

SPELLING IN THE MIDDLE SCHOOL
THE TESTING OF THREE TEACHER APPROACHES
THESIS

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Abstract

The objective of this study was to evaluate three current practices in the teaching of spelling to see if these approaches were effective. These approaches were the teaching of spelling rules, the practice of independently assigned word lists, and the teaching of syllabication to aid in the memorization of list words. Each method was also compared to see if any one approach was more effective than another. The subjects of this study were 51 twelve year olds heterogeneously grouped into three seventh grade classes. Data were collected from identical teacher-made pre and posttests. Posttests were administered six weeks after direct instruction was concluded. An analysis of variance was used to determine the statistical difference between each treatment's pretest and posttest means, and a secondary analysis was used to determine which pairs of pretest and posttest means were significant across groups. The statistical evidence indicated that there was a significant difference between pre and post tests for all three treatment groups. A significant difference was also found to exist between the syllabication and list

groups for both the pretest and posttest means. There was no significant difference for either pre or post between syllabication and rule, or between list and rule. This difference between syllabication and list groups seemed to indicate that the list group's knowledge was higher at the pretest level. Therefore, it was concluded that all three treatments were statistically effective, but no single treatment was more effective than another.

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Chapter I

Statement of the Problem

Purpose

The purpose of this inquiry was to measure the immediate and long term effectiveness of three teaching approaches for spelling instruction.

Overview

Spelling instruction in most of today's classrooms has not advanced beyond where it was in the 1890's (Frith, 1980; Funk & Funk, 1987). Although research has been carried out in this area, very few teachers have implemented these findings in their instructional approaches (Funk & Funk, 1987; Lehr, 1984). Some have no systematic spelling instruction, or the average class offers two or three fifteen minute instructional periods for it per week (Frith, 1980).

Likewise, public school systems do not place enough importance on the teaching of spelling (Frith, 1980). This is surprising considering that today's society uses the ability to spell as a measurement of

an individual's educational and social background (Hodges, 1982). The ability to spell correctly is often regarded as a sign of literacy (Recht, Caldwell, & Newby, 1990).

This does not mean that there are not dedicated teachers spending their time and efforts in attempting to teach children how to spell. They try different approaches, but still fail to see learned material retained over time or transferred into other contexts (Recht et al., 1990).

This study investigated three formal teaching methods: the teaching of spelling "rules," assigning independently-learned word lists, and the teaching of the use of syllabication in the learning of list words. Are these approaches effective in helping students to retain and apply learning to future, similar situations?

Questions to be Answered

1. Will seventh grade students apply spelling rules for pluralization, six weeks following formal (direct) spelling instruction?
2. Will seventh grade students using syllabication retain the correct spelling of list words, six weeks following formal (direct) spelling instruction?
3. Will seventh grade students retain the correct spelling of list words, independently learned, six weeks following a formal spelling program?
4. Is there any significant difference in spelling achievement between the three methods: the teaching of spelling rules, assigning independently-learned word lists, and the teaching of syllabication in the learning of list words?

Need for the Study

There is a real concern for the quality of education today. Coman and Heavers (1991) state that

one fourth of the population of the United States is scarcely literate enough to function in our society. Government is pledging improvements in education. Local school boards are examining curriculum, and parents are questioning if their children are learning basic skills. There is an emphasis on "back to the basics." Spelling is one of these basic skills.

Goals of a spelling program should include developing independent spellers and spellers who edit their written work. Most programs are developed by teachers, and they need to know what methods work best for their students. Instructional practices should be maintained only if they are effective and agree with what is proven through research (Hodges, 1982; Manning and Manning, 1981).

There is a need for investigating some specific formal methods in the teaching of spelling. The three methods investigated in this study proved to be effective in helping students to apply what they learned to future situations. This inquiry may aid teachers in developing their programs.

