SPELLING DEVELOPMENT:
A COMPARATIVE STUDY OF ADULT LEARNERS
AND GRADE SEVEN CHILDREN

JULIE BORAS

B.Ed., University of Lethbridge, 1982

A Project
Submitted to the School of Graduate Studies
of the University of Lethbridge
in Partial Fulfillment of the
Requirements for the Degree

MASTER OF EDUCATION

FACULTY OF EDUCATION

LETHBRIDGE, ALBERTA

June 2003

Dedication

This project is dedicated to my family for all their encouragement and support in pursuing my degree. As Walt Disney once said, "You can dream, create, design, and build the most wonderful place in the world, but it requires people to make it a reality." It is through the help of my family that my dream has now become a reality.

Thank you to my parents, Joseph and Teresa, who have always encouraged me to follow my dreams. Their words of encouragement have led me to where I am today. Thank you also to my mother-in-law, Anne, for her moral support.

Last, but not least, a special thank you to my beautiful daughters, Nicole and Rachel, for their understanding during the last several years as I worked towards completing my degree. A very special thank you to my husband, David, for his patience and his belief in me. The journey has been my reward; however, without the support of my family, this journey – my dream – would not be possible.

Abstract

This study examines the spelling development of adult learners and Grade 7 children. The study investigates this central question: Does the spelling development of adult learners differ from that of Grade 7 children? It also addresses sub questions about spelling development and its association with age, gender differences, and first language experiences. The study explores other factors affecting a student's perception of spelling ability. The participants for this research were drawn from two groups. The first group consisted of a cluster sample of 18 students registered in a reading or English class in the Upgrading program at a southern Alberta community college. Students registered in this course were over age eighteen and had been assessed by the Assessment Centre as having a scale score of 541-560 in the writing skills section of the Canadian Achievement Test (CAT). The other participants in the study were 14 classroom children from two Grade 7 rural schools in southern Alberta. These children were approximately twelve or thirteen years of age. The performance of adult learners and Grade 7 children on the Wide Range Achievement Test (WRAT3) was compared according to Henderson's five stages of spelling development. Participants' responses, using the Likert scale, to 20 statements derived from the literature were also compared. The results of the study reveal that the spelling development of the adult learners did not differ from that of Grade 7 children; however, there were differences in gender and perception. This information helps to suggest causes of and reasons for the differences between adult learners and children in Grade 7 and explores implications for teaching.

Acknowledgments

Table of Contents

List of Tables

Introduction and Statement of the Problem

The purpose of this study is to determine whether spelling development of adult learners differs from that of children in Grade 7. There are several reasons for choosing this problem. First, I am a spelling instructor at a southern Alberta community college that instructs students who have been assessed by the Assessment Centre as having a severe spelling problem. Therefore, I have a strong interest in researching how adult learners spell in order to provide effective spelling instruction that will foster continuous learning in spelling, vocabulary, reading, and writing.

Second, there are few resources available that focus specifically on spelling for educators of adult learners. Most of the texts or workbooks in spelling are not designed for adults, and some of the material is not current. As a result, there is a need to develop appropriate spelling resources; however, before developing these materials, one needs to understand how adult learners learn to spell.

Third, the literature available on adult learners, specifically on the topic of spelling, is very limited. The few studies available indicate there needs to be a greater understanding of the developmental stages of spelling since "Some students are unable to progress through these stages without specific instruction" (Masterson & Crede, 1999, p. 243).

Last, but not least, there is an association that some students make between their spelling ability and their writing ability as a result of their inability to spell words correctly. Furthermore, when writing, students limit their choice of words to only words they can spell.

Research Question

The topic chosen for this research proposal examines whether there are differences in spelling development between adult learners and children in Grade 7. Specifically, does the spelling development of adult learners differ from that of Grade 7 children? Following from the main question are concerns as to whether spelling development is associated with age. Further, are there gender differences in spelling development? Does one's native language influence spelling development? What factors affect a student's spelling development? Does an individual's perception of spelling ability influence spelling scores?

Definition of Terms

For the purposes of this study, *adult learner* refers to a student who is over the age of eighteen and is attending a post-secondary institution. The term *assessed,* in this study, refers to an individual who has completed a placement test at the Assessment Centre at a community college to determine what courses he/she must enroll in order to obtain the necessary skills to get into a program of study. Students enrolled in the reading and English class would have been assessed as having a scale score of 541-560 on the writing skills section of the Canadian Achievement Test (CAT).

Significance of the Study

This study has significance in a number of areas. Besides my own personal interests, this study will also benefit English instructors who have students who fear writing because of their inability to spell. According to Abell (1994), "Spelling is seen as an indication of status and education. Those who are not good at spelling often feel embarrassed about their lack of skill and are unhappy about allowing others to see what

they have written" (p. 9). As a result, they may be reluctant to write at all. Since "spelling is only necessary as part of writing," any instructor who has students write in his/her class is helping students develop their spelling (p. 12). For in order to develop spelling, "Pupils must be involved in an active writing program in all areas of the curriculum, not just spelling" (Gordon, 1994, p. 4). Therefore, it is crucial that spelling development is not perceived to be developed solely in an English class.

This research would also be of benefit to other researchers since "Current research has challenged the traditional notion that spelling must be taught in a rote manner focusing on memorization of the sounds of letters" (Hanlon & Cantrell, 1999, p. 1).

Limitations and Delimitations

There were several limitations on the comparative study of adult learners and Grade 7 children. One of those limitations was the number of participants that were available to participate. Out of the four classes that participated in the study, two of the classes had enrollments of 12 students. Furthermore, one of those classes with twelve students had students that had already participated in the study approximately a month earlier.

Another limitation with this study was that at the time of testing, some participants who were granted permission to participate were absent during the test day. As a result, these absent students were not rescheduled to participate in order to prevent the WRAT3 spelling words from being shared with other students.

The third limitation to this study was the number of male participants. Very few males volunteered to participate in the study. Perhaps the topic of the study and their perception of spelling are what prevented them from participating.

The delimitation of the study that was initially imposed was that participants of the study had to be in Grade 7. The norms for the WRAT-R, an earlier version of the test, had grouped Grade 7 students and adults scores; however, the WRAT3, a new version of the test, now returned to single level format for use with all individuals aged 5-7.

Literature Review

Literature reveals that "Children in schools today can usually read better than they can spell" (Barbe, Francis, & Braun, 1982, p. 1). There are several reasons for such a finding. Barbe et al. believe that one's spelling ability is due to the training programs that teachers participate in that emphasize reading strategies and place less emphasis on spelling. As a result, Barbe et al. believe, "Teachers who are not familiar with the literature devoted to spelling, base their instruction on tradition than on results of spelling research" (p. 1).

Asselin (2001) concurs that for many adults spelling was separate from learning to read or from developing vocabulary. Individuals in the past learned how to spell through the traditional method of rote memorization because that was how teachers taught spelling. Instruction often remained tied to older spelling programs that relied on Monday to Friday memorization of deconceptualized lists of words, or, in contrast, relied too much on individual learning and teaching. Often, teachers taught spelling in the same manner as their previous teachers; therefore, beliefs and practices around spelling were difficult to change.

Spelling Development

Read, a linguist at the University of Wisconsin, was one of the first researchers to examine how children learn to spell (cited in Hodges, 1984). Read studied how four to eight year olds used their knowledge of the sounds in spoken English. Read's study involved 20 preschool children who were able to identify and name the letters of the alphabet and relate the names of the sounds of words. His study revealed that "Even at an early age children are able to detect the phonetic characteristics of words that English

spelling represents" (Hodges, 1984, p. 1). Furthermore, Read noticed that even though young children misspelled most of the words they attempted, they misspelled the words in the same way.

According to Masterson and Crede (1999), "The development of spelling skills is not random, but rather evolves in stages" (p. 243). These stages have been described by researchers such as Ehri (1987), Gentry (1982), Bourassa & Trieman (2001), and Henderson (1990). The developmental sequences described by Ehri and Gentry consist of three stages. Henderson's system is slightly more elaborate and includes five stages of spelling, progressing from nonsymbolic scribbles to correct spellings. According to Masterson and Crede (1999), children pass through the following stages in acquiring conventional spelling:

1. Preliterate stage: Writing consists of scribbles, drawings, and some letters. During this stage, children develop early concepts such as differentiation between writing and pictures, directionality (i.e. writing from right-to-left, top-to-bottom), and basic phonemic awareness.

2. Letter-name stage: Phonemic awareness skills improve and children employ the alphabetic principle, representing each sound in the target word by a letter. Invented spellings are based on names (i.e., phonetic similarity between target sounds and the names of letters. For example, because /i/ and /I/ are closely related phonetically, children will often substitute the letter *e* (pronounced /i/) for target words containing the /I/, such as in *pig* or *sit*. Many sight words are spelled correctly during this stage.

3. Within-word patterns stage: Orthographic patterns, such as those governing the use of short and long vowels, are learned. In addition to the pattern principle, children simply begin to employ the pattern by meaning principle (e.g., spelling the past tense morpheme as –ed).

4. Syllable juncture stage: Use of the doubling principle (i.e., doubling the final consonant of a syllable containing a short vowel before adding a suffix) and attention to patterns present in unstressed and stressed occurs.

5. Derivational constancy stage: Spellers come to know roots and their derivations and use this knowledge consistently. (Masterson & Crede, 1999, pp. 243-244).

"Inspired by Read's research, Beers and Henderson examined first- and second-grader's writings for developmental changes in spelling" (Ganske, 1999, p. 1). Their results confirmed Read's observations that children progress through spelling in stages. For example, they move from "letter-naming" to "within-word patterns." "Henderson's initial outline for progression was later refined and extended through the work of Templeton and Schlagal" (Ganske, 1999, p. 1). Templeton then looked at older students' understanding of base words and their derived forms, and Schlagal examined how children's error types changed as they moved from sound-letter (letter-name stage) and sound-pattern (within-word pattern stage) in primary grades to more complex levels of pattern and meaning in the upper grades. "His results furthered the argument that spelling unfolds along developmental lines and underscored the importance of teaching and studying words in ways that emphasize their invariant features" (Ganske, 1999, p. 1). Furthermore, in a study conducted by Treiman, "The stages of acquisition appear to

characterize spelling development regardless of language ability" (Masterson & Crede, 1999, p. 244). Treiman's study of spelling acquisition in children with dyslexia showed that although these children lagged behind in their development, their errors were indistinguishable from other children.

