

Remediation Strategies for Students with Orthographic Processing Difficulties

The ability to read a word accurately and fluently depends on our knowledge of phoneme-grapheme correspondences and our ability to blend them together with ease. In order to spell a word we apply this process in reverse, segmenting the sounds in a word and mapping these sounds using the appropriate grapheme. English graphemes are made up of one, two, three or even four letters and each grapheme represents one phoneme (e.g. 'a', 'ay', 'igh' and 'ough'). Our capacity to read and spell effortlessly and fluently requires additional aspects of orthographic knowledge. The orthography of a language is the system of writing that has been specifically selected for that language and includes knowledge of: alphabet letters and letter formation; phoneme-grapheme correspondences; alternative graphemic patterns; syntax; punctuation; morphology; and, etymology.

English Orthography is complex and students need to acquire knowledge about the graphemic patterns and constraints that are unique to English. For example, some letter patterns are only used at the beginning, middle or end of a word, and some letters are never used in sequence with other letters. English orthography is also heavily influenced by the word's language of origin. Students who fail to consolidate their orthographic knowledge are viewed as having orthographic processing difficulties. These students often fail to become fluent readers and writers and make multiple spelling errors.

It is important that any literacy intervention undertaken focuses on the development of both reading and spelling skills.

1. Alphabetic knowledge

Many students with orthographic processing weaknesses struggle to recognise and/or correctly form alphabet letters and letter sequences, particularly in the early stages of reading and spelling development. Students will require explicit teaching of correct letter formation and handwriting practice along with strategies to manage letter and word reversals.

- Practice letter formation on a piece of paper (or whiteboard etc) that is divided into 4 squares. Follow the multisensory routine below:

| | |
|---|--|
| Trace the letter | Copy the letter |
| Cover the top half and write the letter from memory | Write the letter with your eyes closed |

- 1) Trace
- 2) Copy
- 3) Write from memory
- 4) Write with eyes closed

- Use paper with dotted thirds or halves, larger line spacing, or coloured cue lines to encourage consistent letter height. Paper with dotted thirds and various line spacings can be purchased or can be created on the computer.
- Tactile paper with raised lines may also be useful and can be purchased through Occupational Therapy supply stores.

2. Orthographic Awareness

Students with weak orthographic processing rely very heavily on sounding out common words that should be stored in long term memory, leading to a choppy and laborious style of decoding. These students are also more likely to have difficulty applying knowledge of root words in order to decode a variation of a word and confuse simple words like 'on' and 'to' when reading. In addition, poor orthographic processing will frequently result in both a high rate of spelling errors and poor written expression. Students find it difficult to remember the correct spelling pattern for a particular word and don't seem to benefit from the editing tool, "Does it look right?" Rather, they demonstrate the tendency to over-rely on phonological information, writing words like 'rough' as 'ruff' and 'night' as 'nite'.

Remediation for orthographic awareness difficulties should include the following:

- A structured approach to spelling with an emphasis on conventional spelling rules, common letter sequences and orthographic rules.
- Explicitly teaching syllable division patterns and rules for contractions, possessives, plurals and abbreviations.
- Provide extra practice reading/spelling high frequency irregular words (e.g. once, said) from word lists emphasising (highlighting in some way) the irregular elements. (e.g. the 'ai' grapheme in said).
- Utilise word sort activities that target contrasting and related spelling rules and patterns.
- Select spelling lists that are linked by spelling patterns to highlight regular spelling patterns.

3. Morphology and Syntax

Morphemic awareness refers to the ability to consider morphemes (the smallest units of meaning in words), their specific spellings and the semantic connections between a root or base word and its corresponding inflectional and derivational forms. Children who struggle with morphological awareness may experience difficulties recognising morphological units, spelling affixes, have difficulties with the understanding of spelling rules when adding suffixes (for example the double consonant rule) and have difficulties recognising the relationship between a root word and extensions of that root word (e.g. deduct, reduction, productive, etc).

Remediation strategies for developing morphemic awareness and knowledge of syntax should include the following:

- Teach word study with an emphasis on morphological awareness (base words, roots, prefixes, and suffixes).
- Provide word building activities with prefixes, roots and suffixes.
- Teach derivative rules for spelling when adding a suffix and when spelling words with a common root or base word.
- Build awareness of word meaning and differences for homophones.

4. Building Mental Graphemic Representations

Orthographic knowledge generally involves two elements: Mental Graphemic Representations (MGRs), which are the stored mental representations of specific written words or word parts and orthographic pattern knowledge, which is the understanding of the rules or patterns that determine letter-sound correspondences, spelling rules or patterns (e.g. long vowel patterns) and letter positional rules (“duck” vs. “cat”). Knowledge of these orthographic patterns and the development of mental graphemic representations is an important step in becoming a fluent reader and speller.

Intervention for building mental graphemic representations should include the following:

- Phoneme-grapheme mapping using sound boxes, focusing on one specific pattern at a time.
- Word sorts focusing on specific orthographic patterns.
- Using spelling lists that are pattern-based rather than theme-based to reinforce the consistent spelling of graphemic patterns.
- Practice using these patterns at the word level, phrase level and building to the sentence level.
- Repeated reading of single words to develop automatic recognition of graphemic patterns.
- Repeated reading of connected text which focuses on the specific graphemic pattern.

5. Developing Fluency

Students who experience difficulties in orthographic processing often experience difficulties in reading fluency as they are not able to rapidly and automatically recognise words, or units within words, and as such are required to decode unknown words. Delays in reading fluency often lead to reading comprehension difficulties.

Strategies for developing fluency should consider and/or include the following:

- Explicit work on speed and fluency needs to be preceded by a focus on accuracy.
- Repeated timed reading of single word lists to develop automatic recognition of graphemic patterns.
- Practice and monitor progress of oral reading with repeated readings of continuous text.
- Ensure daily reading of text that is at the student’s level.