

Psycho-Social Variables of Elementary School Children with Spelling Difficulties in relation to their Academic Achievement

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Abstract Accurate spelling is a complex act that requires cognitive and linguistic knowledge of the phonological, morphological, syntactical and semantic principles of language. Students with disabilities frequently exhibit spelling difficulties related to language learning and are inefficient in cognitive processing. These difficulties often are developmental in nature. The present study is conducted on 222 children with spelling difficulties of five Taluks of Kerala State. Remediation of spelling difficulties in children requires comprehensive assessment. In this article the researchers discuss about the theory related to spelling disabilities, assessment, remediation and psycho-social correlates of spelling difficulties in children. The major findings of the study state that there is a significant positive correlation between psycho-social variables and academic achievement of children with spelling difficulties. The authors also highlighted the need for early intervention and use of various remedial strategies to overcome spelling difficulties in children.

INTRODUCTION

In the world of industrialization and globalization, education has become highly commercial and academic excellence has gained through tough competitions. Academic achievement of students has been a great concern to educationists since time immemorial. Academic achievement has become a significant index in determining a child's future. Both innate potentials and environmental factors play equally important roles in academic achievement. It is imperative to look into the interplay of both these factors. Innate potentials,

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in terms of academic achievement, are exhibited mainly through the intellectual functions, and of course, there is a positive correlation between intellectual functions and academic achievement. However, there are certain confounding factors which mask the effect of this innate potential and in turn, hamper the child's academic achievement in the course of his studentship. Specifically, this group of students are those who have more inner crises. Various psycho-social factors-for example, achievement motivation, self concept, social adjustment, personal adjustment, home environment etc.- affect the academic achievement of students with learning difficulties. Academic achievement is an index as well as an affair that has its roots from nervous system to neighbourhood, and only a thorough and comprehensive assessment would be able to point out the detrimental factors that are responsible for the dilemma of academic low achievement. Hence, all possible care has been taken to be sensitive to investigate all the needed information, so as to give a consolation to the inner cry of many, who are associated with this childhood disability.

Spelling is a far more complex activity than reading. It involves recalling words from memory, using vocal and motor skills. In order to spell proficiently one must be able to spell words phonetically. It is important to maintain a visual memory of the word for later use and correctly combine root words with prefixes and suffixes. It is not surprisingly then, that the area of spelling is the most frequently cited problem for those with a learning disability.

Children with learning difficulties in reading usually have problem in spelling as well. Spelling can be especially difficult for these students, for several reasons. The reasons are poor phonemic awareness and poor knowledge of letter- sound relationships. Further more, spelling is affected by independent reading and exposure to text; avid readers see more words in print and have more opportunities to learn spelling of specific words, Because individual with reading disability are rarely avid readers, lack of exposure to printed words may adversely influence their spelling. English spelling is complex, drawing upon different kinds of knowledge. Effective teaching of this knowledge is especially crucial for children with reading difficulty.

Spelling difficulties can be enduring in individuals with reading difficulties, some times even after reading has been successfully remediated. Addressing spelling difficulties is important, because poor spelling can hamper writing and can convey a negative impression even when the content of writing is excellent.

KNOWLEDGE REQUIRED FOR SPELLING IN ENGLISH

The most basic kind of knowledge required for good English spelling involves phonics knowledge or knowledge of common letter-sound relationships. For

example, children need to learn that the sound they hear at the beginning of the spoken word ‘bag’ is spelled with the letter b, the medial sound is spelled with the letter a and final sound is spelled with the letter g. Unfortunately, however, basic phonic knowledge is necessary, but often not sufficient for accurate spelling of many words. This is true not only for phonetically irregular words such as of or what; but for many regular words as well. For instance, phonics knowledge serves as an essential base for spelling a word such as shirt, but the only way to know that the word is not spelled with ur (shurt) or er (shert) is to be familiar with the printed word. Morphological knowledge about root words and relationship among words is also important especially as children progress to more advanced levels of reading and spelling.