According to Viise's 1995 study of adult literacy learners compared to classroom children, "Adults and children's spelling skills do develop in a similar fashion, and that they both follow a developmental pattern of spelling acquisition" (cited in Bardine, 1997, p. 2). Viise studied 195 children and 124 adult literacy learners by examining their spelling errors and noticed that "Children and adults showed similar mastery in recognizing single consonants, single end consonants, and short vowel inclusions" (Bardine, 1997, p. 2). However, adults had a difficult time marking syllables in words and had a strong tendency to leave out vowels in their spellings compared to children. Another difference was that adults tended to leave off or change simple suffixes such as -en, -er, -ed, and –es, a problem that rarely occurred among children.

"Adults did seem to excel in understanding prefixes and suffixes, although this did not alter their pattern of spelling acquisition. Also, adults had a higher rate than children of mastery of certain spelling features, including –ar, -er, and –or endings, -ed and –ing endings, and contractions" (Bardine, 1997, p. 2). When looking at syllable junctures of intact words, adults performed better than children at separating and spelling words such as "message." Bardine's study reveals that students must master simple features before difficult spelling features can be mastered. This belief supports the findings of researchers such as Read (1986), Henderson and Beers (1980), Masterson and Crede (1999), that one's spelling skills develop in stages and not just randomly. "For

instance, students in both age ranges generally learned and understood single-beginning and consonant endings before they were able to master double consonants or double consonant clusters" (Bardine, 1997, p. 3).

Perceptions of Spelling

The literature supports that adults and children's skills develop in stages, but does their perception of their ability to spell influence test scores? According to a questionnaire designed by Rios and Vadon, students who perceived themselves to be good spellers were in fact good spellers (Rios, 2000). A questionnaire was developed to measure the following:

1. How much time was spent on reading.

2. Whether reading was considered as masculine or feminine by the genders.

3. Whether or not they considered themselves good spellers (Rios, 2000, p. 23).

Their findings revealed that those who scored highest on the spelling test also claimed to have read more than two hours a day. "Ninety-five percent of the females indicated that reading is a feminine activity" (p. 13). When writing was compared with reading, "Seventy-five percent of the females considered writing a masculine activity" (p. 13). Interestingly, "[Of the] thirty-five percent of the males that considered themselves good spellers, sixty proved to be correct. Forty percent of the females thought of themselves to be good spellers and 100% of that forty was correct" (Rios, 2000, p. 13).

In a study conducted by Hughes and Searle (2000), spelling words correctly mattered to the good spellers, for "they understood from an early age that spelling played a part in how they presented their writing and how their readers received it" (p. 205). They did not wish to be seen by others, including their teachers, as poor writers or poor

spellers. As a result, they tended to take personal responsibility for monitoring and correcting their writing before it was seen by anyone. This characteristic distinguished the good spellers from the less able spellers.

"The contrasts were striking between behaviors and attitudes around writing and spelling amongst the good spellers and those of the children who were excellent, active readers, but who had stalled in their spelling" (Hughes & Searle, 2000, p. 206). For instance, children who were excellent, active readers disliked writing and preferred to read or do other activities. In addition, these students did not write with the personal engagement of the good spellers. Their writing lacked evidence of risk-taking in plot and vocabulary that one might expect from such good readers. Many of the students saw editing as someone else's responsibility rather than their own. As a result, these children were generally weak at recognizing misspellings even though they were good readers – perhaps because they avoided self-editing.

These students who were excellent, active readers also overestimated which of the spellings were correct. For example, one student in the study was sure that nineteen of her sixth-grade dictated words were correct, in fact, only four were. Even when they did recognize a misspelling, they were reluctant to generate alternatives. These particular students believed that "Spelling is more arbitrary than systematic, a matter of learning each individual word rather than generalizing across words" (Hughes & Searle, 2000, p. 207). Furthermore, these students relied on sound alone as their determining logic for spelling words correctly. As a result, they encountered problems when they needed to integrate sound with graphic or meaning considerations. For example, one student wrote the words "responsible" and "responsibility" correctly, but then wrote "irrisponsibility"

(p. 207). She was aware of the meaning link; however, that information was overridden by differences in sound.

Apel (2001) points out that "Students who struggle with spelling may develop a poor sense of self as a language user and learner" (p. 4). As a result, these students avoid writing longer writing samples with complex, multi-morphemic words in an attempt to avoid appearance of being a poor speller or as a result of it. According to Stewart (1988), "Safe writers, who write short, well structured pieces with little or no risk taking in choosing words might appear to be better spellers because of the level of communication they are choosing" (p. 57). Therefore, because their work is free of misspellings, they might be evaluated as being "good spellers."

However, children are not the only ones who experience these feelings. According to Abell (1994), "Many adults in Britain feel unhappy with their spelling" (p.7). They believe that the way words are spelled is a reflection of the culture of a language; therefore, if they are unable to spell accurately, they feel that they are less cultured than those who do. Furthermore, spelling is seen as an indication of status and education. "Those who are not good at spelling often feel embarrassed about their lack of skill and are unhappy about allowing others to see what they have written" (Abell, 1994, p. 7). As a result, they may be reluctant to write at all.

According to Scott (2000), "Spelling frustrates not only the poor speller but also the teachers and language specialists" (p. 67). For teachers and students, spelling is considered a necessary but altogether disliked component of the curriculum due to the gap between effort and results that is frequently seen. The question that seems to arise among teachers is how much of spelling is "taught" and how much is "caught"? Those on

the "caught" side of the fence believe that spelling will develop naturally in a literacy-rich environment. "They point out that some of the spelling 'skills' taught (e.g., schwa) are not used even by good spellers and that such instruction is not only boring, but fails to transfer to text-level writing" (Scott, 2000, p. 67). On the other hand, those who believe in spelling instruction point to the lack of evidence for and confidence in naturalistic methods. Nevertheless, literature supports that "poor spelling negatively affects teacher evaluations of writing, even when content and structure are controlled" (Scott, 2000, p. 67).

Perceptions of spelling have also been reflected in researchers. For example, "In 1980, Venezky noted that few cognitive scientists showed an interest in spelling processes and only a handful in the last decade have been suggested that this topic was worthy of serious investigation" (Kamhi & Hinton, 2000, p. 38). Kamhi and Hinton suggest several reasons for this lack of respect. "One reason centers on the scientific privilege given to spoken language that has a rich tradition in linguistics" (p. 38). In addition, very few linguists are interested in studying spelling, perhaps because many view it as a literary convention or a school subject, rather than a scientific problem of language. Another reason for its neglect has been "the deceptive simplicity of spelling" (p. 38). Spelling is often viewed as a minor problem that is correctable with spell checkers or clerical assistance. A third factor contributing to spelling's lack of respect is that it has been viewed as a visually-based process rather than a language-based process. According to Kamhi and Hinton (2000), "Little evidence has been found for the importance of nonlinguistic factors such as visual memory. Individual differences in spelling ability are primarily caused by differences in the knowledge and use of sound-

spelling information rather than differences in some nonlinguistic factor" (p. 48). Poor spellers may rely heavily on visual strategies only because their phonological knowledge is limited.

Gender Differences

Are there gender differences in perceptions and spelling ability? Various studies suggest that there are (Fitzpatrick, 1960; Hodges, 1981; Read, 1986; Rios, 2000). A study by Stipek (cited in Rios, 2000) looked at sex differences in children's attributions for success and failure on math and spelling tests using 82 boys and 83 girls in two Grade 5 classrooms and two Grade 6 classrooms. Stipek's results showed that "One significant sex difference in attributions among in the spelling failure group showed that boys were more likely than girls to attribute their failure to an unstable cause: bad mood, which would not threaten their self-esteem or their expectations for future success" (Rios, 2000, p. 22).

According to Rios (2000), "Research indicates that girls read better than boys as a whole and because of the relationship between reading and spelling, one might assume that girls would also perform better in spelling than boys" (p. 7). However, there is a basic difference between reading and spelling. Reading is a decoding process, and spelling is an encoding process (Fielding, 1995). Spellers are required to write what they hear or think, whereas readers are required to say what they see on print. Therefore, "Although a high correlation exists between the two subjects, one may find good spellers who are not good readers" (p. 7).

Looking specifically at gender differences in spelling development between adult learners and children, there is a difference. Young adults (ages 17 to 21) show no

significant differences in spelling ability between genders; however, in children (Grades 1 through 6) girls generally do better than boys (Rios, 2000).

In a study conducted by Rios (2000) with young adults (ages 17 to 21), there was no significant difference in spelling ability between the genders. Her findings showed only that "Females performed slightly better in a written test (40. 25 percent correct) compared to males who scored 36.75 percent correct" (p. 12).

Another study conducted by Allred (cited in Rios, 2000) on gender differences in spelling achievement with Grades 1 through 6 students revealed that girls in general spell better than boys do. However, an interesting study conducted by Clarke (cited in Rios, 2000) on achievement differences using information obtained from the California Test Bureau (CTB) indicated no sex difference in the area of general intelligence: "Any difference in performance was due to differences in mental ability and not due to the sex of the individual" (p. 18). The California Test of Mental Maturity (CTMM) and the California Achievement Test (CAT) were the two test scores obtained from the California Test Bureau. Clarke used a random sample of 75 boys and girls from Grades 3, 5, and 8. The sample was taken from 75 different school systems and cities. Clarke noted that for spelling, girls performed better at all grades. Therefore, "In the basic skill areas of language (mechanics of English and spelling) the performance of girls is superior to boys. The superior achievement of girls on both the mechanics of English and spelling implies that significant sex differences do exist in the language area" (Rios, 2000, p. 19).

Clarke's findings concur with the State Department of Education's 2000 achievement test results in grades 3-11. Specifically, all students in grades 3 through 8 took the Iowa Test of Basic Skills (ITBS), and all students in grades 9, 10, and 11 took

the Tests of Achievement and Proficiency (TAP). The results of these achievement tests showed significant discrepancies in the area of written language between the sexes (State Moves, 2000). In the areas of spelling, capitalization, punctuation, and grammar, girls scored above the national average whereas the boys scored below the national average at every grade level. Classroom teachers also noted these differences, observing that difficulties with spelling and reluctance to write were more common among boys than among girls.

<div align="center">First Language Experiences</div>

Standard spelling of the English language appears to be easy for some students, but for other students it is very difficult. For English as a Second Language (ESL) students, "Skills taught in one language transfer to the second language" (Dildine, 1994, p. 51). According to Dildine, learners learn to read and write only once, because what they have learned about literacy transfers or is applied to new literacy situations. If one looks at the writing samples of ESL children, one notices the similarity to young native speakers who are learning to write (p. 61). For example, ESL children exhibit Henderson's stages of spelling development, such as invented spelling, letter forms, etc. The uniqueness is apparent in the child's pronunciation, phonetic cues, or semantic knowledge of English.

