Pupils need to become good spellers to communicate effectively with others. Pupils should understand the meaning of words to be mastered before studying their spelling. Teachers need to provide a variety of learning opportunities to assist pupils in learning to spell words correctly. Pupils should develop a definite methodology in learning to spell words. Pupils need to perceive reasons for learning to spell a given set of words. The spelling curriculum should be as individualized as possible. Creativity should be stressed in pupils learning to spell words. Although not recently developed, the Dolch list of 220 words has merit because the words are commonly used by pupils in everyday reading and writing. Selected cautions that teachers need to be aware of when teaching spelling include: do not "go overboard" on phonics; many words in spelling textbooks may not be truly useful for pupils to learn to spell; and too often pupils are taught as if all possess readiness for the same number of words to be mastered in spelling. Computer use is one way to strengthen teaching and learning of spelling. Illegible handwriting may be a major cause for incorrect spelling of words. There needs to be a proper balance among understandings, skills, and attitudinal objectives in handwriting instruction. Good handwriting that is legible needs to be stressed throughout the different curriculum areas. Improved communication results when quality spelling and handwriting are involved. Spelling and handwriting skills can best be developed in context within the writing activity. (RS)
Pupils need to become good spellers to communicate effectively with others. Spelling is a tool to use to make known personal needs as well as to communicate feelings and appreciations. Correct spelling of words will always be necessary, even with the mass amount of technology available to many in society. Why? a person does not always have a computer at a specific place to process words. If the word processor is available, individuals still need to spell words reasonable close in accuracy for the spell checkers program to work and be effective. Thus, if a word is misspelled greatly, spell checkers will not list the needed correct spelling of the word on the monitor. Then too, sometimes, it is more convenient to use long hand in writing rather than starting a computer up and using the attached printer. A personal message written in long hand may convey information to the reader better as compared to a printed document. How then might pupils be assisted to become proficient spellers?

Guidelines for Teaching Spelling

I would like to state selected guidelines which good teachers have used successfully in the teaching of spelling. First, pupils should understand the meaning of words to be mastered before studying their spelling. Meaning theory suggests that if pupils understand context, they will learn more effectively and depth learning may then be in evidence. Teachers need to take time for pupils to give definitions and/or be able to use a word contextually within a sentence. Some words are difficult to define and should then be used by the learner in a meaningful sentence. If a word can be defined and a pupil is ready to explain the meaning, he/she should do so. I believe that being able to use a word in a sentence and with a clear meaning, the learner is then ready to study the correct spelling of that word. I hope that words mastered in spelling will also be retained in memory for reading content as well as for writing in different academic areas. It is good if a pupil makes use of spelling words in many ways such as in reading those same words in literature, social studies, science, and mathematics content. If pupils do not identify words correctly or a halting procedure is used in reading, the chances are comprehension will suffer in the process.

Second, the teacher needs to provide a variety of learning opportunities to assist pupils in learning to spell words correctly. Do I approve of the use of spelling textbooks in guiding pupils in learning to spell? It is not the textbook that is good or bad, but it depends upon how they are used by pupils and the teacher. There can be selected
fascinating activities for learners within the confines of a spelling textbook that has been carefully chosen. Thus, here are activities that truly benefit and make spelling enjoyable. For example, in one lesson in a spelling textbook, there are the usual list of words for pupils to master. How are they to achieve this task? One approach in the text is to have pupils fill in blank spaces in sentences given, whereby the words for the fill in, come from that list. Pupils can be very attentive in doing this when application is made of the new words to be mastered in spelling. Seemingly, many pupils are interested in this activity even though it does occur generally in each weekly lesson. I think that the activity has variation each week due to changing words that are used to fill in the blank spaces within sentences. The teacher should always observe pupils to notice if boredom sets in and, if it does, to switch to a different experience. The teacher cannot do a prefect job of varying activities when boredom sets in, but he/she can do the best possible to keep pupils on task. With twenty to thirty pupils in a classroom, it is difficult to provide for individual needs of all pupils. Additional tasks in a textbook to be used to help pupils learn to spell words correctly are cross word puzzles that use words from the weekly list in the spelling text. Friendly and business letters are to be written using selected words from the spelling list. The teacher needs to be creative in text use in teaching spelling by thinking of and implementing other learning opportunities than those indicated in the weekly lesson.