DEVELOPMENTAL STAGES OF LEARNING TO SPELL

Children go through several distinct stages of spelling development, following a general progression of spelling knowledge. The rate of progression differs among children with different spelling abilities, but all children pass through the stages in order. Moreover the spelling errors that children make reflect their current developmental stage. There are overlaps in the ages at which children pass through, each developmental stages of spelling. The stages and their accompanying ages and characteristics are as follows.

Stage 1: Developing Prephonetic writing (Age 1-7) – Children scribble, identify pictures, draw, imitate writing and learn to make letters.

Stage 2: Using letter names and beginning phonic strategies (Age 5-9)–Children attempt to use phoneme representations but exhibit limited knowledge. They use invented spelling by letter name (e.g. H I KT for hiked, L RN for learn). Children may be able to spell some sight words correctly.

Stage 3: Using written word Patterns (Age 6-12) - Spelling attempts are readable, pronounceable and recognizable and they approximate conventional spelling, even though they are not precise (e.g., Offis for office or alavater for elevator). The child’s invented spelling follows rules of short vowel and long vowel markers.

Stage 4: Using Syllable junctures and multisyllabic words (Age 8-18)–children display errors in multisyllabic words. Invented spelling errors occur at syllable juncture (e.g., useage for usage). Multisyllabic sight words may or may not be transferred to spelling performance.

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Stage 5: Developing a Mature spelling perspective (Age 10-Adult) – At this stage previously acceptable invented spellings are now viewed as errors. Many individuals continue to have great difficulty with spelling, even if they follow the rules. Because of the many exceptions in English, individuals should learn to rely on backup sources, such as dictionaries, computer spelling checks and electronic spellers.

PROBLEMS RELATED TO SPELLING

Spelling requires many different abilities. For example, a child who lacks phonological awareness will not recognize that there are phonemes or sounds within spoken words and will have difficulty with the spelling-to-sound linkage that are necessary in spelling (Torgesen, 1998). Some children are initially unable to read a spelling word. Other children do not know how to apply phonics and structural analysis to spell a word. Still others are poor at visualizing the appearance of the word. Some children have poor motor facility and physical difficulty in writing words.

To spell a word correctly, an individual must not only have stored the word in memory but must also be able to completely retrieve it from memory without the help from visual clues. Poor spellers who cannot remember or visualize the letters and the order of the letters in words benefit from activities to help strengthen and reinforce the visual memory of the spelling words.

Some poor spellers have difficulty with auditory memory and cannot hold the sounds or syllables in their minds. These students need instruction that helps them recognize the sounds of words and build phonological skills.

Motor memory is also a factor in spelling because the spellers must remember how the word 'felt' or recall the motor movement when the word was previously written. Students with motor memory problems need additional practice with writing the spelling words.

CHARACTERISTICS OF CHILDREN WITH SPELLING DIFFICULTIES

The following are some of the characteristics of Children with Spelling Difficulties.

- Poor standards of written work compared with oral ability.
- Messy work, many crossings and words tried several times.
- Persistent confusion with letters when look alike particularly b/d, p/q, n/u.
- Wrong choice of letters due to lack of auditory discrimination, particularly between the vowel sounds a, o, v, i, e, between t, d, p, b, m, n.

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- Confusion between letter names, sounds e.g. n d for end, n e for any.
 - Indiscriminate use of capital letters usually because the child feels more secure with capital form, eg. ra BBit.
 - Confusion between similar sound words e.g; accept and except.
 - Letters, syllables, words omitted, inserted or wrong order.
 - a word spelt several different ways in one piece of writing.
 - crossing *l* but failing to cross *t*. e.g.; tillte or little.
 - badly set out written work, inability to stay close to the margin.
 - losing the point of the story book written.
 - lack of or indiscriminate use of punctuation.

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The psycho-social factors such as - achievement motivation, self concept, personal adjustment, social adjustment and home environment affect the academic achievement of children with spelling difficulties. The present study is an attempt to find out the psycho-social aspect of children with spelling difficulties and the nature and extent of it's relationship with their academic achievement.