Definition of Study Terms

explicit phonics - Each of the sounds associated with a letter is identified in isolation, then blended together with other letter sounds to form words (Anderson, Heibert, Scott, & Wilkinson, 1985, p. 39).

formal spelling instruction/approach - Students are given lists of words and/or rules to study and are tested to see if mastery has occurred (Manning and Manning, 1981, p.9).

implicit phonics - The sound associated with a letter is never pronounced in isolation, but always accompanied with other letters to form a word (Anderson et al., 1985, p. 39).

informal spelling instruction program - Students learn to spell as part of their reading and writing (Manning, 1981, p. 7).

invented spelling - The prereader's and beginning reader's spelling of words using symbols that they associate with the sounds they hear in the words that they wish to write (Clarke, 1988, p. 282)

phonics - The relationship between letters,

speech, and sound (Anderson et al., 1985, p. 38).

syllabication - Breaking words into their biggest pronounceable parts, or syllables (Early and Sawyer, 1984).

traditional spelling - Refers to a child's use of the standard spelling of words by memorization or duplication (Clarke, 1988, p. 282).

Whole language - Reading, writing, and spelling are seen as processes that develop as the learner responds to and acts upon his/her environment (Pickering, 1989, p. 144).

Whole word approach - Words are learned as a "whole" instead of through a "sounding-out" process (Henderson, 1985, p. 8).

Limitations of the Study

This study included only three heterogeneously grouped seventh grade classes, totalling 51 students. These classes were from a rural area in western New York.

The instructional and testing materials were teacher-made for all four groups using the seventh grade level final exam from one school district. This may not be considered the standard level for all seventh graders.

Summary

This study's primary focus was to measure student retention and application of learning when tested six weeks after initial learning occurred. This would offer some insight into the effectiveness of three formal instructional approaches for the teaching of spelling.

Chapter II

Review of the Literature

Overview

In conducting this investigation of spelling, it seemed necessary to include some research on why developing accuracy in spelling is such a problem, the hierarchies of spelling development, different teaching approaches including current studies, and researchers' suggestions for effective spelling programs.

Some Causes of Spelling Difficulties

Some researchers have investigated and found that students have good reasons for their difficulty in grasping and using spelling skills:

Almost without exception, language scientists and historians are impressed- one might say distressed- by the lack of regularity in the English spelling system. Not only do our twenty-six letters not represent sounds consistently, but some sounds have no letter to represent them, some letters may have no sound of their own, some sounds can be signalled by different letters, and some letters may represent different sounds (Henderson, 1985, p. 6).

This sound-to-letter relationship causes a lot of room for error for a child learning to spell. Henderson (1985) goes on to state that one of the added spelling difficulties is that too often the instructor does not understand how a child develops into a "speller." This prevents the teacher from choosing an appropriate instructional program that meets the needs of the students within his classroom environment. Loughheed in her investigation of research (1980) concluded that student reliance upon the use of rules has created spelling confusion. Students need to visualize, identify "hard spots," listen to correct spellings using the visual, and write the correct spelling while maintaining a visual-auditory correspondence.

Many educators cannot pinpoint the role of spelling or decide upon a reliable curriculum to use in the teaching of spelling. Some teachers react by not teaching spelling at all. Since spelling is not acquired naturally by many students, these undecided educators produce students, who by society's standards, appear to lack literacy. This is because society seems

to equate literacy with accuracy in spelling (Yule, 1986). Hodges (1982) believes that teachers' methods should include varied opportunities for students to generate rules about the written language themselves and not just be "told" the rules; the wrong methods have also created the "problem." DeStefano and Haggerty (1985) suggest that learning to spell does not come singularly through spelling lessons, but from experiences with language. Research by Cronnell and Humes (1980) seems to suggest that materials used in spelling programs often do not provide enough practice or allow students to use list words in a meaningful way.

Some researchers believe that a formalized type of spelling is taught too early in school. It should not be taught until the latter part of second grade when students have already begun to read. Rushing the developmental process can cause frustration and damage to a beginning reader (DiStefano & Haggerty, 1985).

Henderson (1985) lists three crucial levels of spelling that each child developmentally enters. As a child develops through these phases, he acquires a

learned vocabulary (sight and meaning) through his/her spelling, reading, and writing.

1. letter to sound: The child recognizes and uses the relationship between the letter and its designated sound.

2. pattern: The child recognizes and uses combinations of letters which represent sounds or syllable units. These patterns serve in a fairly regular repetitive way.

3. meaning: The child recognizes and uses words and parts of words to extract and produce meaning.

