What is the story behind words with <igh>, <ight> and <ite>?

Pete Bowers, Nov 19, 2021

A while ago I came across a post in a Facebook group centred on the popular "Science of Reading" asking about spellings with letter sequences of <igh>, <ight> and <ite>.[1]

I am asked about words with these letter sequences all the time in my work with educators from a "structured word inquiry" (SWI) framework. This is the phrase I used to describe the instruction in my vocabulary intervention with Grade 4 and 5 students a decade ago (Bowers & Kirby, 2010). The basic premise of SWI is to use scientific inquiry of how our written word works as a driver of literacy instruction.

I began to comment on that post, but it became clear this topic was too a rich for a short response. It offers an opportunity to unpack so many key orthographic concepts educators can use to inform their instruction. Instead of posting a short comment on a string few would see, I decided to use the **quest**ion to address some key facts about how English spelling works that are rarely featured in literacy instruction. It is also an opportunity to illustrate some ways the scientific inquiry of orthography in SWI addresses such questions.

With that background, let's take a look at the question that grabbed my attention. Since I'm posting this outside of the original Facebook group, I've changed the names.

The initial post was from Betty who wrote:

> I am working with -ight words.   What is the rule to use -igh for long i instead of -ite. I looked through LOE book but cannot find ruse or reasoning behind it.   Thanks.

Kathy responded…

> I'm not sure that there is a rule about this. What I do know is that the IGH spelling is a remnant of old German and Old English spelling. According to "The ABCs and All Their Tricks," 88 words have IGH, while almost 400 words have the long i sound spelled i_e, so that spelling is much more common.

Kelly added…

> I wrote night for my students the other day. They thought I was kidding. Why is it not nite? I said old English.

Here is my response…

Betty, your question about words with these letter sequences is so important. You identified a common part of our spelling system that you do not yet understand, and shared a couple of hypotheses you investigated, but couldn't resolve.

Kathy responded to your question with key information. You were wondering about words with the letter sequences <ight>, <igh> and <ite>. She highlighted a point that is necessary part of making sense of what was confusing you. The <igh> is just a common trigraph for the /aɪ/ phoneme ("long i"). She, and then Kelly, also noted that when we find that trigraph for /aɪ/, we can expect the word to be of Old English origin.

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[1] I use the linguistic convention of angle brackets < > to signal orthographic information. When you see letters in angle brackets, I recommend you name the letters in your mind instead of trying to pronounce them. You will also see that I use the linguistic convention of slash brackets for phonological information and IPA symbols. I know these symbols may not be familiar, so I often pair the IPA notation with educational terms like 'long i' for clarity.

I will come back to the observation about the etymology of this trigraph. But first, we should be clear about the different phonological structures invoked by your question.

When we want to understand associations between spellings and pronunciations, we need to be clear about the phonological structures we are studying, and the words in which they are found. Consider the words "night" and "kite" that include the letter sequences and pronunciation you were inquiring about. In your question you referenced both <igh> and <ight>. One could discuss the <ight> letter sequence as spelling the rime in the word "night." But we will get more clarity if we study the grapheme-phoneme correspondences in these words.

Phonemes are the building blocks of phonology. The phoneme can be understood as the minimal distinctive unit of pronunciation that can affect meaning in a language. The grapheme is the minimal distinctive unit of writing that represents a phoneme. One key fact about graphemes is that they *only occur within morphemes*. For example, we can see that the letter sequence <ea> is often, but not always, a digraph.

Compare the spellings <reach> and <react>. The word "reach" is a base with the <ea> digraph for the "long e" (the phoneme /iː/ in IPA). By contrast, the word "react" is complex with the structure <re + act>. Showing the morphological structure in this word by separating the morphemes with a plus sign makes it clear this word cannot not have a digraph <ea>. Letters in different morphemes cannot be in the same grapheme!

Notice how teaching the morphology of these words — and the relationship between "react" and morphologically related words like "acting" or "actor" — clarifies grapheme-phoneme correspondences. If we don't notice this morphology, we could misread the spelling <react> as if it were the word "reeked"! (See this lesson on the morphological family of <act> which explains the grapheme-phoneme correspondence of the <t> in the word "action," and why this word cannot be spelled with an <sh>.)

Given the importance of providing the best possible instruction about grapheme-phoneme correspondences, I am explicit about this morphological constraint on graphemes in my work with students and teachers. (See this video for more on that topic.)