OBJECTIVES OF THE STUDY

1. To develop a diagnostic test to identify the children with spelling difficulties.
2. To find out the significant differences, if any, in the spelling difficulties of children due to variation in their Gender, Community, Father's educational qualification, Mother's educational qualification, Occupation of father, Occupation of mother, Number of children in the family, Exposure to different media, Locale of the school, Type of management of school and Medium of instruction.
3. To find out the level of Achievement motivation, Self concept, Personal adjustment, Social adjustment and Home environment of children with spelling difficulties.
4. To find out the relationship between Achievement motivation and Academic achievement, Self concept and Academic achievement, Personal adjustment and Academic achievement, Social adjustment and Academic achievement, and Home environment and Academic achievement of children with. spelling difficulties.

HYPOTHESES OF THE STUDY

1. There exists a significant difference in the spelling difficulties of children due to variation in their Gender, Community, Father's educational qualification, Mother's educational qualification, Occupation of father,

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Occupation of mother, Number of children in the family, Exposure to different media, Locale of the school, Type of management of school and Medium of instruction.

2. There exists a significant relationship between Achievement motivation and Academic achievement, Self concept and Academic achievement, Personal adjustment and Academic achievement, Social adjustment and Academic achievement, and Home environment and Academic achievement of children with spelling difficulties.

METHODOLOGY USED IN THE STUDY

Survey method is used for the study. For the purpose of the study, the investigators developed Spelling Difficulties Diagnostic Test in order to identify the children with spelling difficulties. The different components of Spelling Difficulties Diagnostic Test are; Circle the Correct Spelling (visual verbal association), Word Recognition (visual discrimination), Plurals and change the Gender (visual memory motor co-ordination), Track the Words (visual sequence), Prefix and Suffix to the Roots (perceptual discrimination), Spell and Match the Words (auditory perception), Finding the Words by Clues (visual perception) Dictation (auditory visual memory).

The final draft of Spelling Difficulties Diagnostic Test consists of 50 objective type questions. The tools used for the study to find out the personality variables are - Achievement Motivation Scale, Home Environment Inventory, Self Concept Scale, Personal Adjustment Inventory for Upper Primary School Children and Social Adjustment Inventory for Upper Primary School Children.

SAMPLE OF THE STUDY

The study was confined to five Taluks of Kottayam district of Kerala State. The Taluks which come under Kottayam district are Kottayam, Meenachil, Vaikom, Changanacherry and Kanjirappally. From 203 upper primary schools present in Kottayam district, the investigator selected 22 schools which comprise 7 Government schools, 8 Aided schools and 7 Unaided schools by using simple random sampling technique. There were 2312 students studying in the selected schools. The spelling difficulties children were identified on the basis of three phases. They are (i) identifying phase, (ii) scientific confirmatory phase, and (iii) counter check phase.

For the first phase, the teachers' observation on students' curricular activities was given due consideration. In addition to these, the quarterly and half yearly examination results were analysed by the investigator.

In the second phase, the identified learning difficulty children were subjected to scientific confirmatory test. For this purpose, Raven's Coloured Progressive Matrices (1986) is used. The students with 5th, 25th, 25th to 75th percentile points in RPM test along with observation of teachers and poor performance in English in the terminal examination were considered as students with spelling difficulties.

Lastly, the spelling difficulty children were counter-checked on the basis of scores in the Spelling Difficulties Diagnostic Test. Thus, 222 children with spelling difficulties were identified. The identified children with learning difficulties were subjected to administered the intend tools of the study and the data collected served for analysis. The data has been analysed and interpreted with appropriate statistical techniques such as number and percentages, mean, SD, t/F test and correlations. The results are presented in descriptive and differential analysis and interpreted accordingly.

Spelling difficulties may be due to problems with phonology (the sounds that make up words), weakness of visual word form (visual memory for words) or general weakness in working memory. 220 children have the difficulty in circling the correct spelling due to deficit in visual verbal association. Their visual memory is poor; so they cannot recall the word. Proficient spellers make use of visual information when writing words. The teacher should make the children proficient with word families by using charts, demonstrate correct spelling and wrong spelling using flash cards and picture cards.

