia	habia	omission of grapheme h
una		
bes	vez	substitution of graphemes b for v and s for z
una		
princes	princesa	omission of grapheme a
que		
vivia		
con		
un		
rey		
vivian		
en		
un		

castillo		
y		
el		
dragon	dragón	accepted without accent
se		
llevo	llevó	accepted without accent
a		
la		
princesa		
a		
un		
cueba	cueva	substitution of grapheme b for v
luego		
vino		
el		
rey		
le		
dijo		
el		
rey		
que		
lo		
iba		
a		
mata	matar	omission of grapheme r
luego		
le		
dijo		
la		
princesa		
que		
no		
lo		
mates		
es		
solamente		
un		
amigo		
no		
te		
ba	va	substitution of grapheme b for v
aser	hacer	omission of grapheme h and sub of s for c
nada		

Invented Spelling rate: 7/56=12.5%

Conventional Spelling rate: 87.50%



**003SS11-23-99**

Student Spelling	Conventional	Classification
el mundo de las sirenas es un parque de diversiones hay muchos juegos para que se diviertan vengan pronto al parque de diversones	diviersiones	omission of grapheme i
el juego de las sirenas se encuentra a la izquierda de la entrda hay mucha agua y te puede llevar a México	entrada	omission of grapheme a

o		
otros	otras	substitution of grapheme o for a
partes		
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		
decirles	decirles	substitution of grapheme s for c
mucha	muchas	omission of grapheme s
cosas		
el		
barco		
de		
miedo		
esta		
atras		
de		
la		
tienda		
hay		
muchas	muchos	substitution of grapheme a for o
fantasmas		
te		
asutan	asustan	omission of grapheme s

mucho  
ahí

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

**003J1-19-00**

Student Spelling	Conventional	Classification
yo		
voy		
a		
ir		
a		
la		
casa		
para		
que		
me		
cambie		
i	y	substitution of grapheme i for y
luego		
me		
boi	voy	substitution of graphemes b for v and i for y
al		
pari	party	English words spelled with Spanish Orthography
de		
me		
prima		
liego	luego	substitution of grapheme i for u
pero		
luego		
me		
voy		
pero		
no		
me		
quero	quiero	omission of grapheme i
dormir		
luego		
le		
dige	dije	substitution of grapheme g for j
que		
me		
voy		
a		
dormir		
luego		

me		
voy		
a		
ir		
a		
la		
casa		
i	y	substitution of grapheme i for y
luego		
me		
quiero	quiero	omission of grapheme u
ir		
a		
la		
albrerca	alberca	addition of grapheme r
lego	luego	omission of grapheme u
me		
voy		

Invented Spelling rate: 10/57=17.5%

Conventional Spelling rate: 82.50%

### 003J2-17-00

Student Spelling	Conventional	Classification
habia		
una		
bes	vez	substitution of graphemes b for v and s for z
una		
nina	niña	accepted without accent
que		
bibia	vivia	substitution of grapheme b for v
junto		
de		
un		
labo	lobo	substitution of grapheme a for o
despues	después	accepted without accent
se		
fueran	fueron	substitution of grapheme a for o
y		
la		
degaran	dejaron	substitution of grapheme a for o and g for j
solo	sola	substitution of grapheme a for o
a		
que		
luego		
se		
acuerdan		

que		
ay	hay	omission of grapheme h
un		
mostro	montruo	omission of graphemes n and u
despues	después	accepted without accent
se		
lo		
camio	comio	substitution of grapheme a for o
a		
la		
niña		
que		
estaba		
en		
la		
casa		
despues	después	accepted without accent
se		
fueran	fueron	substitution of grapheme a for o
a		
atar	otra	substitution of grapheme a for o and rev. r and a
parte		
despue	después	omission of grapheme s
se		
fuero	fueron	omission of grapheme n
my	muy	omission of grapheme u
lejos		
a		
bibir	vivir	substitution of grapheme b for v
alla		
y		
se		
fuero	fueron	omission of grapheme n
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		
a		
enbitar	invitar	substitution of graphemes b for v and e for i
a		
unas		
amigas		
a		
mi		
alberca		
yo		
no		
enbito	invito	substitution of graphemes b for v and e for i
a		
ms	mis	omission of grapheme i
amigas	amigos	substitution of grapheme a for o
solamente		
una		
vez		
a		
ambitada	invitado	substitution of graphemes a for i and o and m for n
a		
un		
niño		
a		
lado		
de		
mi		
casa		
eso		
fue		
la		
ultima	última	accepted without accent
ves	vez	substitution of grapheme s for z
que		
ambitada	invitado	substitution of graphemes a for i and o and m for n
a		
un		
niño		
a		
mi		
alberca		