According to a study that examined native Spanish-speaking first graders in a bilingual program in Puebla, Mexico, children use the knowledge they hold about what writing is, how writing is created, and the conventions of writing in their first language to help them successfully write in the second language (Dildine, 1994). In other words, children in this study used "their own pronunciations, along with their knowledge of

letter/sound correspondence in both English and Spanish to speculate and experiment with the phonology and orthography to write what they wanted to say in English" (p. 53). For example, some Spanish-speaking children would write the words *brother* as broder, *little* as lidur, and *water* as wader. The rationale behind these spelling errors is that "The English /t/ and /ð/ sounds are often represented by the Spanish speakers with the letter d. The /t/ and /ǒ/ sound in Spanish are pronounced more closely to the way English speakers would pronounce a /d/ sound" (p. 53).

Differences were also observed in the English sh versus the Spanish ch sounds. "The /s/ sound (as in shut) is not part of the Spanish sound system and many beginning English speakers substitute the more familiar /č/ sound (as in chain) which is found in Spanish" (Dildine, 1994, p. 54). Therefore, the study revealed some students spelling short as chort and wash as wach.

Differences in vowels were also observed. In Spanish there are fewer vowel sounds than in English, and the letters are given letter names that correspond exactly to the pronunciation when reading orally. However, in English the letter a represents various sounds, such as /ei/ as in day, /a/ as in among, or /ǎ/ as in bat. Furthermore, silent letters are present in the English language whereas in Spanish all vowel letters are pronounced.

Difficulties in spelling are not limited to Spanish-speaking individuals, for Italians, Germans, Dutch, and Arabians, to name a few, experience their own unique differences. For example, Arabians acquiring English are confronted with several linguistic difficulties, such as the following:

1. The writing system in Arabic goes from right to left. The way the Arabic letters are written depends upon their position in Arabic words (i.e., beginning, middle, or end of the word).

2. Some sounds in English do not exist in Arabic (an example is the substitution of the /b/ for /p/ in 'beople').

3. Arabic has no written vowels. Vowels are delineated by diacritical marks.

   (Dildine, 1994, p. 56)

As mentioned earlier, ESL students use their own pronunciation and knowledge of letter/sound correspondence to write in English. However, several studies on the spelling of Black English and Southern dialect speakers have shown that pronunciation affects the written product. In a study conducted by Treiman, Goswami, Tincoff, and Leevers (1997), 44 American children who spoke with a General American dialect, and 46 British children, who spoke with a Southern British dialect, participated in a study to examine the effects of dialect on spelling. The results of this study strongly confirmed that children's dialect affects their spelling. For example, "General American English, a rhotic dialect, permits /r/ after vowels in syllables whereas Southern British English, a nonrhotic dialect, does not" (Treiman et al., 1977, p. 243). As a result, Southern British English children would spell *hurt* as hut, and General American English children would spell *hurt* as hrt. This type of dialect-based error was most prominent among 6 to 7 1/2 year old children, but it was less common among more advanced spellers.

Treiman et al. (1977) cite another study that examined the effects of pronunciation on spelling; the results of the study revealed that certain phonological features of Black English were reflected in children's spelling. "For example, Black third

graders were more likely than White children to make errors such as "sowf" for *south,* presumably reflecting the Black English pronunciation of the word with the final /f/" (p. 243).

Dildine (1994) also noted that for Grade 6 ESL students the ability to pronounce words accurately had a distinct effect on their ability to spell the words correctly (p. 96). For example, one student in the study who had difficulty with the pronunciation of words often spelled them similarly to the way she said the word, rather than the standard spelling. According to Dildine, "ESL writers appear to rely more on their visual memory for how to spell words correctly, because of the fact that they know they do not pronounce words like a native speaker and can not rely on the phonology they hear" (p. 96). Dildine's study also revealed that ESL students' articulation errors were four times those of their age-level native speakers when compared by number of students.

It comes as no surprise that ESL students have a higher number of articulation errors, for they are still learning to pronounce English words. One could hypothesize that the number of errors would probably decrease as the students become more familiar with the language. What was surprising to note, however, was that native speakers had a higher number of homonym errors compared to ESL students. In other words, native speakers made more errors than ESL students on words that are pronounced the same, but differ in meaning and spelling. For example, the words *plain* and *plane* are homonyms; for they both sound the same, but differ in meaning and spelling. According to Dildine, these differences can be attributed to the fact that native speakers are familiar with the English language and are aware of homonyms. As a result, they tend to get confused with

which spelling is correct. Nonnative speakers, on the other hand, are unaware that homonyms exist (p. 107).

Factors that Affect Spelling Performance

According to Masterson and Crede (1999), several factors affect spelling performance, including personal skills and abilities and external influences. For example, students who use cursive writing at an early age are vulnerable to spelling problems due to the mismatch between appearance of cursive and printed text. Therefore, those who have poor handwriting skills become mediocre spellers.

In a study conducted by Milone, Wilhide, and Wasylky (cited in Barbe, Francis, and Braun, 1982), 95 percent of students whose handwriting was ranked as either a 4 or 5 (5 being the most legible) had 4 spelling errors or fewer: "Students with the least legible handwriting had very low spelling scores, with 80 percent having 7 spelling errors or more and 50 percent having 10 errors or more" (p. 5). Therefore, based on this study and some researchers, children with legible handwriting spell better than children with illegible handwriting. However, one must keep in mind that differences in markers may affect test scores. What may appear to be an *a* to one marker may, in fact, appear to be an *o* for another marker. There may be many other reasons why children with poor handwriting also seem to have poor spelling practices; however, I do not believe the research is convincing enough to make a strong argument for absolute correlation between poor spelling and poor penmanship.

Another factor that contributes significantly to successful spelling performance is having the knowledge of the meaning and spelling of Latin and Greek roots (Masterson & Crede, 1999). As one gets older, several Latin and Greek roots appear frequently in

words. According to Dale, O'Rourke, and Bamman (cited in Barbe et al., 1992), "A student who knows the root rupt (break) and the prefix inter- (between) will be less likely to misspell interrupt as interupt (with one r)" (p. 164).

External factors, such as instructional methods, also affect spelling performance. According to Masterson and Crede (1999), "Two practices that may be sufficient to develop orthographic problem-solving behaviors necessary to produce correctly spelled words include emphasis on rote memorization and de-emphasis on spelling as a topic of formal instruction" (p. 245). Gentry (1981), on the other hand, believes there are two factors that enable children to progress through the stages of spelling development. The first factor is informal learning. According to Gentry, "Much of a child's language is learned informally;" therefore, "informal learning via opportunities to test and generate spelling patterns is a necessary aspect of learning to spell" (p. 380).

The second factor in learning to spell is the immersion of the learner in a language environment. "Saturation in print and frequency and dynamic of story writing provide the raw materials and dynamic activity required for growth in spelling" (Gentry, 1981, p. 380). According to Gentry, spelling competency is not achieved by memorizing a word list every week for 36 weeks over a span of eight years. "Good spellers are those who from the beginning form a spelling consciousness through purposeful writing" (p. 380).

Hughes and Searle (2000) concur that writing supports learning to spell in various ways: "Writing challenges children to use their knowledge of print to express their thoughts on paper. Writers may spell correctly or incorrectly, but they cannot avoid spelling" (p. 203). Furthermore, the process of generating words and making choices about which letters to put down on paper are decisions that writers do and not readers. As

a result, writers have to pay careful attention to internal details of words since they have an audience. According to Hughes and Searle, "When writers care about how their ideas are received by readers, they are more apt to understand how readers are influenced by correct and incorrect spellings" (p. 204). Therefore, committed writers tend to strive to become good spellers.

In a study conducted by Kreiner, Schnakenberg, Green, Costello, and McClin (2002), spelling errors did have an affect on how people perceived writers, particularly when there were many spelling errors. For example, college students appeared to attribute spelling errors more to writing ability than they did to general cognitive abilities such as intelligence and logical ability.

In brief, this literature research reveals four important points. First, the spelling skills of adults and children do evolve in stages, not randomly. Therefore, it is important as educators that we look at the spelling mistakes of adults and children diagnostically and identify each stage the student has reached.

Second, students' perceptions of their spelling ability affects their self-esteem and writing. Students who are poor spellers resist sharing their work with others, for they feel embarrassed that they lack the skills. Moreover, these students tend to avoid writing longer writing samples with complex-multimorphemic words. As educators and parents, we need to start stressing at an early age that writing is the most important thing and that correct spelling is a courtesy. In other words, educators need to start placing a heavier emphasis on content and structure and less emphasis on spelling.

Third, gender differences do exist in terms of perception and spelling ability. Boys are more likely than girls to attribute their failure to unstable causes to avoid

threatening their self-esteem. As for gender differences in spelling development between adult learners and children, differences do exist. In young adults, there are no significant differences between genders; however, in children girls generally do better than boys. Therefore, as educators, we need to start altering students' perceptions that language arts and spelling is a female subject. In addition, we need to start encouraging a spelling conscience in our students.

Last, but not least, first language experiences reveal that skills taught in one language do transfer to the second language. In fact, English as a Second Language (ESL) students do progress through the same spelling stages as native speakers, but they develop at a lower developmental stage. As a result, educators need to provide ESL students with ample practice, meaningful application, and positive reinforcement.

Methodology

Participants

The participants for this research were from a cluster sample; that is, a sample consisting of one or more groups already in existence. Specifically, 33 students who were registered in an English and reading class at a southern Alberta community college were asked to participate in the study. However, out of those 33 students, only 18 students volunteered to participate in this comparative study. There were 11 females and 7 males who ranged in age from 18 to 38 (mean age = 26.5). English was the native language for all participants, except for six students. Students registered in these classes had been assessed by the Assessment Centre as having a scale score of 541-560 in the writing skills section of the Canadian Achievement Test (CAT). Furthermore, five of those 33 students were registered in both the English and reading course.

The other participants for the study were 39 Grade 7 students from two rural schools in southern Alberta. Specifically, there were 27 students in one class that were asked to participate in the study, but only nine students volunteered. Out of those nine students, there was only one male who participated. In another Grade 7 class, there were 12 students, but only five students participated in the study. In this particular class, there were no male volunteers. English was the native language for all the Grade 7 participants. Furthermore, all of the participants in these two rural schools were twelve years old, except for three students who were thirteen years old (mean age = 12.21). Table 1 shows the chronological ages and spelling ages on the WRAT3 standardized test for both groups.