Teaching Approaches

Phonics, as a teaching approach, is instruction in the relationship between letters and speech sounds. Most beginning (primary) spelling programs, even elementary programs, include the use of phonics (Anderson, 1985). Anderson details two forms of phonics instruction, explicit and implicit. In explicit phonics instruction, each of the sounds associated with letters is identified and taught in isolation. Then, they are blended together to form words. In implicit phonics instruction, the sounds

associated with a letter are never supposed to be pronounced in isolation. Instead, a teacher writes a list of words on the board or paper and inquires as to what the words have in common. The students arrive at a common sound, or combination of sounds, that they associate with other words that have the same letter-sound combinations. Following this, the students are asked to contribute to the list of words already given.

In Becoming a Nation of Readers (1985), Anderson and his fellow authors go on to offer that a number of reading programs try to teach too many letter-sound relationships. Most programs include spelling, and phonics instruction drags out over too many years. The best way to get children to refine and extend their knowledge of letter-sound correspondences is through repeated opportunities to read. Furthermore, the authors believe that the use of phonics should be implicit, not explicit. This would allow the child to understand and discover for himself the unique relationships involved in the written and spoken word.

Advocates of a whole word approach believe that

words should be learned directly because English spelling is too irregular, and sounding out words is more detrimental to learning than helpful. Once a pupil recognizes a word, its spelling needs to be memorized (Henderson, 1985).

A whole language approach allows children to write and read what they have written. As they learn to read and write, they also learn to spell. Researchers such as Clarke (1988) have proven that there is a connection between spelling, reading, and writing. Reading achievement and spelling achievement correlate closely at the beginning stages. However, reading alone will not guarantee that a student will spell accurately. At the point of being a reader, studying word lists becomes essential to spelling competency (Henderson, 1985).

Children have been successful in writing even before they met traditional standards of spelling or reading. This success has been demonstrated through invented spelling versus traditional spelling. Clarke (1988) conducted a study to test the validity of invented spelling and its contribution to

the spelling, writing, and reading achievement of 102 first grade students. Half of the group wrote using invented spelling, and the other half used a traditional approach. The students were given 80 to 100 minutes of writing time per week. Their prime source of reading instruction was from a basal program with phonics being taught as part of the language arts program. Letter sounds were generally taught in isolation, and children were asked to identify words within reading selections that had the same sounds. Sound sequencing and initial letter sound identification were taught as an aid to word reading. Oral drills and worksheets were used to reinforce phonic lessons. Groups represented a wide range of abilities and socioeconomic, as well as geographical, backgrounds. Equivalence between groups was pretested and children's behaviors during the study were observed, their spelling and reading performance was evaluated by posttest. Tests included the Wide Range Achievement Test, Spelling Subtest Level 1, and a spelling list selected so that half were high frequency and half low frequency misspelled words.

Results indicated that in writing neither group was restricted in their creativity. Invented spellers "invented"; traditional spellers looked or asked for the correct spellings. Ideas in both groups were not restricted by methods. In reading, the invented spellers in the groups were able to use their spelling and phonics skills more easily proving they benefitted from their practice in letter-sound relationships. In spelling, traditional spellers arrived at higher tested scores; however, this did not necessarily automatically transfer into their writing. Invented spellers had been reminded that their ideas were more important than their spelling, while more emphasis for spelling accuracy was placed on traditional spellers during the writing sessions.

The results of an experiment by Dulaney (1987) also strongly suggests that instruction in spelling can and should be correlated with reading instruction because it does lead to increased recognition of words. Seda's (1989) review of present research on the teaching of spelling and teacher application of research seems to show that teachers do not use

research in determining their spelling teaching methods.

Suggestions For Spelling Programs

Manning and Manning (1981) specify two kinds of spelling programs and offer a guideline for the success of each:

1. Informal: Students learn to spell as part of their writing and reading. Care must be taken to initiate experiences that widen the child's interests in reading and writing, so that the learning is not redundant.

2. Formal: Students are given lists of words and/or rules to study. Later, they are tested to see if mastery has been achieved. Writing and reading opportunities must be included within the instruction to add relevance to the memorizing and transfer of the learning of list words.

A study conducted by Hearne, Cowles, and DeKeyser (1987) indicated that "methodology is a matter of finding a common denominator between the child and the task;... kids know how they learn best;.... and spelling is easier if combined with other areas of

language development (p. 201)." Murphy and McLaughlin's study (1990) on the effects of tactile and kinesthetic learning in improving spelling performance indicated that tracing target words and writing with target words in dictated sentences improved the spelling performance of a handicapped student who had repeatedly experienced spelling difficulties.