lla	ya	substitution of grapheme ll for y
no		
a		
enbitado	invitado	substitution of graphemes e for i and b for v
a		
nadie		
mas	más	accepted without accent
a		
mi		
alberca		
que		
tengo		
en		
mi		
casa		
orita	ahorita	omission of graphemes a and h
luego		
no		
puede	puedo	substitution of grapheme e for o
echame	echarme	omission of grapheme r
un		
brico	brinco	omission of grapheme n
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		
ir		
a		
mexicali	Méxicali	accepted without accent
a		
jugar		
con		
miss	mis	overexaggerated pronunciation
otros		
primos		
al		
burro		
y		
al		

trigo		
se		
huga	juega	omission of grapheme e and sub of h for j
a		
si		
se		
ponen		
un		
calsetín	calcetín	substitution of grapheme s for c
en		
la		
cabeza		
luego		
hagaras	agarras	addition of grapheme h and sub. of r for rr
un		
palo		
y		
los	nos	substitution of grapheme l for n
tiene		
que		
tachar		
con		
el		
palo		
para		
que		
esa		
persona		
sea		
el		
burro		
pero		
a		
mi		
nunca		
me		
tachan		
con		
me		
hagaco	agacho	addition of grapheme h and sub. of c for ch
y		
los		
tiro		
al		
suelo		
para		
que		



yo  
gane

Invented Spelling rate: 6/65=10%

Conventional Spelling rate: 90.00%

### 003J6-15-00

Student Spelling	Conventional	Classification
yo		
quiero		
a		
ir		
a		
la		
casa		
de		
mi		
amiga		
Diana		
ella		
es		
mi		
mejor		
amiga		
par	por	substitution of grapheme a for o
eso		
quiero		
ir		
a		
la		
casa		
yo		
quiero		
jugar		
con		
ella		
por		
eso		
es		
mi		
mejor		
amiga		
yo		
confio	confio	accepted without accent
en		
ella		
cundo	cuando	omission of grapheme a

ase	hace	omission of grapheme h and sub. of s for c
algo		
bien		
y		
ella		
confía	confía	accepted without accent
en		
mi		
cundo	cuando	omission of grapheme a
ago	hago	omission of grapheme h
algo		
bien		
yo		
quiero		
que		
ella		
tambien	también	accepted without accent
benga	venga	substitution of grapheme b for v
a		
mi		
casa		
para		
que		
juegemos	juguemos	addition of grapheme e and sub of ge for gue
a		
la		
cosinita	cocinita	substitution of grapheme s for c
yo		
quiero		
que		
ella		
tambien	también	accepted without accent
benga	venga	substitution of grapheme b for v
para		
que		
mi		
mama	mamá	accepted without accent
la		
cuide		
yo		
queiero	quiero	addition of grapheme e
que		
yo		
sea		
so	su	substitution of grapheme o for u
amiga		
favorita		

por  
eso  
es  
mi  
amiga

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		
fui		
a		
Disnelandia	Disneylandia	English words spelled with Spanish orthography
y		
tambien	también	accepted without accent
mos	nos	substitution of grapheme m for n
perdimos		
en		
Disnelandia	Disneylandia	English words spelled with Spanish orthography
y		
me		
meti	metí	accepted without accent
a		
la		
casa		
de		
Blaca	Blanca	omission of grapheme n
niebes	Nieves	substitution of grapheme b for v
y		
abia	habia	omission of grapheme h
una		
truga	bruja	substitution of t for b
y		
me		
asusto	asustó	accepted without accent
y		
me		
diberti	divertí	substitution of grapheme b for v
mucho		