Table 1. Chronological Ages and Spelling Ages Based on the WRAT3

Chronological Age Groups	Males	Females	Spelling Ages Based on WRAT3 Test
12-0 to 12-11 N=11	0	11	Grade 5 (1), Grade 6 (2), Grade 8 (4), High School (2), Post High School (2)
13-0 to 13-11 N=3	1	2	Grade 3 (1), Grade 8 (1), High School (1)
14-0 to 14-11 N=0	0	0	
15-0 to 15-11 N=0	0	0	
17-0 to 19-11 N=2	0	2	Grade 6 (1), High School (1)
20-0 to 24-11 N=7	4	3	Grade 4 (1), Grade 5 (1), Grade 6 (2), Grade 8 (1), High School (2)
25-0 to 34-11 N=7	2	5	Grade 3 (1), Grade 5 (1), Grade 6 (1), Grade 7 (3), High School (1)
35-0 to 44-11 N=2	1	1	Grade 6 (1), High School (1)

Instrumentation

The instrument used to determine whether spelling development differs from adults and Grade 7 children was the standardized test called the Wide Range Achievement Test (WRAT3) (Wilkinson, 1993). The 1993 edition of the WRAT3, which is an aged-norm referenced test, measured the spelling ability of individuals aged 5-74. There were two alternate test forms (blue and tan); however, all students were tested using the tan form. The test consisted of 15 items on the Name/Letter Writing section and 40 items on the Word Spelling section that contained words ranging in difficulty from go to mnemonic. Since all students were over the age of eight, they were exempted from writing the Name/Letter Writing section of the test.

"The restandardization of the Wide Range Achievement Test 3 began more than two years ago. The data was compiled during a national stratified sampling involving nearly 5,000 individuals nationwide" (Wilkinson, 1993, p. 9). Five factors were controlled in this stratification: age, regional residence, gender, ethnicity, and socioeconomic level: "The first four factors were counterbalanced to give an appropriate mix of individuals in each age range by regional residence, gender and ethnicity" (p. 27). However, the socioeconomic level was controlled separately because it was impossible to obtain the needed data breakdown for counterbalancing it with other factors. The primary goal of restandardization was to include two equivalent test forms that could be administered individually, used as a pre- and post-test or combined for a more comprehensive evaluation. Whether using a single form or a combined form, one could measure the respective academic skills and convert the resulting raw scores to absolute scores, standard scores, grade scores, and percentiles.

In addition to the Wide Range Achievement Test, a Likert scale, "an instrument composed of statements that permit responses along an 'agree/disagree' continuum," was used (Charles & Mertler, 2002). The Likert scale, which consisted of 20 statements derived from the literature, was given orally since students with reading difficulties may not feel confident completing the Likert scale (see Appendix B).

Data Collection

The type of data collected for this study were scores, which is "the numerical values assigned to test performance" and opinions, "which were the views expressed by participants" (Charles & Mertler, 2002, p. 148). The participants' opinions were based on the Likert scale, and test scores were based on the Wide Range Achievement Test WRAT3), which were compared to Henderson's five stages of spelling development.

Data Analysis

To investigate whether spelling development of adult learners differs from Grade 7 children, a quantitative research method was employed. The Wide Range Achievement Test and the Likert scale provided the quantitative data. The research method used in this study was casual-comparative; that is, "Research that attempts to determine the cause, or reason, for existing differences in the behaviour or status of groups or individuals" (Gay & Airasian, 2000, p. 622). In other words, what causes or reasons existed between the differences in spelling development between adult learners and children in Grade 7.

Procedure

The purpose of the study was to determine adult learners' and Grade 7 children's perceptions about themselves as spellers and compare this data to the data on the differences between the groups. The number who actually participated in the study fell

below a statistically significant number that in turn would not allow generalized comments to be made. However, the data that did emerge does contribute to our knowledge of self-perceptions of spellers.

Eighteen adult learners from a southern Alberta community college who were enrolled in an English and reading course were selected. In addition, 14 Grade 7 children from two rural schools in southern Alberta also participated in the study.

Two types of instruments were used to gather data: the Wide Range Achievement Test (WRAT3), a standardized test that required students to write 40 words that had been dictated, and a Likert scale that I constructed based on the literature review that identified the participants' perceptions of spelling, their spelling ability, and their relationship between spelling and other subject areas. Both groups were administered the same types of instruments.

Permission and cooperation from both the community college and the school district were obtained, as well as permission from school administrators, instructors, and teachers. Approximately one week before testing, I met with students to introduce myself and explain the nature of the study, as well as explain their involvement in this particular study. At this time, consent forms were distributed (see Appendix A). Participants under the age of eighteen required their parent's signature to participate in the study, and all other participants just signed the consent forms on their own. All consent forms were collected on the day of testing.

Students enrolled in the English and reading classes were first tested using the five-point Likert scale, which was administered orally as students followed along with their own copy. Participants were asked to shade the letter on the Scan-tron card that best

matched their response (strongly agree, agree, neutral, disagree, strongly disagree) with twenty statements derived from the literature. Once participants completed this section of the testing, I administered the Wide Range Achievement Test (WRAT3). The test was administered according to standard instructions. Each word was read aloud, then in a sentence, and then by itself again. All participants were asked to guess if they were not sure of the correct spelling. Students were spaced at an appropriate distance from one another and carefully monitored. In addition, they were given instructions concerning the importance of the test and the need for each person to do his/her best. They were also reassured that test scores would not be used to grade or evaluate them, and that their participation in the study was confidential and individual test scores would not be available to their instructor. Grade 7 students enrolled at the two rural schools also received the same instructions. Both tests were administered on the same day during their class period. Students completed the Likert scale first and then the WRAT3 in order to prevent their perception of their ability to spell to be based on how they perceived they performed on the WRAT3.

The standardized tests were scored manually, and the Likert scale was scored using a Scan-tron machine. Analyses were made by the Scan-tron, which provided information in addressing implications for teaching practices.

Findings and Discussion

The results of this comparative study are not statistically significant due to the number of participants. There are several hypotheses for the low numbers ranging from the design of the consent forms to the association with the community and the school. First of all, the design of the consent forms may have attributed to the low numbers since the consent forms did not have to be returned to the school unless parents/guardians had granted their child permission to participate in the study. In one particular school setting, consent forms had to be distributed three times because students were misplacing them. Therefore, whether these forms made it home was difficult to measure since parents were not required to sign the form and return it to school unless they were granting permission.

Second, according to one teacher, the fact that some students were not submitting their homework may explain the behaviour of these students who did not return these consent forms. I suppose one cannot expect a high return rate on consent forms if assignments requested by the teacher were not being submitted.

Third, a very obvious reason, is that several students whose parents/guardians granted them permission to participate in the study were not present when the test was administered. Unfortunately, these students could not be rescheduled, for an alternate test would have had to be administered to these students.

Another possibility for the low number of participants may be attributed to the number of practicum and graduate students present in the schools that may have required parents to complete forms or surveys. Perhaps this consent form was just one more form to read, complete, and return to the school.

The topic itself, spelling development, may have been a factor in the low numbers. For example, individuals who were not strong spellers or interested in spelling may have shied away from participating. Perhaps this explains why out of 39 students in two Grade 7 rural schools only one male student participated in the study. According to Graham and Miller, "Effectiveness of instructional procedures depends greatly upon the student's interest and motivation. Regardless of the quality of the program, progress will be restricted if the student is not motivated to spell words correctly or is not interested in spelling" (cited in Barbe et al., 1982, p. 311).

Last, but not least, my association with the community and school as a parent may have reduced the number of participants at one particular school. Perhaps parents may have felt uncomfortable knowing that I would know how their child performs in the subject area of spelling. Even though confidentiality and anonymity were reassured, I believe some parents may have felt uncomfortable if their child was a weak speller. According to Peters (1967), "[Parents] regard their child to a certain extent as an extension of themselves, and if their child cannot spell, this inadequacy reflects on them" (p. 3). Furthermore, the problem of spelling is intensified when some parents are confronted with writing a letter or filling in a form, for they view this task as a test of their own literacy, education, and status.

Looking back, next time I would request that consent forms be signed by parents and returned to the school, regardless if their child is not participating in the study. This would ensure that parents have received the consent forms. In addition, I would choose communities that I am not associated with and schools that my children do not attend.

Regardless of the number of participants, this study still examined the central question: Does the spelling development of adult learners differ from that of Grade 7 children? Furthermore, it examined spelling development and its association with gender differences, first language experiences, and perceptions of spelling. Each of these areas is discussed in relation to the results of the study and the literature.

Spelling Development

This study was designed to answer a number of questions related to spelling development between adults and Grade 7 children. Specifically, was there a difference in the stages of spelling development between both groups based on Henderson's five stages of spelling development? According to this particular study, both Grade 7 students and adults had already progressed beyond the preliterate stage, letter-name stage, and within-word pattern stage. The results of this study revealed that children and adults showed similar mastery in recognizing single consonants, single end consonants, and short vowel inclusions, which concurs with other studies. However, slight differences in spelling began to emerge with one-syllable words that may be attributed to auditory discrimination. For example, one male adult wrote the word harm instead of arm, and another female adult wrote the word shot instead of shout.

According to the literature, adults have a strong tendency to leave out vowels in their spelling compared to children. In this particular study, there did not appear to be such a strong tendency. What was noted, however, was that there appeared to be more errors of omission of consonants and vowels than substitutions or insertions of letters between both groups. These findings are similar to the data obtained by Brooks, Gorman, and Kendall (1993) who examined the first ten lines of 1492 essay scripts from the

national APU survey of 11- and 15-year-olds. Their findings show that there were more omission errors (36%) in comparison to insertion (17%) and substitution (19%) errors.

Measuring the last two spelling developmental stages (syllable juncture and derivational constancy) was a difficult task due to the instrument being used – the WRAT3 standardized test. Even though "[This standardized test] has more than face validity, can be considered an adequate predictor of placement levels for English-for-Speakers-of-Other-Languages (ESOL) students," and can measure the spelling ability of someone who is between the ages of 5 and 75, it did not contain many words to demonstrate knowledge of syllable juncture (Wilcox, 1991, p.1). Of the 40 words dictated, not one word illustrated the application of the doubling principle (i.e. double the final consonant of a syllable containing a short vowel before adding a suffix). Therefore, the use of spelling patterns, such as the final e or the en variation rule, were either absent or demonstrated with just one word. For example, the knowledge of the en variation rule could only be demonstrated in the word *grown*.

Leaving off or changing simple suffixes such as –en, -er, -ed, and –es were also errors that could not be measured with the words dictated. However, in the literature, it was adults that tended to leave off or change simple suffixes, a problem that rarely occurred among children. Therefore, it is difficult to state with certainty that adults and children in Grade 7 have moved to the last stage of spelling development, the derivational constancy stage. However, spelling errors began to slowly emerge with two syllable words and increase with three or more syllable words regardless of age (see Appendix C). Furthermore, adults and Grade 7 children misspelled certain words in the same fashion. For example, words such as result, purchase, institute, and occupy were misspelled in the

same way. This suggests that adults and Grade 7 children tend to spell words in the same fashion, but they also develop their spelling skills in stages and not randomly.