Anderson (1985) suggests that students beyond elementary level (and adults) experiencing spelling difficulties have not understood or experimented sufficiently with the rules of spelling. They usually rely upon phonics to decode and spell words as they read or write. These learners must be shown relationships (e. g. roots, affixes) to develop an understanding. As they begin to come to this understanding, they will become more confident and be able to learn more difficult relationships.

A study conducted by Yurek (1988) on twelve high school seniors who were spelling and reading deficient indicated that the repeated correct oral spellings of words given to students as they traced the words cursively could result in a significant increase in spelling achievement. This approach utilized a

combination of sensory "channels" (p. 105) that may have helped the students learn the correct spellings.

In a study by Battaglia (1986) mnemonic training as a strategy for teaching spelling proved to be intrinsically motivating for the students using the method.

Lougheed's (1980) research suggested that the training of self study strategies enhances the learning of spelling.

Summary

The English language has built-in difficulties for spellers. Spellers have developmental stages that they pass through as they learn to spell. Effective spelling programs need to be developed using this knowledge. Students seem to learn best when they are given varied experiences with language using multi-sensory approaches.

Chapter III

Design of the Study

Introduction

This study attempted to evaluate three current practices in the teaching of spelling to see if these approaches were effective. It also compared each method, to see if any one approach was more effective than another. The results of this study may add to the current information that has been learned about what might constitute a successful spelling program.

Research Questions

1. Is there a statistically significant difference between the mean pretest scores and the mean posttest scores on identical tests of student recall and application of learning for each group?
 - a. spelling rules
 - b. independent word lists
 - c. syllabication training for list words
2. Are there statistically significant differences among groups when comparing the pretest and posttest mean scores from each group?

Methodology

Subjects

The subjects of this study included three seventh grade classes of 17 students per class, heterogeneously grouped by ability and socio-economic status by random computer selection. Each class served as one of the three groups receiving different treatments during this study. The students were from a rural community in western New York.

Materials

Materials were teacher-made. They included weekly word lists (four with ten words for four consecutive weeks), a "rule" packet for noun plurals that was sectioned for use during four instructional sessions (one session per week for four weeks), and a four-sectioned weekly test sheet to evaluate learning on a weekly basis. This weekly test included a section for the spelling of the ten list words, and a section where ten nouns (five nonsense and five real nouns) were to be pluralized, except for the first week where

only five nonsense words were added to be pluralized. (see Appendix B and C).

Instruments

The pretest and posttest were identical and teacher-made (see Appendix A). They included a top section with four columns of ten words each for the spelling of the 40 list words, and a bottom section that tested the students' ability to pluralize nouns by giving them ten nonsense nouns and six real nouns. This totalled 56 spellings.

Procedures

Students in each class were administered a teacher-made spelling pretest to determine their beginning knowledge of the spelling of forty multisyllabic seventh grade-level list words. These words were selected from this school district's seventh grade final exam. The students' application of eight noun plural spelling rules (nouns requiring the use of the suffixes s and es to form their plurals; nouns ending in patterns of consonant -y, vowel -y,

consonant -o, vowel -o, and ending in f and fe, all needing to be changed into their plural form) was also tested. A separate spelling approach was administered to each group for four consecutive weeks. Group one was given instruction in noun plural rules and independently learned ten list words weekly. Group two was given instruction in noun plurals and instruction in the use of syllabication for the study of their ten weekly list words. Group three received only a list of ten words to be tested weekly. Finally, a posttest identical to the pretest was administered to each student in each group.

Group 1 - The instructor used a teacher-made packet to present and give practice in the use of eight noun plural rules, two rules per week, for four weeks, two days per week, thirty minutes per session. Students also were given a list of ten words per week that they were to memorize independently. At the end of each week students were given a weekly test, with space for the ten list words (given orally, in isolation, and then used in the context of a sentence) and the five nonsense and real nouns to be pluralized.