Invented Spelling rate: 11/30=36.7%

Conventional Spelling rate: 63.30%

004J9-21-98

Student Spelling	Conventional	Classification
el		
viernes		
yo		
me		
fui		
a		

la		
playa		
y		
fui		
con		
mi		
familia		
y		
jugue	jugue	substitution of grapheme ge for gue
a		
la		
peloto	pelota	substitution of grapheme o for a
tabien	tambien	omission of grapheme m
al		
basquebbol	basketball	English words spelled with Spanish orthography
y		
jugue	jugue	substitution of grapheme ge for gue
me		
familia		

Invented Spelling rate: 5/25=20%

Conventional Spelling rate: 80%

004SS10-23-98

Student Spelling	Conventional	Classification
avia	habia	omission of grapheme h and sub. v for b
una		
ves	vez	substitution of grapheme s and z
tres		
brujas		
que		
querian		
a		
unos		
niños		
y		
las		
mamas	mamás	accepted without accent
no		
estaban		
en		
la		
casa		
y		
la		
buja		
las		



a		
sus	su	omission of grapheme s
casa		
y		
lla	ya	substitution of grapheme ll for y
no		
bolbieron	volvieron	substitution of b for v

Invented Spelling rate: 17/76=22.4%

Conventional Spelling rate: 77.60%

004SS11-23-98

Student Spelling	Conventional	Classification
cuand	cuando	omission of grapheme o
yo		
me		
despierto		
a		
mi		
me		
la		
celebración	celebración	substitution of grapheme s for c
en		
Navibad	Navidad	substitution of grapheme b for v
mi		
mama	mamá	accepted without accent
me		
da		
un		
abrasso	abrazo	substitution of grapheme for s for z
porque		
es		
mi		
cumplanos	cumpleaños	omission of grapheme e and sub of n for ñ
me	mi	substitution of grapheme e for i
papa	papá	accepted without accent
me		
da		
una		
computadora		
voy		
a		
pedir		
una		
munéca		
para		
jugar		



con  
ella  
mi  
mama  
hace  
tamales  
muy  
vuenos

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  
cumpreonos  
de  
mi  
tia  
mari  
pero  
no  
se  
cuandos  
años  
cumpre  
pero  
yo  
le  
voy  
a  
preguntar  
a  
mi  
mama

cumpleaños

substitution of graphemes r for l and n for ñ

tía

accepted without accent

cuantos

substitution of grapheme d for t

cumple

substitution of grapheme r for l

mamá

accepted without accent

Invented Spelling rate: 6/31=19.4%

Conventional Spelling rate: 80.60%

004SS2-16-99

Student Spelling	Conventional	Classification
Yo		
en		
el		
ivierno	invierno	omission of grapheme n
me		
visto		
muy		
abrigadita		
porque		
ase	hace	omission of grapheme h and sub of s for c
mucho		
frío		
y		
tambien	también	accepted without accent
ago	hago	omission of grapheme h
un		
muno	mono	substitution of grapheme u for o
de		
nieve		
Le		
pomgo	pongo	substitution of grapheme m for n
primero		
la		
lola	bola	substitution of grapheme l for b
grande		
Despues		
la		
mediana		
luego		
la		
chicita	chiquita	substitution of grapheme c for qu
luego		
le		
la		
nariz	nariz	substitution of grapheme s for z
de		
zanaoria	zanahoria	omission of grapheme h
las		
manos		
son		
de		
palo		
se		

los  
encuentran  
en  
la  
nieve  
Tambien  
ay  
collotes  
y  
pueden  
morderte

también  
hay  
coyotes

accepted without accent  
omission of grapheme h  
substitution of grapheme ll for y