Gender Differences

Looking specifically at gender differences in spelling between adult learners and children, there is an obvious difference. Grade 7 females performed better on the WRAT3 standardized test than adult females. Fifty-four percent of the Grade 7 female scores were very superior to high average on the WRAT3, whereas female adults ranged from average to deficient. Eighty-two percent of those adult women were classified as low average to borderline (see Table 2).

Table 2. Standard Scores of Participants as Classified on the WRAT3

Ratings of Standard Scores	Adult Males	Adult Females	Grade 7 Males	Grade 7 Females
Very Superior				2
Superior				1
High Average			1	4
Average	3	2		5
Low Average	2	4		
Borderline	2	4		1
Deficient		1		

The differences in spelling ability between adult males and the Grade 7 male show that adult males did not do as well. However, it is important to note that out of the two Grade 7 classes, only one male participated in the study. According to the results of

the standard scores on the WRAT3, this Grade 7 male student was classified as being a high average speller. The seven adult males scores ranged from average to borderline.

Gender differences become less obvious when one compares differences between adult males and adult females. Looking specifically at raw score averages, the average for the adult males was 37 and for females it was 34.45. The mean scores were 37 for the males and 34 for the females. When one compares the raw score averages of Grade 7 students, one finds that there was no gender difference. The average male score was 38, and the average female score was 37.6.

The results of this study are somewhat similar to those of a study conducted by Rios (2000). In that study, young adults (ages 17 to 21) showed no significant differences in spelling ability between genders. However, in children (Grades 1 through 6) girls generally did better than boys. The discrepancy between the Grade 7 findings in this study and in other studies, such as that conducted by Rios, could be attributed to the fact that there was only one Grade 7 male student in this study. In fact, this male student was a high average speller according to the WRAT3 results. One can hypothesize that, since he was the only Grade 7 male who participated, he probably was confident in his ability to spell. Therefore, one needs to closely examine the results of the Likert scale to determine if one's perception of one's spelling ability influences test scores.

Perceptions of Spelling

Performances on the WRAT3 test were strongly correlated to perceptions of spelling ability as measured on the Likert scale, especially for Grade 7 students. Seventy-nine percent of Grade 7 students responded to question two on the Likert scale as strongly agreeing and agreeing that they are good spellers. Specifically, the Grade 7 male

student who was classified as a high average speller on the WRAT3 test also perceived himself as a good speller. The Grade 7 females who were classified as very superior and superior on the WRAT3 test also believed they were good spellers. High average and average Grade 7 females responded by stating that they strongly agreed, agreed, or were neutral to being good spellers. The student who was classified as borderline responded neutrally when asked if she was a good speller (see Table 3).

Table 3. Perceptions of a Good Speller Based on Question 2 on the Likert Scale

Classification of Spelling Ability Based on Standard Scores on WRAT3	Grade 7 Male	Grade 7 Females	Adult Males	Adult Females
Very Superior		Strongly Agree (2)		
Superior		Strongly Agree (1)		
High Average	Agree (1)	Strongly Agree (2) Agree (2)		
Average		Strongly Agree (1) Agree (2) Neutral (2)	Agree (2) Neutral (1)	Strongly Agree (1) Agree (1)

Table 3. Perceptions of a Good Speller Based on Question 2 on the Likert Scale
(continued).

Classification of Spelling Ability Based on Standard Scores on WRAT3	Grade 7 Male	Grade 7 Females	Adult Males	Adult Females
Low Average			Agree (2)	Strongly Agree (1)
				Agree (1)
				Neutral (2)
Borderline		Neutral (1)	Neutral (1)	Agree (2)
			Disagree (1)	Neutral (1)
				Strongly Disagree (1)
Deficient				Neutral (1)

Adult spellers, on the other hand, perceived themselves as good spellers with
average or low average test scores on the WRAT3. Specifically, 6 percent of adults
strongly agreed that they thought they were good spellers, and 44 percent agreed that they
were good spellers. Thirty-three percent of the participants were neutral. What was
interesting to note was that two adult females who were classified as borderline spellers
agreed that they were good spellers. Seventeen percent of adult participants disagreed
that they were good spellers (see Table 4).

Table 4. Percentage of Responses to Five-Point Likert Scale Statements

A. Strongly Agree

B. Agree

C. Neutral

D. Disagree

E. Strongly Disagree

Likert Scale Statements	Adult A	Adult B	Adult C	Adult D	Adult E	Gr. 7 A	Gr. 7 B	Gr. 7 C	Gr. 7 D	Gr. 7 E
1.	8	17				43	57			
2.	6	44	33	11	6	43	36	21	3	
3.	6		17	50	28		14	14	29	43
4.	11	11	17	39	22		14	7	36	43
5.	39	22	28		11	21	29	29		21
6.	6		33	17	44	7	29	43	14	7
7.	28	22	22	22	6	7	29	29	29	7
8.		6	17	28	50	7		21	29	43
9.	17	11	22	33	17	14		7	14	57
10.	11	61	11	11	6	29	36	29		7
11.	72	28				86	14			
12.	6	28	28	39		43	50	7		
13.	6		44	11	39			71	21	7
14.		17	44	28	11	7	29	7	29	

Table 4. Percentage of Responses to Five-Point Likert Scale Statements (continued).

A. Strongly Agree

B. Agree

C. Neutral

D. Disagree

E. Strongly Disagree

Likert Scale Statements	Adult A	Adult B	Adult C	Adult D	Adult E	Gr. 7 A	Gr. 7 B	Gr. 7 C	Gr. 7 D	Gr. 7 E
15.	50	28	22				14	43	29	14
16.	50	22	17	11		14	21	57		7
17.	56	39	6			50	50			
18.	22	22	44	6	6	57	29		7	7
19.		22	22	33	22	7		21	21	50
20.	6			33	61				21	79

Generally speaking, the results of this study on perceptions and spelling performance, especially with Grade 7 students, concur with Rios and Vadon (2000) that students who perceive themselves to be good spellers are in fact good spellers. How participants viewed the opposite sex in terms of spelling ability was quite interesting. For example, 44 percent of adults strongly disagreed that females are better spellers than males, and 43 percent of Grade 7 students were neutral. When participants were asked if males tend to do well on spelling tests, 44 percent of adults were neutral compared to 71 percent of Grade 7 students who believe that males do better on spelling tests.

One needs to question why there was only one male student who participated in the study when 71 percent of Grade 7 females believe males do better on spelling tests. Is this an image issue? As an educator for eighteen years, I have observed that there tends to be a higher number of males enrolled in spelling classes. This is due to the fact that students must be assessed by the Assessment Centre as having a severe spelling problem before being placed in a spelling class. These students recognize that they are weak spellers; however, they are embarrassed that they are taking a spelling course at a community college. In fact, some males prefer that the door be closed so that no one can see or hear them during the class period. I believe, if given the choice, many males would not enroll in a spelling class because of the image/status associated with spelling.

According to a study conducted by Abell (1994), many adults in Britain feel unhappy with their spelling since spelling is seen as a reflection of their culture. Therefore, if they are unable to spell accurately, they feel they are less cultured than those who do. They tend to equate spelling ability with status and education; as a result, they tend to feel embarrassed about their lack of spelling skill and tend to be reluctant to write.

Is spelling perceived as being important at school? According to this study, spelling is valued very highly. Specifically, 83 percent of adults strongly agreed that spelling was important, and 17 percent agreed. Of the Grade 7 students, 43 percent strongly agreed and 57 percent agreed that spelling is important at school. The high percentages could be attributed to students' participation in the study. However, when asked on the Likert scale if spelling is their favourite subject, 39 percent of adults disagreed or strongly disagreed, and 29 percent of Grade 7 students disagreed. Only 17

percent of adults agreed that spelling is their favourite subject, but 29 percent of Grade 7 students agreed and 7 percent strongly agreed.

These findings also echo the results of Scott's study (2000), that spelling is considered by teachers and students as a necessary but altogether disliked component of the curriculum due to the gap between effort and results. Therefore, one needs to examine the instructional methods that are used to teach spelling. According to question ten on the Likert scale, 61 percent of adults agree that to be a good speller, you need to memorize words. Furthermore, 11 percent strongly agreed with this statement. Grade 7 students also felt strong about memorizing words. Specifically, 29 percent strongly agreed that to be a good speller you need to memorize words and 36 percent also agreed.

Should spelling rules be taught, and if so, would knowing these rules help students to spell many words? According to Scott (2000), the debate over how much of spelling is "taught" and how much is "caught" is controversial among teachers. Those who believe spelling is "caught" feel that spelling skills, such as the schwa, are not used by good spellers, are boring to instruct, and fail to transfer to text-level writing. However, researchers such as Barbe et al. (1982) believe that "It does make sense to teach spelling 'rules,' but students should not be expected to memorize them or use them exclusively in spelling words which they are unfamiliar or about which they are unsure" (p. 3).

In a study conducted at Stanford University, a computer was programmed to test the efficiency of spelling rules. Specifically, the computer was asked to spell 17,000 most frequently used words. The results of the study revealed that the computer was able to spell 50 percent of the words correctly, but spelled an additional 37 percent of the words

with only one error (Barbe et al., 1982, p. 3). Therefore, according to this study, spelling rules do have value; however, spelling rules alone will not make children good spellers.

Adult participants in this study concur with Barbe et al. (1982) that it does make sense to teach spelling rules. Specifically, 50 percent of adults strongly agreed that knowing the spelling rules helps them to spell many words. Only 14 percent of Grade 7 children echoed this belief (see Table 4). Could the differences in opinion be related to the instructional methods that adults and Grade 7 children have received over their lifetime? Perhaps adults who have been taught rote memorization as the only spelling instructional method still believe this is the only method. Grade 7 students, on the other hand, may have been exposed to various instructional methods and strategies.

Are we wasting our time teaching spelling since computer programs can correct spelling? According to adults and Grade 7 students, one still needs to learn how to spell. Sixty-one percent of adults strongly disagreed with question 20 on the Likert scale, that there is no need to learn how to spell because there are computer programs that correct spelling. Seventy-nine percent of Grade 7 students felt the same way. Only six percent of the adult participants strongly agreed that there was no need to learn how to spell because computer programs corrected spelling. Interestingly, over 50 percent of adults and Grade 7 students use a spell checker to check their spelling. Only 11 percent of adults and 21 percent of Grade 7 students do not use a spell checker.

According to the literature, spell checkers perform two important functions: they identify misspelled words and suggest correct spellings (Landmark, 2002). Even though some people consider spell checkers invaluable, they also have limitations; in some studies, spell checkers have been found to hinder students. One limitation of spell

checkers is that they cannot identify spelling errors that are real words. In fact, in studies

that were conducted, "30% - 40% of spelling errors were real words" (p. 1). Another

limitation of spell checkers is that they do not always offer useful spelling suggestions for

severely misspelled words. Therefore, unless one can estimate the spelling of the

intended word, the spell checker cannot guarantee 100 percent accuracy. In fact, students

with learning disabilities selected the intended word 82 percent of the time in a study

conducted in 1996 (cited in Landmark, 2002 p. 1).