RESULTS AND DISCUSSION

Table 1 : Number and Percentage of Children in Different Components of Spelling Difficulty

Components of Spelling Difficulty	No. of children facing the difficulty	Percentage of children facing the difficulty
Circle the correct spelling (Visual verbal association)	220	99%
Word recognition (Visual discrimination)	173	77.92%
Plurals and change the gender (Visual memory motor co-ordination)	184	82.14%
Track the words (Visual sequence)	193	86.16%
Prefix and suffix to the roots (Perceptual discrimination)	200	90.09%
Spell and match the words (Auditory perception)	167	74.55%
Finding words with clues (Visual perception)	148	66.07%
Dictation (Auditory visual memory)	141	62.95%

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Out of 222 children with spelling difficulties, 173 commit errors in visual discrimination. They cannot recognize the correct word from a group of words. This difficulty can be overcome by giving training which is structured initially with pictures then gradually with letters, diagrams and words. There are 184 children who face difficulty in writing plurals and changing the gender. Visual memory motor co-ordination is essential for the above components. For these children, the visual stimulus does not correspond to the feedback from the motor area. By the graded activities the children's visual image could be made to match the motor feedback, so that, at first the eye follows the hand and later the hand follows the eye.

Track the words is a task which is related to visual sequence. There are 193 children who face with this kind of difficulty. Exercises like cross the words and Jig-saw puzzles help to strengthen the visual sequence of disjoined picture card, and word puzzle box helps to improve the ability of visual sequence. Tasks related to prefix and suffix evaluates the perceptual discrimination of students. 200 spelling disabled children experience difficulty in perceptual discrimination. The children should be given practice in adding prefix and suffix to the root words in the form of a game.

Auditory perception skill helps the child to spell the words correctly. 167 children lack this ability. The programme designed for quickening auditory perception should consist of listening to recordings, naming objects or pictures of the object that lead to describe a picture in full, repeating sentences accurately, practicing telephone conversations, practice in giving appropriate answer to questions, miming actions, describing verbally, dividing syllables, giving opposites of words, changing words from singular to plural, classifying things based on colour texture, shape and use and classifying objects, pictures and words according to their initial, ending or middle sounds.

Visual perception is an important skill which gives accuracy in spelling. 148 children out of 222 children cannot visualize even though the clues are given. Children with visual perception disorder have difficulty in recognizing, organizing, interpreting or remembering visual images. Children with visual perception problems have poor sense of direction, problems related to judging speed and distance and difficulty in planning and organisation. The teacher should build up a memory store of visual images of word pattern using multimedia software kit, VCR, computer, picture cards and chart with words.

Auditory visual memory is an inevitable component for grapheme – phoneme correspondence which is lacking in 141 children. Auditory visual memory involves being able to take information that is presented orally and visually. It involves skill of attending, listening, processing, storing and

recalling. Extensive practice should be given in activities related to spelling rules and irregular words. Words building games are of great help in developing auditory visual memory in children.

In table-2, the mean and SD score of the children with spelling difficulties and calculated t-values are based on their personal variables are presented. It is observed that the obtained t-value (3.18) for the variable gender is significant at 0.01 level. It means, boys and girls significantly differ in the spelling ability. Further, the boys experience more spelling difficulties than girls. For the variable 'Community', the obtained F-value (7.36) is significant at 0.01 level. The SC/ST students experience more spelling difficulties than FC and BC students. Likewise, the variable 'Father's educational qualification', the obtained F value (16.73) is significant at 0.01 level. The children of college educated fathers experience less spelling difficulties than their counterparts with fathers having primary and high school educational qualification. The obtained F-value (5.94) for mother's educational qualification is significant at 0.01 level. Further, it is noticed that children of college educated mothers experience less spelling difficulties than children with mothers having primary and high school educational qualification.

Father's occupation has significant bearing on the spelling difficulty of children, as the calculated F-value (25.46) is significant at 0.01 level. Further, the mean values indicate that children of employed parents experience less spelling difficulties than their counterparts. Similar trend is observed for the variable 'Mother's occupation', where-in, the F-value (20.81) is significant at 0.01 level. Contrary to this, the obtained t-value (1.20) with respect to the variable 'the number of children in the family' has not significantly influenced the spelling difficulties of children. The variable 'Exposure to different media' has significant influence on the spelling difficulties of children, as the obtained F-value (7.04) is significant at 0.01 level. The children with exposure to radio or TV alone are experiencing more spelling difficulties than those with exposure to radio, TV and magazine together.