For your question, I simply picked two example words that are bases. This way we can be confident these letter sequences do not cross a morphemic boundary. Each of these words is comprised of three phonemes. They differ in the initial phoneme (/n/ in "night" vs /k/ in "kite"). But they each have the same "long i" (the phoneme /aɪ/) and the final phoneme /t/. We can now add precision to your question that I could pose like this.

> *The words "night" and "kite" have the same /aɪ/ phoneme. In the first, it is written with an <igh> trigraph. In the second, it is written with an <i> grapheme with its pronunciation marked by the final non-syllabic <e> (single, silent <e> if you prefer).*
>
> *How can I know which grapheme a word needs for this phoneme if there is more than one way to spell it?*

Here we see the key problem of trying to understand grapheme-phoneme correspondences without reference to morphology and etymology. The majority of English graphemes can represent a variety of phonemes, and the majority of English phonemes can be represented by multiple graphemes. If we don't triangulate our study of grapheme-phoneme correspondences with

morphological and etymological influences, we reduce access to understanding. We burden ourselves and our students with having to memorize abstract associations between "sounds and symbols" with no understanding to fix that memory in our mind.

Unfortunately, I have yet to see a single published definition of phonics that makes any reference to the role of morphology or etymology in grapheme choice. This marks a central difference between phonics and structured word inquiry — the way these approaches teach grapheme-phoneme correspondences. Both rightly emphasize explicit instruction about the available graphemes for English phonemes. But in structured word inquiry, we *also* help teachers and students understand how you can know which grapheme is the best fit for a given word by drawing on relevant morphological and etymological information wherever we can.

I suspect many readers of this FB group are familiar with major theories of reading like Ehri's (2005, 2014) "Orthographic Mapping" and Perfetti's (2007) "Lexical Quality Hypothesis." These theories emphasize the importance of binding mental representations of pronunciation, spelling and meaning to automatize access to lexical information during reading and writing. As Ehri (2014) wrote, "Orthographic mapping (OM) involves the formation of letter-sound connections to bond the spellings, pronunciations, and meanings of specific words in memory" (Ehri, 2014, p. 5).

Structured word inquiry instruction builds on this same theory of reading. However, if we ignore the roles that morphology and etymology play in grapheme choice, we minimize the opportunity for learners to bind these abstract letter sequences and pronunciations to *meaning.*[2]

This does not mean that every time we study a grapheme-phoneme correspondence we are obligated to get into the morphology and etymology in detail. However, teachers should know about these influences on grapheme choice so that they can draw on them when students encounter spellings they can't explain otherwise. Let's see how etymology might help us here.

Kathy noted that <igh> is a sign of Old English. Some may wonder how that information could possibly help reading or spelling words with this letter sequence. If this were the extent of the etymological information we taught, I would agree. But that's kind of like asking someone to get excited about a jigsaw puzzle by giving them a single puzzle piece.

Imagine we are given one puzzle piece, but no signal that this piece came from a box in the cupboard with an image of the what the finished puzzle looks like and the pieces needed to create that picture. We are presented with one fact which is part of a complex, ordered system - but no sense of how that fact fits into that larger picture. This would not grab my attention, nor would it motivate me to spend any time trying to understand what an isolated piece of information is for.

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[2] This notion of *binding* pronunciations, spellings and meanings of words is a central driver of the theory of morphology as a 'binding agent' that I put forward with John Kirby (Kirby & Bowers, 2017). Our theory builds explicitly on Perfetti's (2007) lexical quality hypothesis. Perfetti highlights a feature of 'lexical quality' that he calls a 'constituent binding' feature. This feature is not an independent lexical feature, but the extent to which the spellings, pronunciations and meanings are bound together. Higher quality representations of any individual lexical feature increases automatic access to lexical information during reading. In addition, the extent to which those features are *bound together* in the learner's mind is another way to build richer lexical quality, and thus automated access to words when reading - what orthographic mapping calls "sight words."

But consider another option. We already have one etymological puzzle piece connected to the <igh> trigraph:

"The <igh> spelling is a sign of Old English."

What if we provided more context to see how this piece fits into the orthographic picture?

We might point out that the word "night" has shifted in pronunciation and spelling since Old English. If we search on a reference like Etymonline, we see that our present-day English word spelled <night> derived from an Old English word spelled <niht>. But in Old English, that <h> was pronounced with a kind throat-clearing sound, like the Scottish pronunciation of <ch> in "loch" or the German pronunciation in "Bach" (see here). It turns out we can still perceive a vestige of that pronunciation in present day German. Check out how Germans pronounce their word for "night" (spelled <nacht>) which comes from the same Old English root *niht* at this link. If you mimic this pronunciation, and then pronounce the /g/ of "get," you'll notice the main action is in a similar place with the back of your tongue. Hmmm. That's interesting.