A final limitation to spell checkers is that proper nouns are often flagged as errors,

which may cause some confusion for some students. Even though spell checkers have

limitations, they can be overcome by using spell checkers in conjunction with

synthesized speech programs or by cross-referencing the suggested words with a

thesaurus.

In terms of spell checkers being a hindrance rather than a valuable tool, this has

been documented in two studies conducted at the University of Pittsburgh. One study

revealed that good spellers made twice as many mistakes when they used the spell

checkers. According to researchers, kids only looked for words underlined by the

computer and assumed that the rest of the document was correct (Seith, n.d., p. 1). In

other words, students were clicking and not thinking. In another study at the University of

Pittsburgh, researchers suggested that "Relying too heavily on spell-check computer

software while writing may actually hinder a student" (cited in Seith, n.d., p. 2). The

study involved 33 undergraduate students who were asked to proof a business letter. Half

of the students used Microsoft Word's spell check and the other half used no references.

The results of the study revealed that the software did help students find and correct

errors. However, in several cases, students were prompted to change phrases or sentences that were flagged, even though the phrases were correct. It is important to note that spell check computer software is not foolproof; however, "spell checkers used in conjunction with other strategies can help enormously" (Landmark, p. 2).

First Language Experiences

As mentioned previously in this study, standard spelling of the English language appears to be easy for some students, but difficult for others. In this particular study, there were only six adult ESL students and no ESL Grade 7 students. Specifically, there were three females whose spelling scores ranged from low average to borderline, and two males whose spelling scores were average. The other male student was classified as a borderline speller. The results of this study reveal that some of the ESL students had difficulty spelling the words on the WRAT3 test, whereas others did not. The differences could be attributed to the years of English schooling these students have received prior to enrolling in the English or reading class. In general, it appears that ESL students travel through the same basic stages of spelling development as native speakers, but at lower developmental levels.

Students in this study appeared to be using their own pronunciations, as well as their knowledge of letter/sound correspondence to write dictated words. For example, a male student wrote the word *result* as resault, and a female student wrote *boutonniere* as bootiniere. Some of the spelling words written by borderline students, however, were not spelled phonetically. For example, one student wrote *physician* as forsisan, and another student wrote *museum* as mausyame. There was only one male student, an average

speller, whose spelling errors were due to errors of auditory discrimination. For example, instead of writing the word *arm*, he would write harm, or occupied instead of *occupy*.

According to the literature, the English /t/ and /ŏ/ sounds are often represented by the Spanish speakers with the letter d. There were a few misspellings on students' spelling tests that may reveal that this is what students were doing. For example, one student wrote the word *institute* as instidute, and another student wrote the word *necessity* as nececady.

Differences in the English sh versus the Spanish ch sounds were not observed in this study since there was only one word that contained sh. Everyone spelled the word *shout* correctly, except one student who wrote *shot*. According to the literature, however, the Spanish language does not have the sh sound system; therefore, many beginning English speakers substitute ch instead. Furthermore, in Spanish there are fewer vowel sounds than in English, and the letters are given letter names that correspond exactly to the pronunciation. There are also no silent letters in Spanish; all vowel letters are pronounced. It is difficult to speculate whether or not the student who wrote *heaven* as heven was a Spanish student, since students were only required to indicate if English was their first language. They did not have to specify their first language. Therefore, it is difficult to assess that the errors being made are typical of Spanish students since this information was not available.

Interestingly, five of the six ESL students agreed, on the Likert scale, that to be a good speller one needs to memorize words. Only one student responded neutrally. This relates to Dildine's statement (1994) that "ESL writers appear to rely more on their visual

memory for how to spell words, because of the fact that they know they do not pronounce words like a native speaker and can not rely on the phonology they hear" (p. 96).

The spelling errors made by some ESL students can be attributed to their articulation. For example, in a study conducted by Dildine (1994), ESL students' articulation errors were four times those of their age-level native speakers when compared by number of students. As mentioned previously, one can hypothesize that the number of errors would decrease as students become more familiar with the language.

All ESL students in this particular study, except for one who was neutral, strongly agreed or agreed that the more an individual writes the better speller he or she will become. What was interesting to note, however, was that on the Likert scale one third of these students claimed to choose words they could spell. These same students were also classified as average spellers on the WRAT3. This correlates with the literature that safe writers who take little or no risk in choosing words might be better spellers because of the level of communication they are choosing (Stewart, 1988, p. 57). Also another third of ESL students disagreed with the statement on the Likert scale that they choose words they know they can spell. In fact, these students were classified as being low-average or borderline spellers. What was interesting to note was that the borderline student disagreed that she was a good speller, and the low-average student agreed that she was a good speller. Perhaps one can speculate that these students are not concerned about choosing words they can spell, for they use a dictionary to check the spelling of unfamiliar words, or at least they claim to, on the Likert scale.

Implications and Recommendations

It is through spoken and written language that we convey information to one another. In fact, we consciously provide others with information about our education attainment, our social standing, and even our intellectual capacities through our spoken and written language (Hodges, 1981). In many ways our writing becomes a visible and permanent record of our language ability and is thus valued even more highly than spoken language.

Just as language is highly valued, so is accurate spelling an important attribute. However, the importance of spelling in the curriculum does not typically match the importance attributed to in daily life (Hodges, 1984, p. 1). Hodges suggests several reasons for this discrepancy. "One reason is that the ability to spell has traditionally been regarded as little more than a psychomotor skill acquired through memorization and practice, except for those fortunate few for whom spelling seems to be an innate ability" (p. 1). A second reason is that teachers have not received professional preparation to teach spelling. As a result, some teachers teach spelling in the same manner that it was taught to them – memorizing word lists for a weekly spelling test.

"Spelling is not a process of memorization, but it is a highly complex intellectual accomplishment that one develops over time in conjunction with an individual's experience with and growing knowledge of the properties and uses of spoken and written language" (Hodges, 1984, p. 2). Current spelling research suggests, as well as this study, that educators need to be aware of the developmental stages of students' spelling ability. Furthermore, spelling should not be taught in isolation. According to Barbe et al. (1982),

the process of spelling is to communicate clearly through writing; therefore, students must be given many opportunities to write, as well as be encouraged to use the words they have learned (p. 2).

Implications of the Developmental Stages for Spelling Instruction

For primary teachers, less emphasis should be placed on correct spelling before development is allowed to occur. According to Lutz (1986), teachers should avoid overemphasis on absolute correctness, mechanics, and memorization, for early emphasis on mechanical aspects of spelling inhibits developmental growth (p. 2). Therefore, teachers should look at children's mistakes diagnostically and identify the stage each child has reached. Just like reading skills follow a sequential order, so do the spelling skills. "Knowledge of single consonant sounds precedes recognizing blends, and spelling one-syllable words comes before spelling multi-syllabic words with inflectional endings (Barbe et al., 1982, p. 6). These skills, which can be categorized into Henderson's five stages – preliterate, letter-name, within-word pattern, syllable juncture, derivational constancy – can determine where a student is on the developmental ladder. Determining a stage of spelling for a student is not creating a label; however, it is the starting point for planning instruction. For once the instructional level has been determined, then words that represent developmentally appropriate patterns can be collected and examined.

According to Bardine (1997), adults too must not be rushed along the developmental ladder: "That is, research suggests adults need to understand the most basic spelling features of English before they begin to progress to the more difficult features of the language" (p. 2). As research has indicated, adults spelling acquisition develops in a similar pattern to that of children.

Bear and Templeton (1998) recommend that students be grouped appropriately for spelling since it is unlikely to have a homogenous group where everyone is at the same level. They also suggest that students should examine known words, especially for students who are in semiphonetic, letter name, and within-word pattern stages of spelling development. "As with any type of conceptual learning, analysis is very difficult and counterproductive if students don't first know what they're looking at" (p. 3). It is in the intermediate grades or when students are in the syllable and derivational constancy stages that new words are included. This is the stage that should focus extensively on meaning and exploration of spelling meaning relationships. "Indeed, at these levels it is crucial to make the link between a word's spelling, its meaning in text, and its structural relationship to other words" (p. 3).

Greek and Latin words become very common throughout the words that students read, write, and explore at the derivational constancy stage. Since many words at this level are difficult to spell on the basis of sound, it is important to know roots and base words; for example, -cred- in the word *credible* means "belief." Moreover, knowing prefixes, suffixes, and base words not only helps people spell, but it also helps them when they encounter unfamiliar words when reading.

It is also important not to use only content-related words for spelling instruction without consideration of development appropriateness; for "if theme is the sole criterion for selecting words, then students are reduced to learning how to spell one word at a time, with no opportunity to discover and explore the spelling patterns that apply to many words" (Bear & Templeton, 1998). For example, students can learn to read words such as

ocean and *plankton* in a thematic unit; however, their ability to remember the spelling of these words is limited.

According to Dildine, "Forcing students to make their hypotheses through activities that teach students to be aware of the visual parts of words appear to be very important to a successful spelling curriculum for all types of students" (1994, p. 109). This teaching strategy is referred to as word study, a learner-centered, conceptual approach to instruction in phonics, spelling, word recognition, and vocabulary (Brandt & Gielbelhaus, 2000). The goal of word study is to teach students to see differences in words, such as regularities, patterns, and rules using hands-on activities. In addition, word study is designed to increase children's specific knowledge of word, spelling, and meaning through various activities.

One type of activity is known as "word sorts." This activity asks students to compare and contrast words by grouping words according to their likes and dislikes using categories that the teacher has assigned. Students can also do writing sorts where the categories are already set up. The teacher reads the words aloud while the students write the words under the appropriate category.

Another type of word study that involves patterns is "word hunts." Students must now look at text to find words that fit into patterns they have been studying and record them in their word study notebooks. "All assignments that allow students to compare similarities and differences in how words sound and look are beneficial to students making the connections that exist in English orthography to be able to spell conventionally" (Dildine, 1994, p. 109).

Word study activities can be incorporated in all of the developmental stages of spelling. For example, at a prephonemic or preliterate stage, students can use pictures or objects to sort and categorize. When they are at a semiphonemic or early letter name stage, students can engage in activities that require them to sort pictures of words that begin with beginning consonants or consonant blends. At a syllable juncture level, students can record in their notebooks prefixes and suffixes they have encountered in their readings. Almost any card or board game can be adapted for word study. At the lower level, games such as Go Fish, Bingo, and Black Out can be incorporated, whereas at the upper levels, students can engage in student-teacher-made versions of Rummy, Uno, and Jeopardy (Bear & Templeton, 1998).