Third, I believe that pupils should develop a definite methodology in learning to spell words. A good speller, no doubt, has a workable method of learning to spell words correctly. Those who do not spell words correctly, in may cases, may need a new methodology in mastering the correct spelling of words. I like the method that many pupils have used correctly in learning to spell. Thus, the pupil needs to look at the new word carefully. It is doubtful that a teaching strategy will work if the pupil here does not look at the word carefully for mastery purposes. The teacher needs to observe carefully if pupils are truly focusing upon a word to acquire in correct spelling. Next, the pupil should pronounce the word correctly. Spelling errors are made due to inaccurate pronunciation of words. Hopefully, the pupil will listen to all the sounds with that word being studied for mastery in spelling. Involved sounds need to be associated with the correct graphemes or symbols. The learner then should practice writing the word once. The written word may then be checked with the correct spelling. Too frequently, pupils are asked to write a word five or ten times immediately; the word written might be misspelled then ten times. Better it is, to write the word once and check accuracy of spelling. Once the word is spelled correctly, the pupil may wish to write it several times in a contextual situation.

Fourth, pupils need to perceive reasons for learning to spell a given set of words, be it from the textbook or from other sources. Purpose is vital for success in learning to spell words correctly.
The teacher may say why it is important to learn to spell words correctly in a specific lesson. A deductive approach is then in evidence. Inductive procedures may also be used such as a teacher asking questions of learners so that the latter understands the merit of learning to spell a given number of words correctly. Extrinsic rewards are used by some teachers to motivate pupils to study and master the new set of words in spelling. Thus, a teacher may say how many words need to be spelled correctly by Friday to receive a prize. These prizes are generally visible to pupils. Learners then know what to do to receive the award. I recommend that if extrinsic awards are given for learning, pupils should, as soon as possible, feel a desire from within to learn to spell words correctly as an intrinsic motivational device. The extrinsic rewards should be removed as soon as possible and not become a crutch or lever used to spell words correctly.

Fifth, pupils should learn to spell words correctly in a contextual situation. The new words are then used in functional situations. Words and their correct spelling are meaningful within a practical endeavor. I recommend that pupils determine useful ways to spell words correctly within contextual situations. The learner may then use the new words when writing an invitation for his/her birthday party. Further uses include writing business and friendly letters, content in greeting cards, prose and poetry, poetry, narrative and expository accounts, short stories, announcements, and thank you notices, among other functional writing activities.

How many words should a pupil learn to spell correctly per week? This depends upon the present achievement level of the involved learner. To be sure, too many words may be required for a pupil to master in spelling. The opposite extreme would be too few words are learned to spell words correctly in a given time interval. The teacher needs to observe each pupil and notice what a reasonable number of words might be. There is nothing sacred about mastering twenty spelling words per week in the third grade, for example. It is important always to challenge pupils to do their very best in all curriculum areas.

Sixth, the spelling curriculum should be as individualized as possible. To some educators this means that each pupil should have a unique set of words to master in spelling. These words may come from those the learner misspelled from diverse writing activities the preceding week. The number of words in this list must be adjusted to fit the abilities of the individual learner so that too many or too few words are not required for mastery within a designated time. This seems to work fairly well in the spelling curriculum provided that learners do not refuse to use words in writing unless they are spelled correctly. The reason for doing this pertains to keeping the number reasonable of those words misspelled and needing to be studied for mastery. Another approach that might be used pertains to adjusting the number of words from the spelling textbook that need to be spelled correctly per week. Pupil A
then may find it easy to learn to spell all words correctly plus a bonus list of words per week. Pupil B might be able to spell ten of the twenty words correctly per week. Once Pupil B has experienced success, he/she might become motivated to increase the number of words spelled correctly per week. I have noticed that pupils who are successful do volunteer to do more work than formerly and go beyond minimal levels. It takes time and effort for the teacher to make these adjustments for individual pupils. But with good teaching, teachers attempt to provide for individual differences among learners in the classroom. Even though the spelling curriculum is individualized, there may be pupils who wish to work collaboratively. Learning styles differ from one pupil to another such as wanting to work intrapersonally or by the self as contrasted with interpersonal or committee work. Here, pupils should have a voice in how they wish to study and learn, individually or in a group, to achieve more optimally in spelling.