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

004J3-10-99

Student Spelling	Conventional	Classification
yo		
ayer		
fui		
al		
paique		
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	hice	omission of grapheme h and sub s for c
toda		
porque		
nos		
fui		
a		
Mexico	México	accepted without accent
con		
porque		
se		
yva	iva	substitution of graphemes y for i and v for b
a		
morir		
mi		
no		
me		
dejo		
quedar		
con		
mi		
tia	tía	accepted without accent
porque		

tine  
muchos  
niños  
que  
cuidar  
son  
sus  
hijos

tiene

omission of grapheme e

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  
tambien  
voy  
a  
comprar  
una  
mochila  
porque  
mi  
hermanito  
me  
la  
ropio  
cuado

también

accepted without accent

rompió  
cuando

omission of grapheme m  
omission of grapheme n

me		
estaba		
bañando		
en		
la		
regadera		
mi		
mama	mamá	accepted without accent
le		
pregunto	preguntó	accepted without accent
porque		
lo		
iso	hizo	omission of grapheme h and sub s for z
el		
le		
dijo		
porque		
ella		
me		
abiento	avento	substitution of grapheme b for v and add. of i
mis		
carros		
pero		
no		
sierto	cierto	substitution of grapheme s for c
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		
sabado	sábado	accepted without accent
tuve		
una		
fiesta		

pero		
no		
era		
mia		
era		
de		
mi		
hermano		
Armando		
no		
habia	había	accepted without accent
piñata		
nada		
mas	más	accepted without accent
pastel		
regalos		
sopa		
pero		
no		
me		
gusta		
la		
sopa		
porque		
la		
carne		
estaba		
muy		
ría	fría	omission of grapheme f
y		
no		
havia	había	substitution of grapheme v for b
asador		
por		
eso		
no		
me		
comi	comí	accepted without accent
la		
carne		
para		
el		
dia	día	accepted without accent
de		
los		
padres		
le		

regale  
el  
libro  
la  
foto  
la  
corbata  
fuimos

a  
disnylandia  
nos  
divertimos  
mucho

Disneylandia

English words spelled with Spanish orthography

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  
despues  
nos  
fuimos

al  
parque  
pero  
no  
crea  
que

nos  
fui mos  
solas  
nos

después

accepted without accent

fuimos

accepted with space



fuimos		
con		
la		
mamá		
de		
Judith		
si		
no		
nos		
uviera	hubiera	omission of grapheme h and sub v for b
llevabo	llevado	substitution of grapheme b for d
la		
mamá		
de		
Judith		
nos		
uvieran	hubieran	omission of grapheme h and sub v for b
revado	robado	substitution of graphemes e for a and v for b
no		
uviera	hubiera	omission of grapheme h and sub v for b
benido	venido	substitution of grapheme b for v
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		

aya	allá	substitution of grapheme y for ll
bajo	abajo	omission of grapheme a
luego		
cuando		
me		
subi	subí	accepted without accent
mi		
mama	mamá	accepted without accent
ya		
esta	está	accepted without accent
dormida		
y		
mi		
hermano		
se		
durmio	durmió	accepted without accent
con		
eya	ella	substitution of grapheme y for ll
yo		
me		
fui		
a		
mi		
cuarto		
le		
vaje	bajé	substitution of grapheme v for b
al		
volumen		
y		
vi		
camila		
pero		
mi		
mamá		
ogo	oyó	substitution of grapheme g for y
y		
la		
a pago	apagó	accepted with space