Group 2 - The instructor used a teacher-made packet to present and give practice in the use of eight noun plural rules, two rules per week, for four weeks, two days per week, thirty minutes per session. Students also were given a list of ten words per week that they were to memorize independently. However, this group also received approximately ten minutes of added instruction each of the two teaching days. The first in which the ten multisyllabic list words were accurately divided into syllables by the teacher and the students for study purposes. The students, on the second day, took a pretest to determine which syllables of the list words were inaccurate so that they could study these syllables for the weekly test. At the end of each week students were given the same weekly test as group one, using the same procedures.

Group 3 - These students received a list of ten words per week to be learned independently. At the end of each week, students were given the same weekly test as groups one and two using the same procedures.

Analysis

The pretest and posttest scores were analyzed using a two factor analysis of variance with repeated measures on one factor. The treatment factor represented the three different treatments as described above. These treatments were (1) Rule, (2) Syllabication, and (3) List. The repeated measures factor represented the pretest and posttest occasions.

Chapter IV

Statistical Analysis

Purpose

The purpose of this study was to evaluate and compare the effectiveness of three approaches to the teaching of spelling.

Analysis and Interpretation

The analysis of variance results (Table 1)

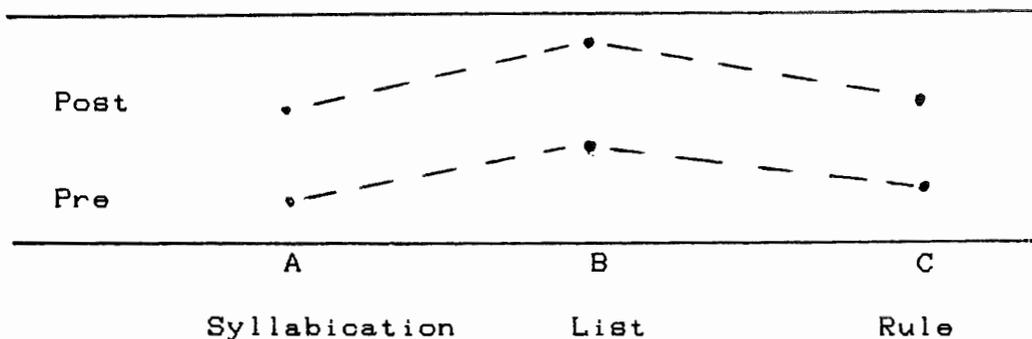
Table 1 Analysis of Variance
Summary Table

<u>Source (Factor)</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>Prob.</u>
Between groups	10933.66	2	5466.83	7.41*	.0019
Sub. w/in grps.	35414.04	48	737.79		
Within grps.	6448.24	1	6448.24	168.44	.0001
A x B	332.77	2	166.39	4.35*	0.018
B x Sub.					
w/in grps.	1837.49	48	38.28		
Totals		54966.21	101		

*p.<.05

indicated a significant interaction between the two factors. The calculated F -ratio was 4.35 which was significant at the $\alpha = 0.05$ level. A further investigation of their interaction effect showed that the pretest and posttest scores followed the same pattern with the posttest scores higher than the pretest scores (Figure 1).

Figure 1 Comparison of Pre and Post Tests Means



Because of the parallel nature of the pretest to posttest differences, the interaction was discounted and the main effects were investigated.

The treatment factor was also significant at the $\alpha = 0.05$ level with a calculated F -ratio of 7.41. This indicated that there were significant differences in the treatment group's means on both the pretest and the posttest. A secondary analysis was used to

determine which pairs of means were significant for the pretest and the posttest (Lindquist, 1956, p. 93).

The differences in pretest means are shown in Table 2. The critical value for the difference between pairs of pretest means was calculated using the formula:

$$d = t\sqrt{\frac{2MSw}{n}}$$

and found to be :

$$d = 2.013\sqrt{\frac{2(737.7924)}{17}}$$

$$d = 18.75$$

Table 2 Differences in Pretest Means

	Syll	List	Rule
Syll	—	*28.65	15.24
List	—	—	13.41
Rule	—	—	—

*p < .05

The only significant difference between pretest means is between Syllabication and List.

The difference in posttest means are shown in Table 3. The critical value for the difference between pairs of posttest means was also calculated using the same formula, resulting in $d = 18.75$.

Table 3 Differences in Posttest Means

	Syll	List	Rule
Syll	—	*21.93	15.06
List	—	—	6.88
Rule	—	—	—

* $p < .05$

The only significant difference between posttest means is between Syllabication and List.