Seventh, I recommend that creativity be stressed in pupils learning to spell words. So often, spelling is taught as rote learning and memorization. Rather, the pupil should have ample opportunities to spell words correctly within creative poetry and prose written or within plays and stories written. Here, I recommend that pupils evaluate correct spelling of words after the creative product has been completed, not during the writing endeavor. Pupils may wish to assist each other when correct spelling of words is emphasized at the end of the creative writing experience.

Eighth, I recommend strongly to provide incentives for pupils to volunteer to learn to spell more words correctly, than those assigned or even going beyond the bonus words. It is surprising what pupils will do to put forth effort when the sky becomes the limit. Intrinsic motivation certainly can come into being when pupils feel rewarded and successful in learning. The teaching of spelling is not known to be the most stimulating curriculum area, but the teacher can work in the direction of it becoming motivating and challenging.

Which Words Should Pupils Master in Spelling?

This question has been debated for a long time. There are teachers who assume that the spelling text alone contains salient words for pupils to master in spelling. The text has had a long history of use in teaching and learning situations. I have looked at spelling texts that came out in the early 1930s. These books had lists of words only for pupils to memorize in spelling per week. There were no suggested learning activities. The teacher each week needed to work out all learning activities that would assist pupils in learning to spell each word correctly. Presently, there are teachers who believe that no spelling texts be used and believe better teaching is an end result. A well
chosen textbook should definitely not hinder good teaching. Ingenious teachers can stimulate pupils to learn with interesting activities that capture pupil attention. No textbook needs to be followed religiously in terms of the recommendations in the manual. The good teacher chooses from among the different activities stressed in the manual section. Additional learning opportunities are brought into the teaching and learning situation that provide for individual differences among pupils. No writer of quality materials would suggest following the manual 100 percent. Writers realize that the teacher is the one to implement the teaching suggestions and must vary the kinds of learning opportunities provided for pupils so that securing the attention of pupils is there and pupils are actively engaged in learning. Not using a basal textbook, in and of itself, does not make for good teaching. The teacher is there to study and implement teaching strategies that assist pupils to attain relevant objectives in the spelling curriculum.

If the teacher uses words for each pupil that the latter missed in everyday functional writing, the teacher still needs to have quality approaches in teaching so that individual pupils learn and achieve. Pupils need to be motivated when attempting to master the spelling words missed in daily writing. The number per week to be mastered needs to be adjusted to what a child can achieve in a reasonable manner. Certainly, a pupil may experience failure if too many words need mastering or become bored if too little is expected in a given time interval.

There have been successful teachers whom I have observed that emphasize spelling words that have been chosen for pupils to master which are based on research findings. Thus, the most frequently used words from a research study of pupils’ writings were selected by the teacher within a list for mastery learning by local pupils. The Dolch List (1954) has been used in teaching spelling by many teachers, even though it is not a recently developed list. This list has 220 words that Dolch’s research found should be learned by pupils as sight words. This might then cut down on the number of errors that pupils make in spelling as well as in word identification in reading. These are the most frequently occurring words in spelling errors in pupils’ writing, according to Dolch. I feel the Dolch List still has much merit because these words are commonly used by pupils in everyday writing and reading today. The word list is not divided by grade levels but is contained in one listing. I recommend that teachers study pupils’ writings to notice which words are used most frequently. Teachers should be involved in doing research and may come up with a revision of the Dolch List. With personal computers in the school and in the home, the statistical procedures, I believe, have been greatly simplified and become user friendly. When I did my doctoral dissertation, completed in 1963, three and three/fourths hours of computer time were purchased at $75 an hour. The same data could now be computed in less than one hour. With personal computers
and assistance from educational researchers, teachers now have more opportunities to engage in research and attempt to solve classroom problems than ever before.