From the obtained t-value (23.78) for the variable 'locale of the school', is significant at 0.01 level, indicating that it has significant bearing on the spelling difficulties of children. The children from the rural school experience have more spelling difficulties than their counterparts from the urban schools. For the variable 'type of management of school', the obtained F-value (6.42) is significant at 0.01 level. Government school children are experiencing more spelling difficulties than their counterparts studying in aided and unaided schools. From the calculated t-value (0.07), it is inferred that the variable 'medium of instruction' is not significantly influenced the spelling difficulties of children.

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Table 2 : Mean and SD Scores of Children with Spelling Difficulties and calculated F/t values based on the Personal Variables.

Variable	Groups	N	Mean	SD	Calculated F/t value
Gender	Boys	139	9.10	2.86	3.18**
	Girls	83	10.44	3.28	
Community	FC	122	10.61	3.14	7.36**
	BC	65	9.42	3.13	
	SC/ST	35	3.54	2.92	
Father's Educational Qualification	Primary	49	8.29	3.20	16.73**
	High School	108	9.74	3.18	
	College	65	11.51	2.42	
Mother's Educational Qualification	Primary	50	8.6	3.55	5.94**
	High School	120	10.25	2.55	
	College	52	10.36	3.15	
Father's Occupation	Agriculture	58	7.33	2.03	25.46**
	Business	86	8.76	2.39	
	Employed	78	13.27	1.37	
Mother's Occupation	Unemployed	148	9.35	2.93	20.81**
	Self-employed	34	9.29	3.09	
Number of Children in the Family	Employed	40	12.65	2.82	1.20@
	1 to 2 children	145	10.12	3.12	
	3 or more children	77	9.58	3.31	
Exposure to Different Media	Radio	53	8.96	2.97	7.04**
	TV	103	9.73	3.29	
Locale of the School	Radio, TV and Magazine	66	11.05	2.89	23.78**
	Urban	96	13.03	1.56	
	Rural	126	7.58	1.78	
Type of Management	Government	62	7.02	1.51	6.42**
	Aided	77	10.4	3.23	
Medium of Instruction	Unaided	83	11.69	2.51	0.07@
	English	76	9.95	3.21	
	Malayalam	146	9.92	3.17	

** Significant at 0.01 level; * Significant at 0.05 level;

@ Not significant at 0.05 level

Table 3 : Number and percentage of children having spelling difficulties with their levels of Achievement motivation, Self concept, Personal adjustment, Social adjustment and Home environment

Variable	Low		Moderate		High	
	No.	%	No.	%	No.	%
Achievement motivation	39	17.6	152	68.4	31	14
Self concept	23	10.4	171	77	28	12.6
Personal adjustment	43	19.4	166	74.8	13	5.9
Social adjustment	51	23.0	139	62.6	32	14.4
Home environment	33	14.9	165	74.3	24	10.8

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In table-3, the number and percentage of children with levels of achievement motivation, self-concept, personal adjustment, social adjustment and home environment are presented. Table-3 demonstrates that under the category of children with spelling difficulties, 31 children (14%) fall in low achievement motivation, 152 children (68.4%) fall under moderate achievement motivation and 39 children (17.6%) are with high achievement motivation. For the personality variable Self concept, 28 children (12.6%) are with low self concept, 171 children (77%) come under the category of moderate self concept and 23 children have high self concept. In personal adjustment of children with spelling difficulties, 43 children (19.4%) have low level of personal adjustment and only 13 children (5.9%) have high level of personal adjustment. A majority of children i.e. 166 children (74.8%) are coming under moderate level of personal adjustment.

For the variable social adjustment, it is observed that, among the children with spelling difficulties only 32 children (14.4%) possess high level of social adjustment. 51 children (23.%) have low level of social adjustment. Majority of the children i.e. 139 children (62.6%) got moderate level of social adjustment. Under the variable home environment, only 24 children (10.8%) have highly favourable home environment. 33 children (14.9%) with less favourable home environment, whereas, 165 children (74.3%) were with moderately favourable home environment.