Invented Spelling rate: 5/55=9%

Conventional Spelling rate: 91%

004SS10-1-99

Student Spelling

Conventional

Classification

Hace

mucho

tiempo

el		
papá		
de		
cenisienta	Cenicienta	substitution of grapheme s for c
murio	murió	accepted without accent
y		
cenisiente	Cenicienta	substitution of grapheme s for c
iso	hizo	omission of grapheme h and sub s for z
el		
trabajo	trabajo	substitution of grapheme d for b
de		
la		
casa		
y		
las		
hermanas		
su		
mamá		
siempre		
se		
ivan	iban	substitution of grapheme v for b
dejadan	dejaban	substitution of grapheme d for b
a		
Cenisienta	Cenicienta	substitution of grapheme s for c
en		
la		
casa		
asiendo	haciendo	omission of grapheme h and sub s for c
el		
quehacer		
su	sus	omission of grapheme s
amigos		
los		
ratones		
le		
dise	dice	substitution of grapheme s for c
todo		
lo		
que		
saben		
lo		
que		
dise	dice	substitution of grapheme s for c
las		
dos		
hermanas		
y		

su		
mamá		
eyos	ellos	substitution of grapheme ll for y
olleron	oyeron	substitution of grapheme ll for y
que		
se		
iban		
a		
ir		
au	a	addition of grapheme u
daile	baile	substitution of grapheme d for b
Cenisienta	Cenicienta	substitution of grapheme s for c
les		
dijo		
que		
si		
puede		
ir		
al		
baile		
dijoron	dijeron	substitution of grapheme o for e
que		
si		
pero		
si		
encuentra		
un		
vestido		
bonito		
los		
ratones		
le		
encontraron		
un		
collar		
una		
rasa	rosa	substitution of grapheme a for o
tela		
Cenisienta	Ceniciente	substitution of grapheme s for c
se		
encontro	encontró	accepted without accent
a		
su		
aba	hada	omission of grapheme h and sub b for d
azul		
le		
dio		

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		
lugo	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		
mondo	mundo	substitution of grapheme o for u
de		
las		
sirenas		
es		
un		
parque		
de		

ilusiones		
te		
va		
encantar		
cuando		
estas		
alli	allí	accepted without accent
te		
emocionaras	emocionaras	substitution of grapheme s for c
a		
la		
izquierda	izquierda	substitution of grapheme s for z
de		
la		
entrada		
esta	está	accepted without accent
la		
recamara		
es		
una		
recamara		
muy		
grande		
azul		
y		
las		
sirenas		
nadan		
por		
el		
agua		
a		
la		
derecha		
de		
la		
entrada		
esta	está	accepted without accent
la		
tienda		
de		
las		
sirrenas	sirenas	overexaggerated pronunciation
la		
tienda		
es		
rosita		

puedes		
comprar		
serial	cereal	substitution of graphemes s for c and i for e
sopa		
es		
un		
lugar		
grande		
hay		
mucha		
gente		
en		
medio		
de		
la		
entrada		
esta	está	accepted without accent
la		
casa		
de		
las		
sirenas		
la		
casa		
de		
las		
sirenas		
es		
muy		
grande		
verde		
y		
juegan		
a		
las		
escondidas		
vengan		
muy		
pronto		
los		
esperere	esperará	substitution of grapheme e for a
al	el	substitution of grapheme a for e
mundo		
de		
las		
sirenas		

Invented Spelling rate: 7/103=6.8%

Conventional Spelling rate: 93.20%

004J1-19-00

Student Spelling	Conventional	Classification
yo		
ayer		
fui		
a		
ver		
la		
novela		
de		
Sofiadoras		
en		
la		
casa		
de		
Lesly		
Garsia	Garcia	substitution of grapheme s for c
en		
la		
casa		
de		
Lesly		
estudo	estuvo	substitution of grapheme d for v
vien	bien	substitution of grapheme v for b
linpia	limpia	substitution of grapheme n for m
cagadita	calladita	substitution of grapheme g for ll
cuando		
empeso	empezó	substitution of grapheme s for z
Sofiadoras		
todos		
espudieron	estuvieron	substitution of graphemes p for t and d for v
nuy	muy	substitution of grapheme n for m
cagadita	calladito	substitution of graphemes ll for g and a for o
no		
espaban	estaban	substitution of grapheme p for t
gritando		