There are numerous statements of objectives in spelling that educators have developed over the years. I believe the following are worthy for teachers to emphasize in the curriculum:

1. assist pupils to master those words which are needed in order to express oneself clearly and accurately in writing.
2. guide pupils to achieve good study habits which assist the learner to pursue diverse kinds and types of writing experiences. Perseverance is a key concept here. Pupils need to establish plans in writing, work toward their achievement, and personally monitor progress. I have noticed pupils who attempt to give up too soon on assigned or voluntary written work. Encouragement by peers and the teacher will go a long way in motivating learner achievement. Pupil pride in achievement aids in setting higher goals in spelling within the writing activity.
3. develop within pupils a set of standards in learning that will help pupils to spell words correctly. These standards involve using phonics to make associations between symbol and sound where this consistency is in evidence. Pupils also need to learn to spell selected words by sight when the consistency between symbol and sound just is not there. Correct pronunciation of words is important so that spelling errors are not made due to that factor.
4. help pupils to realize that correct spelling is a social courtesy and incorrect spelling may reflect negatively upon the pupil.
5. direct quality teaching to have pupils, when ready, learn keyboard skills to use the personal computer to engage in writing. This is necessary for all pupils. Spell checkers can do much to minimize spelling errors when word processing is used. Computers are increasingly becoming user friendly. I have never had a typing class, but on my own, learned to use the word processor. Otherwise, I would have had to quit writing due to expenses involved in paying for typing services. My typing is anything but good in the original typing. But with the spelling checkers program and flexible, easy ways of making corrections, I could now type my own doctoral dissertation. With the old typewriters, I would have had to end my own typing after a few words appeared on paper. With many words typed with errors, I would have had to start completely over with each page or use much correction fluid! This would eventually look rather unsightly with continuous use of correction fluid.
6. provide friendly assistance to pupils who need help in spelling so that success can be stressed as much as possible in the writing curriculum. A good speller in the classroom may also provide this help. If the latter approach is used, change or rotate who gives the assistance. Each pupil also needs to pursue his/her own interests in
purposeful learning.

7. emphasize the interest factor by letting pupils choose the topic to write on, regardless of the purpose involved. Thus, if pupils are to write limericks, the learner may select within that framework the contents of the limerick. Interest goes a long way in providing effort for learning.

8. let pupils work together in the writing activity involving spelling. Observe that each is participating actively in the spelling/writing experience.

9. involve pupils in self evaluation as well as the teacher participating actively in appraising learner progress. Collaboratively, a learning community may be developed that stresses quality writing in the curriculum.

10. establish quality sequence in pupil learning to spell words correctly. If pupils are involved in determining which words need to be learned in spelling, a psychological spelling curriculum is in evidence. Sequence then resides within the learner, not in other sources. Should the teacher determine sequence in pupil learning to spell words, a logical approach is in evidence since the teacher determines the order of learning activities for pupils (Ediger, 1988).

Pupils should definitely realize that spelling and reading are related, not isolated entities. Being able to spell more words correctly as time goes on should reflect learners' increasing abilities to become better readers. The goals of spelling and reading instruction should develop confidence in the learner to achieve at a higher level commensurate with inherent abilities of the involved pupil (Ediger, 1998).

Cautions in Learning to Spell Words

There are selected cautions that teachers need to be aware of when teaching spelling. Pupils and the teacher should not go overboard on phonics when correct spelling of words is being emphasized. Thus, there are numerous words that lack consistency between symbol and sound such as my, pie, buy, sigh, kite, white, and bye. Each of these words contains the long L sound and yet that sound is spelled differently from word to word. Second, pupils need to learn to spell vital words that are truly useful. Too frequently, words listed in a spelling textbook may not be important enough for pupils to learn to spell. I believe the teacher needs to study word lists in spelling texts, if used, and ascertain the worth of learning to spell each word. There is so much to learn that it behooves the teacher to choose carefully what pupils are to learn. Third, if pupils are to learn to spell a given set of words, they should make application of what has been learned. Much forgetting occurs of mastered words in spelling if there are no related practical endeavors, meaning that applying what has been learned is important. I believe
much time is wasted in learning if pupils are tested only on the number of words spelled correctly on Friday and yet the involved pupil perceives no practical application of these kinds of learning activities. Fourth, too frequently, memorization of correct spelling of words is emphasized and yet meaningful experiences are lacking. Generally, memorization is done for the sake of passing a test, and in this case to receive a good grade from the teacher. I would like to see the evaluation process change to where more emphasis is placed upon pupils' making application of words being studied for correct spelling in ongoing lessons and units of study. Fifth, pupils in many cases lack readiness factors for learning to spell words correctly. What are these readiness factors? Certainly, a pupil should be able to read and pronounce each word correctly. Learners should also be able to use the new words being studied contextually in a sentence that makes sense. Pupils individually need to use the proper tools at hand to analyze parts within a word such as grapheme/phoneme relationships. For those irregularly spelled words, a basic sight vocabulary needs to be developed by learners.