ESL-Specific Teaching Implications

"ESL students appear to travel through the same basic stages of spelling development as do other native speakers, but may be found at lower developmental levels than their age level native speaking peers" (Dildine, 1994, p. 133). The type of activities that one would engage with ESL students would be the same for spelling development of all ages; however, ESL students require guidance in discovery of English phonemes/spelling correspondence that their peers have already.

As previously documented in this study, oral pronunciation is important to the ability to spell words. "ESL spellings reflect differences in pronunciation because of how ESL students perceive English sounds. If the sound is similar to their native language, they spell words in L1 like ways" (Dildine, 1994, p. 114). For example, the word *caught* is spelled kat, and *cattle* is spelled cadel.

ESL students also do not retain words they have not added to their English vocabulary; therefore, they memorize words for spelling tests, but the words do not transfer to their writing. This transferability or generalization problem is not just restricted to ESL students or the subject of spelling. However, the problem is just more noticeable. According to Barbe et al. (1982), "The reason that students fail to generalize their spelling skills is that a week's instruction on a word list produces only minimal competence, not mastery" (p. 12). Students, especially ESL students, require ample practice, meaningful application, and reinforcement.

General Implications for Teaching

As mentioned above, to encourage generalization, students require ample practice, meaningful applications and reinforcement, which can best be obtained through writing (Yerdon, 1994). When students are given ample opportunity to practice writing and rewriting their thoughts, they are continuously exercising their spelling skills in ways that go beyond the weekly spelling tests (Barbe et al., 1984).

As educators, we need to remember that the reason people learn to spell is so that they can write. However, when students are discouraged from writing because a heavy emphasis is placed on spelling, then we need to ask why we teach spelling if students will not write. According to Hillerich, "By high school age, students have gotten the message; they have learned how to avoid red marks by writing short, simple sentences (because they can punctuate these correctly) and by using simple common words (because they can spell these correctly)" (cited in Barbe et al., 1982, p. 87). As Hillerich states, "It's time that we let children in on the secret that writing is the most important thing and that correct spelling is a courtesy that we will take care of before a piece of writing goes

anywhere important" (Barbe et al., 1982, p. 88). Therefore, grade teachers need to instill in students that when they do not know how to spell a word, they should put down the initial letter or letters or draw a line and continue to write. When the writing process has been completed, then it is time to "clean up" by inquiring how to spell the unknown word or by finding it in a dictionary, if the dictionary skills have been taught. By reinforcing this technique, students will not interrupt their train of thought, and they will be less likely to choose simpler or less appropriate words merely because they know how to spell them.

Last, but not least, no matter how effective instruction is, students will not become good spellers unless they develop a spelling conscience; that is, students must have a desire and concern for spelling correctly (Barbe et al., 1982). Gentry (1987) provides the following advice for children that could also be applied to adults: "Make an honest attempt to spell werds wright. Right the write werd when you no it. When you dont', hook it up. (That is, hook up your computer, type in your message, and then turn the spelling check)" (p. 53).

References

Abell, S. (1994). *Helping adults to spell.* Adult Literacy and Basic Skills Unit. (ERIC

Document Reproduction Service No. ED371234).

Apel, K. (2001, July). Theory-guided spelling assessment and intervention: A case study.

Language, Speech, and Hearing Services in Schools, 32(3), 4. Retrieved April 16,

2003, from the Academic Search Premier database.

Asselin, M. (2001). Supporting students' spelling development. *Teacher Librarian,*

29(2), 1-2. Retrieved July 4, 2002, from the Professional Development Collection

database.

Barbe, W. B., Francis, A. S., & Braun, L. A. (1982). *Spelling: Basic skills for effective*

communication. Columbus, OH: Zaner-Bloser.

Bardine, B. (1997). *A review of a study of the spelling development of adult literacy*

learners compared with that of classroom children. Kent, OH: Ohio Literacy

Resource Center. (ERIC Document Reproduction Service No. ED413534).

Bear, D. R., & Templeton, S. (1998, November). Explorations in developmental spelling:

Foundations for learning and teaching phonics, spelling. *Reading Teacher, 52*(3).

Retrieved July 4, 2002, from the Professional Development Collection database.

Bourassa, D., & Trieman, R. (2001). Spelling development and disability: The

importance of linguistic factors. *Language, Speech, and Hearing Services in*

Schools, 32(3) 1-11. Retrieved April 1, 2003, from Academic Search Premier

database.

Brandt, T., & Gielbelhaus, C. (2000). *Word study and spelling achievement.* Paper

    presented at Annual Meeting of Mid-Western Educational Research

    Association, Chicago, IL. (ERIC Document Reproduction Service No.

    ED447197).

Brooks, G., Gorman, T., & Kendall, L. (1993). *Spelling it out: The spelling abilities of*

    11- and 15-year-olds. Retrieved May 15, 2003, from

    http://privatewww.essex.ac.uk/~vcook/LG645-24

Charles, C. M., & Mertler, C. A. (2002). *Introduction to educational research* (4th ed.).

    Boston: Allyn & Bacon.

Dildine, D. (1994). *Spelling acquisition in the elementary ESL classroom.* Unpublished

    master's thesis, Arizona State University, Tempe, AZ. (ERIC Document

    Reproduction Service No. ED379925).

Fielding, E. (1995, April-May). Learning to spell vs. using the spellcheck. *Reading*

    Today, 12(5), 27.

Fitzpatrick, W. J. (1960). *The nature of sex differences in spelling as evidenced by*

    Canadian children's free writing. Unpublished master's thesis, University of

    Alberta, Edmonton, Alberta, Canada.

Ganske, K. (1999). The developmental spelling analysis: A measure of orthographic

    knowledge. *Educational Assessment, 6*(1), 1-12. Retrieved July 4, 2002, from the

    Professional Development Collection database.

Gay, L. R., & Airasian, P. (2000). *Educational research: Competencies for analysis and*

    application (6th ed.). Upper Saddle River, NJ: Prentice-Hall.

Gentry, J. R. (1981, January). Learning to spell developmentally. *The Reading Teacher,*
34(4), pp. 378-381.

Gentry, J. R. (1987). *Spel...is a four-letter word.* Portsmouth, NH: Heinemann
Educational.

Gordon, A. I. (1994). Successful spelling strategies for adult learners. *Michigan Adult*
Education Practitioner Inquiry Report. Information Analysis. (ERIC Document
Reproduction Service No. ED401380).

Hanlon, M. M., & Cantrell, R. J. (1999). Teaching a learning disabled adult to spell: Is it
ever too late? *Journal of Adolescent and Adult Literacy, 43*(1), 1-4. Retrieved July
4, 2002, from the Professional Development Collection database.

Henderson, E. H., & Beers, J. W. (1980). *Developmental and cognitive aspects of*
learning to spell: A reflection of word knowledge. Newark, DE: International
Reading Association.

Hodges, R. E. (1981). *Learning to spell.* Urbana, IL: ERIC Clearinghouse on Reading
and Communication Skills.

Hodges, R. E. (1984). *Spelling.* ERIC Digest. (ERIC Document Reproduction Service
No. ED250695).

Hughes, M., & Searle, D. (2000, January). Spelling and "the second 'R.'" *Language*
Arts, 77(3), 203-208.

Kamhi, A., & Hinton, L. (2000). Explaining individual differences in spelling ability.
Topics in Language Disorders, 20(3), 37-49.

Kreiner, D., Schnakenberg, S., Green, A., Costello, M., & McClin, A. (2002). Effects of

    spelling errors. *Journal of General Psychology, 129*(1), 1. Retrieved April 1,

    2003, from Academic Search Premier database.

Landmark College. (2002). Retrieved May 28, 2003, from

    http://www.landmarkcollege.org/natlinst/assistive_technology/writing/spelling

Lutz, E. (1986). *Invented spelling and spelling development.* ERIC Digest. (ERIC

    Document Reproduction Service No. ED272922).

Masterson, J. J., & Crede, L. A. (1999, July). Learning to spell: Implications for

    assessment and intervention. *Language, Speech, and Hearing Services in Schools,*

    30, 243-254.

Peters, M. (1967). *Spelling: Caught or taught?* New York: Humanities.

Read, C. (1986). *Children's creative spelling.* Boston: Routledge & Kegan Paul.

Rios, D. (2000). *Gender differences in spelling achievement.* Unpublished master's

    research project, Kean University, Hillside, NJ. (ERIC Document Reproduction

    Service No. ED438563).

Scott, C. (2000). Principles and methods of spelling instruction: Applications for poor

    spellers. *Topics in Language Disorders, 20*(3), 66-82.

Seith, R. (n.d.). *Do spell checkers make you dumb?* Retrieved May 28, 2003, from

    http://www.connectingwithkids.com/tipsheet/2003/123_may05/dumb.html

State moves to new standard on ITBS/TAP; scores remain stable. (2000). Retrieved April

    14, 2003, from

    http://www.sde.state.id.us/webdocs/Administration/News_Releases/912~01-

    01_January/00-01-13

Stewart, C. (1988). The perceptions and strategies of good readers/poor spellers and good

   readers/good spellers as they relate to spelling performance. Unpublished master's

   thesis, York University, Toronto, Ontario, Canada. *Masters Abstracts*

   International, 30(03), 462.

Treiman, R., Goswami, U., Tincoff, R., & Leevers, H. (1997). Effects of dialect on

   American and British children's spelling. *Child Development, 68,* 229-245.

Wilcox, W. (1991). *The predictive validity of the Wide Range Achievement Test and*

   Achievement Scores of ESOL Adults. ERIC Digest. (ERIC Document

   Reproduction Service No. ED341294)

Wilkinson, G. (1993). *The Wide Range Achievement Test: Administration manual.*

   Wilmington, DE: Wide Range.

Yerdon, C. (1994). *The relationships of developmental spelling scores and reading*

   ability: Can one be used to improve the other? (ERIC Document Reproduction

   Service No. ED384180).

Appendix A. Parent/Guardian Consent Letter

Box 298
Picture Butte, AB
April 7, 2003

Dear Parent/Guardian:

I am conducting a research study titled "Spelling Development: A Comparative Study of Adult Learners and Grade Seven Children" as a project submitted to the University of Lethbridge in partial fulfillment of the requirements for the Master of Education degree. The purpose of this study is to compare the spelling performance and attitudes between young writers and adults.

Your son or daughter has been selected as a participant for this study for several reasons. First, I am interested in researching how young writers' and adults' perceptions of their spelling ability influence their spelling scores. Second, all participants for this study are unknown to the examiner; therefore, there are no preconceived expectations of participants' performances on the WRAT3 and/or Likert scale. Finally, all participants have been or are currently in a language arts/English or reading course.