Summary

The statistical evidence indicated that there was a significant difference between pre and post tests for all three treatment groups. There was, also, a significant difference between the Syllabication and List groups for both the pretest and posttest means, but there was no significant difference for either pre or post between Syllabication and Rule or between List and Rule.

Chapter V

Conclusions and Implications

Purpose

The purpose of this study was to evaluate and compare the effectiveness of three approaches to the teaching of spelling.

Conclusions

The statistical results from the analysis of variance indicated that all three treatments were effective in that there was a statistically significant increase in learning between pre and post tests for each group.

The secondary analysis statistically indicated that performance by the List group was significantly higher on both pretest and posttest than the Syllabication group. This might indicate that the List group's knowledge was significantly higher than the Syllabication group's knowledge at the pretest level, before any treatment was applied. Therefore, no real difference in effectiveness may exist between treatments and groups. This is further supported

by the fact that no significant difference was found between any of the other treatment groups (See Table 2 & 3, chapter 4).

Classroom Implications

This study indicates that all three methods could be used as successful approaches in the teaching of spelling. Students were capable of recalling and applying learning six weeks following the end of initial instruction, even at differing levels of ability.

If this information is taken in context with what is currently known about spelling and its relationship to reading and writing, teachers can develop a holistic approach to the teaching of spelling. This is one that not only includes formal instruction in spelling, but also the opportunity to learn through reading and writing.

Research Implications

In future research, a study could be developed that would measure how much learning of spelling students actually apply when writing. Another important study would be how much spelling is actually learned through reading. Both of these studies would help educators develop a successful, well-researched spelling program.

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Appendix A

Pretest/Posttest (keyed)

Name:

- | | |
|----------------|-----------------|
| #1 | #2 |
| 1. government | 1. coupon |
| 2. grammar | 2. argument |
| 3. adjective | 3. arithmetic |
| 4. immediate | 4. lounges |
| 5. interrupt | 5. autumn |
| 6. paragraphs | 6. averages |
| 7. addresses | 7. minimum |
| 8. plural | 8. taxes |
| 9. waltzes | 9. peaches |
| 10. singular | 10. occupation |
| #3 | #4 |
| 1. banana | 1. mosquito |
| 2. mathematics | 2. fragile |
| 3. believe | 3. oxygen |
| 4. environment | 4. freight |
| 5. calendar | 5. persuade |
| 6. experience | 6. sheriffs |
| 7. ministries | 7. marshes |
| 8. adverb | 8. properties |
| 9. cowboys | 9. banjos |
| 10. kisses | 10. democracies |

Give the correct plural forms for the nonsense nouns below:

- | | |
|------------------------|------------------------|
| 1. chulach: chulaches | 8. matlox: matoxes |
| 2. francheo: francheos | 7. readil: readils |
| 3. empty: empties | 8. suriff: suriffs |
| 4. roaf: roaves | 9. loay: loays |
| 5. purless: purlesses | 10. furlash: furlashes |

Give the correct plural forms for the nouns below:

- | | |
|--------------------|-----------------|
| 1. goose: geese | 4. tooth: teeth |
| 2. trash: trash | 5. man: men |
| 3. child: children | 6. ox: oxen |

Appendix B
Weekly tests

Name:

Week #1:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Give the correct plural forms for the nonsense nouns below:

1. chloate
2. morax
3. flpoush
4. usuch
5. plees

Week #2:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Give the correct plural forms for the nonsense nouns below:

1. masach
2. tunnay
3. tuness
4. emprax
5. shuasy

Give the correct plural forms for the nouns below:

1. sheep
2. rubbish
3. ox
4. man
5. child

Appendix C
Weekly Tests

Name:

Week # 3:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Give the correct plural forms for the nonsense nouns below:

1. sublash
2. cafilio
3. sunapp
4. dinorax
5. platito

Give the correct plural forms for the nouns below:

1. tooth
2. alto
3. tomato
4. eskimo
5. mouse

Week #4:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Give the correct plural forms for the nonsense nouns below:

1. creatto
2. umplax
3. huncliff
4. creamach
5. releaf

Give the correct plural forms for the nouns below:

1. goose
2. roof
3. grandchild
4. foot
5. belief