Invented Spelling rate: 10/34=29.4%

Conventional Spelling rate: 70.60%

004J2-24-00

Student Spelling	Conventional	Classification
a		



mi		
me		
gusta		
mucho		
hacer		
tarea		
porque		
las		
mutiplicaciones	multiplicaciones	omission of grapheme l and sub s for c
son		
muy		
facil	fácil	accepted without accent
porque		
son		
como		
las		
sumas		
dividir		
es		
lo		
mismo		
que		
mutiplicaciones	multiplicaciones	omission of grapheme l and sub s for c
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  
 algunas  
 de  
 las  
 tablas

más                      accepted without accent

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

004J3-10-00

Student Spelling	Conventional	Classification
yo		
haora	ahora	reversal of graphemes h and a
voy		
a		
ir		
a		
la		
casa		
de		
mis		
primos		
porque		
mi		
tia	tía	accepted without accent
Mari		
nos		
va		
a		
quevar	llevar	substitution of grapheme qu for ll
a		
ver		
la		

película	película	accepted without accent
de		
A		
Night		
at		
the		
Roxberry		
en		
el		
cine		
pero		
mi		
tía	tía	accepted without accent
nos		
va		
a pagar	accepted with space	
el		
boleto		
a		
todo	toda	substitution of grapheme o for a
la		
familia		
somos		
personas		
en		
mi		
familia		
pero		
lla	ya	substitution of grapheme ll for y
van		
a		
ser		
perzonas	personas	substitution of grapheme z for s
porque		
mi		
mamá		
va		
a		
tener		
un		
nuevo		
bebe	bebé	accepted without accent
no		
sabemos		
como		
se		
va		

a		
llamar		
porque		
todos		
se		
están		
peleando		
por		
nombre	nombres	omission of grapheme s
esos		
nombres		
son		
Junior		
Ruben		
Jerardo	Gerardo	substitution of grapheme j for g
por		
ultimo	último	accepted without accent
Chistofo	Christopher	English words spelled with Spanish orthography
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	accepted without accent
estaba	estaban	omission of grapheme n

Invented Spelling rate: 9/112=8%

Conventional Spelling rate: 92%

004J5-23-00

Student Spelling

Conventional

Classification

mi

favorito

tiempo

del

dia

día

accepted without accent

es

cuado

cuando

omission of grapheme n

empieza

Sñadoras

porque

es

mi

favorito

progama

programa

omission of grapheme r

vecez

veces

substitution of grapheme z for s

tambien

también

accepted without accent

me

a

ver

la

de

las

que

se

llama

Rosalinda

pero

nada

mas

más

accepted without accent

la

veo

minutos

porque

en

la

mañanita

no

me

quiero

le vantar

levantar

accepted without accent

para

ir

a

la

escuela

porque		
no		
quiero		
faltar		
a		
la		
escula	escuela	omission of grapheme e
nigun	ningún	accepted without accent
día	día	accepted without accent
mas	más	accepted without accent
mis		
amigas		
me		
cuentan		
la		
novela		
si		
no		
la		
veo		
ellas		
me		
la		
cuentan		
porque		
ellas		
tambien	también	accepted without accent
son		
noveleras		
y		
igual		
yo		

Invented Spelling rate: 4/77=5.2%

Conventional Spelling rate: 94.80%

004J6-15-00

Student Spelling	Conventional	Classification
el		
sabado	sábado	accepted without accent
ba	va	substitution of grapheme b for v
hacer		
el		
cumpleaños		
de		
mi		
hermano		

Armando		
va		
a		
cumplir		
años		
yo		
le		
voy		
a		
regara	regular	omission of grapheme r and sub of r for l
el		
tatin	patín	substitution of grapheme t for p
del		
diablo		
mi		
mamá		
le		
va		
a		
regalar		
dolares	dolares	substitution of grapheme ll for l
mi		
hermanito		
chiquito		
que		
se		
llama		
Omar		
le		
va		
a		
regalar		
un		
puppy		
de		
Blus	Blues	English word spelled with Spanish Orthography
Clue		
pero		
lo		
que		
más		
le		
va		
a		
justar	gustar	substitution of grapheme j for g
el		
lo		

que mi papá le va a regalar le va a reglar un juego del Nintendo y el 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%

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