I anticipate that your child and others will benefit from participation in this study by being aware of the stages of spelling development, as well as the implications for instruction. Therefore, I would like your permission for your son or daughter to participate in this study.

Your son or daughter will be involved in this study by way of the following:

1. Writing the Wide Range Achievement Test (WRAT3) – spelling section only

2. Completing a Likert scale – opinions on spelling

Both of these activities should not take more than 30 minutes to complete, and there are no foreseeable risks involved. Please note that your son or daughter's responses and test scores will be anonymous and confidential. All names, locations and any other identifying information will not be included in any discussion of the results. Individual test scores and opinions will not be shared with the instructor/teacher, parent/guardian/, or students. The information that will be disclosed, however, will address the central question: Does the spelling development of adult learners differ from that of Grade 7 children? In addition, it will address spelling development and its association with age, gender differences, first language experiences, and other factors affecting a student's perception of spelling development.

Your son or daughter's participation in this research study is voluntary; therefore, you have the right to withdraw your son or daughter from the study without prejudice at any time. By signing this consent form and returning it to the school with your son or daughter, you are giving consent to participate.

I very much appreciate your son or daughter's assistance in this study. If you have any questions, please feel free to call me at (403) 738-4331 or email me at the following address: julie.boras@lethbridgecollege.ab.ca . Also, feel free to contact the supervisor of my study, Dr. Leah Fowler, at (403) 329-2457 or email her at leah.fowler@uleth.ca and/or the Chair of the Human Subjects Committee, Dr. Cathy Campbell, at (403) 329-2459, or email her at cathy.campbell@uleth.ca if you wish additional information.

Sincerely, Julie Boras

University of Lethbridge

(403) 738-4331/julie.boras@lethbridgecollege.ab.ca

PARENT/GUARDIAN CONSENT FORM

Name of Research Project: Spelling Development: A Comparative Study of Adult

Learners and Grade Seven Children

Name of Investigator: Julie Boras

I agree to allow my son or daughter, _____ , to

participate in this study.

Name of Parent/Guardian: _____

Signature: _____

Date: _____

Appendix B. Oral Likert Five-Point Scale

Section 1:

Demographic Information

Complete the following information:

Name: _____

Gender: Male _____ Female _____

Grade: _____

Age: _____

English is your first language. Yes _____ No _____

Section 2:

Following are a number of statements describing spelling. Read each statement and shade

the letter on the Scan-tron card that matches your response of whether you strongly agree

(SA), agree (A), neutral (N), disagree (D), or strongly disagree (SD).

       A= Strongly Agree

       B= Agree

       C= Neutral

       D= Disagree

       E= Strongly Disagree

1. Spelling is important at school.

2. I am a good speller.

3. Because I am a weak speller, I dislike reading.

4. I don't like other people to see what I have written because of my spelling errors.

5. I use a spell checker on my computer to check my spelling.

6. Females are better spellers than males.

7. When I write, I choose words I know I can spell.

8. Getting 100% on a spelling test is luck, not ability.

9. I have always struggled with spelling.

10. To be a good speller, you need to memorize words.

11. Knowing how to spell is important at school and work.

12. As you get older, your spelling improves.

13. Males tend to do well on spelling tests.

14. Spelling is my favourite subject.

15. I use a dictionary to check the spelling of unfamiliar words.

16. Knowing the spelling rules helps me to spell many words.

17. The more you write, the more your spelling improves.

18. I do well on spelling tests.

19. I dislike writing because I do not know how to spell words that I want to use in my writing.

20. There is no need to learn how to spell because there are computer programs that correct your spelling.

Appendix C. Adult and Grade 7 Children's Spelling Errors of Dictated Words from the

WRAT3

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
1. ago				
2. cat				
3. boy				
4. run				
5. will				
6. cut				
7. arm	harm			
8. dress		dres		
9. train				
10. shout		shot		
11. watch		whach		wact
12. grown	growen	growed		growen
13. kitchen		kitcen		kicten
				kitcher
14. result	resault	resault		resault (2)
		reselt		
15. heaven	heven haven	haven		Kevin
		havey		
		heven		
16. educate	edgeucate	ad, edgect		educat
				edtucate
17. purchase	precise	prerases		puccuse
	perches	porch		perchase (2)
		purches (2)		purchuse
		perches		purches
		prudurse		
18. institute	instutute	institude		insatute
	institude	instute		insitute

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
	instatute	institue (2)		instute
		insatude		institut
		institut		
		instidute		
19. suggestion	sugesstion	sugestion (2)		sugestion (2)
		sujesten		sugesstion
		sugesstion		sugjestion (1)
		suggsion		
20. equipment	equiptment	equiment (2)		equitment
	equpment	equiptment		equiptment (2)
		exqupent		
		equitment		
		equment		
21. museum	mueseum	musum		museam
	miseum	musem		musem
	mausyame	musaim		
	museium	measeum		
22. occupy	occupied	occupie (2)		occupie (6)
	occupi	ocupy		aoupay
	ocupy	occupi		occupiy
	acypai	occupp		
	occupie (2)	acupie		
23. illogical	elogicole	elogical	alogical	elogicall
	elogical	elgoly		elogical (2)
	ilogical	logical		alogiclal
		ilogical		alogicale
		logicule		logical
		ilogicle		alogical
		elogick		
24. familiar	familar (2)	familier	familar	fimilar
	familliar	femlary		familier

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
		famililar		fimiliar (2)
		filmier		fumilual
		familyer		famillier
		formally		firmilluar
25. reverence	reference	reverance (3)		reference
	reverance (2)	revends		revrence
		reverent		revrince
		ravrence		reverance (2)
		reveranse		revernce
		revrence		
		revernce		
26. physician	physican	physian		pyhsician
	phisician	physhn		fesition
	phsition	physican (2)		fasition
	phyisician	physcian		physican
	pyasition	phsicsion		fisision
		physition		phycisian
		forsisan		facision
27. prejudice	predgedious	preg ?	pregidous	predicdous
	prejedice	predujice		prejidace
	predajust	perages		pradudus
		perat		prejedus
		prejudece		pregidous (2)
		perjusdicce		pregidos
		predigious		pregidus
		prejiduce		pregadise
		presidtion		predjidice
				predigious
				predidoud
28. appropriation	apropriation	apporeasion	oppropriation	apropration
	appropiation	apropreation		apropreation (2)

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
	approperiation	pro		appropreation (2)
	appropiration	appresion		
	appropreation	appopriation		
		properation		
		propreation		
29. necessity	neccesity (2)	enssitea	necesitie	nesesidy
	neccassity	nesseity		nessadi
	neseasaty	inesatie		necessidy
	naccatiy	nesa		nasesity (2)
		nececady		nasesadie
		nessaty		necessaty
		nesecity		nacessity
		neccesity		nessesity
		necessety		
		necessesity		
30. commission	commisson	comission	commision	commition
	commision (3)	commison (2)		camision
		comeshen		commision (3)
		comishon		comition
		commision (4)		comission (1)
		comsission		
		conmision		
31. assiduous	asituists	asichuis	asidous	asiduous (3)
	asitious	sechuesi		asiduace
	asiques	cetues		asiguse
	asetuious	accuaciduse		asidus
	asiduase	asituous (2)		aciduos
	asituwise	acidujuce		asiduas
		asechuess		asidguis
		asidition		asiguace
				asidious

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
				asigus
				asiguos
32. loquacious	loquatious	locaquish	laquations	loquatious (5)
	locotious	loquasis		lequatous
	loquasous	leqlases		loquatous
	locasious	locaision		locuatious
	lochatuious	lokvatios		lacwacious
	loquacuases	loquatious		loquasious
	loquishie	loqatous		laquasious
		loquasous		locasious
		loquasios		
		locutious		
		lowqusiers		
33. sovereignty	soverinty	shovetie	sovernty	sofernty
	soventy	sovernty (2)		sovernty (9)
	sofereignty	soreight		sverty
	sovrenity	sofrierrey		soverntey
	saverenty	sovrenty (3)		sourintie
	soverntie	soveretea		
	shovertie	souverenty		
		soventry		
34. irresistible	irresistable-2	irrestiable	irrestible	irresisatble (6)
	irressistable	erisistable		irrisitable
	irrisistable	reairstable		ireasistable
	irrasistable	irresistable (4)		erasistable
	irresitable	iresistible		erisistable
		irrestitable		
		earesistable		
35. occurrence	occurance (3)	occurance (5)	occurrents	occurance (8)
	occurence (2)	occurrents		occurrance

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
	accurance	orcerench		occurence
	ocurrance	occurrance		currence
		auccountse		ocurence
		occourance		occurents
		orcornent		
36. auricular	arickular	arickcular	arriguler	arricular (4)
	oricular	ariccular		aricullar
	aricular (2)	anreailary		irricular
	arricular	oriqulite		aricular (2)
	oriculare	iriculare		ariculare
	aricler	aricular		arichular
		arricular		erricular
		ariqular		
		areeelure		
		uriculer		
		arecullar		
37. imperturbable	imperterable	impurterable	impreturbable	imperterbble
	impa	imterperbable		impriterbable
	impertabible	imtorable		inturbble
	impertterbable	impterberbal		imperterbable (6)
	emperterperble	importurable		iperterbable
	imperteable	eimpturable		impurtupule
		imperterable		impertebble
		imperterbable		inperterbable
		impiterbable		
		impertubable		
		imperable		
38. iridescence	irredenscence	irradessents	eridesance	irredesance (2)
	irridecense	irradecence		irridesence
	iradensis	reinants		ieradusence
	irridesence	iridecance		irridescence

Words Dictated	Adult Males	Adult Females	Gr. 7 Male	Gr. 7 Females
	eridacence	iredesence		irridesence
		iriadecent		eradesence
		irradescense		earadesance
		irradecence		irredensense
		earedascent		irredesence
		iredesence		iradecance
				earidesence
				irredecens
39. boutonniere	boutinia	bootarire	bootineer	Boutenier
	bootänere	botnear	⁓	boutimere
	boutenaire	bouqanar		bootinier
	butanier	bootiner		boutaner
	boteniar	butener		boutiniere
	buttenier	bootener		bootineir
	bootan	bootanear		bootanier
		bootineer		bootaneer
		boutiner		bootimere
		bootiniere		bootenier
		booteneer		bootanere
				bootinear
				boutineer
40. mnemonic	nomonic (2)	enmonic	nominic	nomonic (2)
	nemonic	nomonic (2)		nemonic (2)
	unomic	monerge		nimonic
	numomic	pneumonic		nomonace
	nymonic	numonic		namonic (4)
	mnewmonic	namonic		nomanic
		nomoic		pneumonic
		nomonick		numonic
		emonica		