Sixth, too often, pupils in a class are taught as if all possess readiness for the same number of words to be mastered in spelling. Pupils are individuals, not a mass of objects. Learners come with feelings, dreams, and hopes. They need to be treated as human beings with much worth. Thus, the teacher needs to help each pupil to learn as much as possible. The opportunity for pupil learning is now and we need to take advantage of these opportunities. Seventh, there is a lack of emphasis upon diagnosis and remediation when teaching spelling. We need to determine why pupils individually are making errors in the incorrect spelling of words. Do pupils go by phonics too much when learning to spell words and yet one or more of these words are not that phonetic in sound/symbol relationships? Is legible handwriting a cause for improper spelling of words? Pupils need to experience as much success as possible so that motivation is there to learn, grow, and achieve.

Technology and Spelling

There definitely is room for technology use in the spelling curriculum. Its use is one way to strengthen teaching and learning in ongoing lessons and units of study. Computer use should be made available to teachers and learners. The software content of the computer should not duplicate with other materials of instruction, but should provide learning activities which also assist pupils to improve in the area of spelling. There are drill and practice exercises which truly help pupils to achieve more optimally. Words here need to be highly useful with strategies of learning that provide for each pupil's ability level. The drill and practice experiences give learners an opportunity to rehearse the
correct spelling of words. There are needs for drill and practice so that pupils may practice and retain the correct spelling of words at a more optimal level of achievement. Much of what we remember has been presented to us in different ways using a variety of learning activities. Here software and computer use can provide this variety with innovative ways and procedures displayed on the monitor. Also, there are numerous games that pupils may engage in individually or collaboratively that stress the correct spelling of words, as shown on the monitor. These games may provide wholesome competitive activities between two or three sides. Thus in rotation, one side may score points for the correct spelling of one or more words whereas the two other sides or single side, in sequence, may come back with spelling other words correctly to score points. The winner has the most words spelled correctly. Games in spelling are good for pupils to play competitively, if appropriate attitudes are in evidence.

Tutorial software programs provide new words for pupil mastery, as shown sequentially on the monitor. Diverse learning opportunities are provided so that pupils may master these new words in spelling. Also, there are simulations that attempt to represent lifelike situations whereby pupils are to engage in problem solving in virtual reality. The encounters here are quite realistic and provide for situations involving higher levels of cognition such as critical and creative thinking as well as problem solving. At the same time, pupils are engaged in attempting to spell words correctly. Since a more utilitarian situation is involved in simulations, pupils tend to find these activities to be challenging and real.

I find that pupils engaging in using the word processor to write creatively or functionally is one of the better ways to stress correct spelling of words. Here, pupils need to be proficient in spelling during the actual composing situation when using the words processor. It is true that spell checkers does provide much assistance in helping pupils make corrections in spelling. However, the commands provided by the learner in writing content into the computer need to be very close in correct spelling or spell checkers cannot provide the correct spelling on the monitor of the word processor. All pupils, when ready, should master use of the word processor to write prose, poetry, or utilitarian content. Mehlinger (1997) asks the following provocative questions when using computers in the curriculum:

1. How would teachers teach if textbooks were replaced by small multimedia devices that serve as both computer and communications tool?

2. What would school libraries be like when students have access to the libraries of the word?

3. How would teaching change when students can contact experts who know more about a single topic than the teacher?
These are three excellent questions that need pondering for all educators. I recommend both technology and textbooks, carefully chosen, be used to provide for individual differences among learners. Diverse kinds of materials need to be used in teaching and learning. Individuals possess diverse learning styles and the professional teacher attempts to harmonize instruction with pupil learning styles. Bermman and Tinker (1997) discuss a seminar method of instruction with the use of technology:

Many teachers who experiment with online courses report being overwhelmed with enrollments of 10 or 12 students because they set up e-mail conversations with each student. The better model is more than a seminar, in which the teacher determines the topic and activities, encourages substantive interactions among students, monitors and shapes the conversation, and promotes an atmosphere in which students respond to one another’s work. This model results in more conversation, is far more likely to be constructivist, and builds on the rich learning that takes place in groups.