To know the relationship between the psycho-social variables of the study and the academic achievement of children with spelling difficulties, Karl Pearson's Product Moment Correlation have been calculated and same the presented in table-4. From table-4, it is clear that the psychosocial variable achievement motivation, self concept, personal adjustment, social adjustment and home environment have a significant positive correlation with academic achievement in English, Mathematics and Other subject. The correlation

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Table 4 : Correlation between Each of the Psycho-social Variable and Academic Achievement of Children with Spelling Difficulties

Variable	Subjects		
	English	Mathematics	Other Subjects put together
	r-value	r-value	r-value
Achievement motivation and Academic achievement	0.69**	0.67**	0.98**
Self concept and Academic achievement	0.46**	0.41**	0.35**
Personal adjustment and Academic achievement	0.63**	0.60**	0.87**
Social adjustment and Academic achievement	0.66**	0.62**	0.84**
Home environment and Academic achievement	0.59**	0.53**	0.70**

**Significant at 0.01 level

coefficient is significant at 0.01 level. It means, higher the achievement motivation, higher will be academic achievement.

REMEDIAL STRATEGIES TO OVERCOME SPELLING DIFFICULTIES IN CHILDREN.

Reddy et. all (2011) highlighted the following strategies to overcome spelling difficulties in children. They are:

i) Multisensory Approach

This approach includes the modalities of vision, touch, hearing and movement. It includes the following steps.

- The teacher says and writes a word, while the student listens.
- The child copies the word while saying it. The emphasis is on the pronunciation of the word.
- Then the word is written from the memory, and if it is incorrect the child is asked to repeat it.
- Later the child learns to write and say the word as the teacher is writing and saying it.

a) Cover-write Method:

This is another multisensory method which has the following steps.

- The child looks at the word and says it.
- The child then writes the word by looking at it, may be twice or thrice.
- The child covers the word and writes it from memory.
- He / she then checks the spelling himself / herself.

b) Imitation Method:

This method is meant for students with severe spelling problems. In this method, the steps are as follows;

- The teacher / parent first spells the word and provide the written model of the word.
- The child imitates the model by spelling the word and writing it.
- The child receives immediate positive feed back (praise) if the response is correct.
- If the response is incorrect, the child is retrained.

c) Repetition-Drill Method:

In this method -

- The child is first introduced to one syllable words.
- Then the child is exposed to more than one syllable words which are learnt syllable by syllable.
- The teacher / parent then says a word and the child then says the letters in the word.
- The child writes the word and reads it.

ii) Other Strategies

- a) ***Provide systematic phonics instruction that incorporates teaching of phonemic awareness.*** Although this kind of instruction alone will not be enough to make students flawless spellers, phonemic awareness and phonics knowledge form an essential base for accurate spelling in English.
- b) ***Teach common irregular words from the earliest stages of spelling.*** It is virtually impossible to generate a complete sentence without common irregular words such as of what, and were. Therefore, it is important to begin teaching these kinds of words early, as one part of a more comprehensive spelling program. Multisensory techniques involving repeated tracing and saying of words can be especially helpful for introducing irregular words.
- c) ***Teach useful spelling rules.*** Although many English words do not conform to consistent rules, some generalizations are very helpful to students, such as rules for adding endings to words with a silent e (make, making) or to closed syllables that end in a single consonant (sit, sitting).

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- d) ***Teach spelling of important grade-appropriate words.*** Because many English words cannot be spelled solely through the use of rules or phonics knowledge, spelling instruction also should include studying a corpus of important words needed for accurate spelling at each grade level.
- e) ***Encourage independent reading to increase exposure to printed words.*** Independent reading cannot substitute for direct spelling instruction, but it can help to promote spelling knowledge and of course, it is valuable for many other reasons as well.
- f) ***Teach older children how to use a computer spell-checker.*** Like independent reading, spell-checkers are not a substitute for explicit spelling instruction from a knowledgeable teacher. Also, children need some phonics knowledge in order to use spell-checkers effectively. Nevertheless, spell-checkers can be enormously helpful to struggling spellers and writers, especially in the later grades when the volume of writing increases greatly.

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