Collaborative endeavors that stress the learning of correct spelling of words within purposeful writing activities certainly do emphasize positive ways in the use of technology. Interactions among learners do tend to make for higher levels of cognitive endeavors within the framework of critical and creative thought as well as problem solving.

Handwriting, Spelling, and Print Discourse

Illegible handwriting may be major cause for incorrect spelling of words. Handwriting as a separate subject is receiving much less emphasis than formerly. When attending the elementary school years from 1934-1942, handwriting received considerable time for instruction; approximately, fifteen minutes per day was spent in handwriting instruction. We learned to write in the air to form individual letters correctly. The making of ovals so that no line was crossed with another received much emphasis as did push and pull exercises, again with no strokes crossing each other. Maybe these activities had something to do with a transfer value in becoming better handwriters. I truly doubt if this was the case, however. Probably, more time should have been given to the actual writing of prose and poetry, as well as other forms of print discourse. Thus, use needs to be made of what has been learned in handwriting experiences.

What might the teacher do to assist pupils to improve in handwriting? Here, the teacher needs to give much attention to child growth and development characteristics. A lengthy period of time given to handwriting instruction may not harmonize with psychomotor skills and
readiness of the learner. Much tension may be built up by the learner if he/she is required to write extensively. Activities may be changed so this does not occur, such as changing to a reading experience. It is always good procedure in teaching to observe the attention span of pupils to notice when sequential activities need to be changed. I strongly recommend handwriting be taught within an ongoing activity involving purposeful writing. Application might then be made of what is being emphasized in terms of objectives of instruction. Handwriting and content written become one, not separate entities.

The objectives of handwriting need to be chosen carefully so that relevance is in evidence. The making of ovals and push/pull exercises were eliminated from the elementary school curriculum some time ago due to a lack of significance involved. To spend hours and hours on drill pertaining to a set of letters certainly is misusing teaching time. I believe legibility is a key concept to emphasize in the handwriting arena. A pupil does not need to conform specifically to models of upper and lower case letters of the alphabet presented in a handwriting text. The model letters, however, may be used as a guide for pupils to develop legibility in handwriting. If I can read a pupil's written products readily, then I am satisfied with the quality of his/her handwriting. If illegible handwriting is in evidence, then objectives of instruction need to be developed and implemented so that the child becomes a writer of legible content.

Pupils should feel successful in ongoing experiences. Thus, a pupil is making progress over his previous work in handwriting. Learners should not be compared with each other in legible handwriting. Why? Pupils individually are at different achievement levels in using neuromuscular skills. Teachers need to develop interest within pupils in achieving at a higher level in handwriting. Three kinds of objectives need to be stressed in handwriting. These are knowledge objectives whereby pupils have the needed content about legible letters, words, phrases, sentences, and paragraphs to write in an illegible way; skills objectives whereby learners use what has been learned; and attitudinal objectives in which learners develop positive feelings in wanting to improve over previous levels in handwriting.

More specifically, objectives of instruction in handwriting should achieve the following:
1. how to form letters legibly.
2. how to align letters appropriately.
3. how to space letters and words properly.
4. how to stress proper proportion of letters within words.
5. how to achieve overall legibility in written discourse.
6. how to appraise the self in the quality of handwriting exhibited.
7. how to emphasize neatness in all written products as final copies.
Skills objectives should emphasize the following:

1. form letters and words illegibly.
2. align letters and words properly.
3. appropriate proportion of letters and words.
4. proper spacing of letters and words.
5. self evaluation in achievement in general as well as specific skills in handwriting.
6. neatness in the handwriting arenas.

Attitudinal objectives for pupils to achieve should place importance on the following:

1. desiring to improve in the area of handwriting.
2. wanting to improve in the area of letter formation.
3. developing positive attitudes toward having proper proportion.
4. feeling a need to space words and letters properly.
5. voluntarily assessing personal achievement in handwriting.
6. emphasizing neatness in activities involving handwriting.
7. respecting the progress of others in handwriting.

There needs to be proper balance among understandings, skills, and attitudinal objective in handwriting. Pupils do need knowledge pertaining to what makes for quality handwriting, but the knowledge needs to be implemented as skills. Hopefully, positive feelings as attitudes within learners will develop as a result.

Quality Handwriting Across the Curriculum

Good handwriting that is legible needs to be stressed throughout the different curriculum areas in the school setting. Thus in mathematics, written work of pupils becomes difficult to evaluate unless good handwriting is there. Good handwriting needs to infiltrate numerals written as well as story or word problems composed by learners. Reports written such as biographies of famous mathematicians provide more opportunities to have pupils practice proper handwriting skills.

In science, pupils individually or in committees may write up the results of a science experiment, a method of procedure in doing an experiment, a report written on a self selected topic in science, bar or line graphs developed on temperature readings on a daily basis, notes written on content read in science from a well known encyclopedia, an outline written from a variety of reference sources in science, criteria written on being an effective member of a discussion group in science, as well as summaries on main ideas obtained from a videotape.

In social studies, pupils may write business letters to order free and inexpensive materials pertaining to an ongoing unit of study, friendly
letters to pen pals, generalizations involving content read from diverse reference sources, relevant facts in reaction to a question raised by pupils in the classroom, as well as announcements to other classes to come to visit the pupil's classroom to observe completed projects related to an ongoing unit of study in social studies. Additional learning opportunities involving handwriting in the social studies include the following:

1. Speaking parts for pupils involving early days of Puritans in the New World.
2. Directions written for making a relief of the continent being studied in the social studies.
3. Standards may be written for evaluating an oral report.
4. An outline might be written to cover content pertaining to conclusions reached on an important selection read from social studies materials.
5. Hypothesis written involving one or more hypotheses written in a problem solving activity.

In the literature curriculum, there are many opportunities for pupils to practice handwriting, including the following:

1. Labeling objects in the classroom in a reading readiness program.
2. Using handwriting texts as the need arises, such as for a model in the writing curriculum.
3. Developing experience charts written by pupils with teacher guidance in a reading readiness class.
4. Writing ideas involving reading for a variety of purposes, such as from critical reading, reading to follow directions, factual reading, reading for a sequence of ideas, creative reading, reading for main ideas, and reading to develop generalizations.
5. Pupils need ample time to practice forming letters correctly, writing letters and words with proper alignment, slanting letters correctly, spacing words and letters properly, and using proper proportion of letters.

6. Pupils with teacher guidance need adequate time to write news articles. The resulting newsletter could be sent home weekly, biweekly, or monthly on important happenings in class.

In the health curriculum, the following writing experiences involve handwriting:

1. Learners may take notes on a talk given by a physician pertaining to improved health practices in everyday living.
2. Main ideas might be written on a set of slides or illustrations presented by a registered nurse on improving healthful living in the
community.
3. each pupil might write a personal experience chart pertaining to content from a filmstrip related to a facet of healthful living.
4. letters may be written to the city council making recommendations on improving a polluted area.
5. menus may be written for a week on implementing balanced diets in the school lunch program.
6. business letters may be written to order free and inexpensive materials relating to an ongoing health unit of instruction.

Conclusion

Handwriting errors certainly may cause spelling errors. The teacher needs to do much diagnosing to ascertain why pupils misspell words in writing. Writing needs to be emphasized in all curriculum areas. Improved communication results when quality spelling and handwriting are involved. Courtesy is also inherent when the learner exhibits the best spelling and handwriting in ongoing contextual writing activities. Purposeful writing experiences propel pupils to put forth effort to attain worthwhile objectives. Quality knowledge, skills, and attitudes as three categories of objectives should be achieved by pupils. Pupils need to practice much writing so that increased proficiency is in evidence. The writer has treated spelling and handwriting within the broader perspective of writing. Spelling and handwriting skills can best be developed in context within the writing activity. Successful learners in writing will increase their abilities in spelling and handwriting. Careful selection of objectives, learning opportunities, and evaluation procedures need to be in the offing.

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