Present-day spellings hold clues to a word's origins. By diving into the etymology of the spellings and meanings of words we are curious about, we can find stories that help us make sense of spellings that would otherwise seem random. A cool part of this story is noticing that an Old English word *niht* had a kind of 'throat clearing sound' that was represented by the Old English grapheme <h> at the time. The pronunciation and spelling and of that word took one path on its way to present day German and another on its way to present day English. The German path retained more of the original pronunciation. English dropped that

"throat clearing" pronunciation but we still see a vestige of the original pronunciation in English spelling.

Keep in mind that we do not need to do this kind of deep etymological dive into every grapheme. But the <igh> trigraph is a source of much confusion for kids and teachers. Why not have a few of these detailed etymological stories as a common part of early literacy instruction? We use stories to teach young children so many life lessons. Why not harness the true stories of the histories of words to help them make sense of how our spelling system works? If we tell such stories from the beginning of instruction, children grow up with the sense that surprising English spellings are not frustrating "irregularities" to memorize. They are just interesting stories waiting to be told.

Douglas Harper describes his on-line etymological dictionary, Etymonline, as "a map of the wheel-ruts of modern English." This metaphor references the wheel ruts still visible in the stone of the Rockies where caravans of wagons travelled to settle the West. We can inspect the marks previous generations left in rock to help us understand our world. If we get better at reading the clues marked in the spellings of words, we have richer stories and understandings to offer our students. With this etymological frame, we m**igh**t look at teaching the <igh> trigraph in a different l**igh**t.

The value of etymology is easier to see if we add more puzzle pieces to this section of our orthographic picture. Another relevant word in this investigation is the word "knight." Obviously it has the same pronunciation as "night." It has the same <igh> trigraph, but a different initial grapheme for the /n/ phoneme (the <kn> digraph rather than the single-letter <n> grapheme). When we think about Old English, and the word

"knight" we might think about Medieval Kings and Queens, or perhaps Monty Python's "knights who say ni!" This word gives us a chance to consider another present day English digraph, the <kn> for /n/. This grapheme also includes traces of pronunciations and spellings from long ago.

It turns out that the <kn> digraph in "knight" for "A knight of the Round Table" used to be pronounced differently. We used to pronounce the /k/ and the /n/. Over time, the pronunciation shifted to drop the initial /k/, but the spelling stuck. In fact, I highly recommend that people explore this link to Etymonline's entry on the spelling <knight>. It is entries like this that inspire me to tell students and teachers that Etymonline is my favourite story book — it's just a storybook about words!

Some might think that it would be better if we had dropped that <k> when we dropped the initial /k/ pronunciation. It's a reasonable hypothesis, but consider the problem this would have generated. We would end up with the spelling <night> which collides with the spelling of the word for when it's dark outside!

Different words with the same pronunciation give us a chance to introduce a key part of the story of how our spelling evolved called the "homophone principle." This is the principle that, wherever possible, words that can be pronounced the same are spelled differently to signal the difference in meaning. This, along with many other key conventions of English orthography, is well described in Richard Venezky's 1999 book "The American Way of Spelling." Understanding the homophone principle is a powerful way to help people understand that having so many ways to "spell the sounds" of words it isn't a bug of the writing system; it's a feature. If we had a spelling system with a one-to-one correspondence of graphemes and phonemes,

all homophones would be spelled the same — and that would be confusing. (And this is only one of the problems such a system would create.) Whether or not we think this spelling principle is a good idea is immaterial, though. It is a demonstrable part of our spelling system, and one which we can teach students.

When I get to address the spelling and meaning of the word "knight," I spell-it-out "kn-igh-t" and then have kids try to spell it like I did. I might use one tap for each grapheme to nail down those structures as individual spelling units regardless of whether they are comprised of one, two or three letters. After they spell-it-out like me, I might ask them what they feel at the beginning of saying "knight" to help them announce the /n/ phoneme. I can then ask if they have an idea about how we spell that /n/ we hear at the beginning of "knight"? Having announced and tapped that initial <kn> as a unit, it rarely takes long to see that <kn> is just a common way of spelling the /n/ phoneme. We can then help students remember this digraph by sharing the story of how the word used to be pronounced in Old English.

The <kn> digraph may not be the most common spelling of /n/, but it does occur in many high frequency words that are sometimes wrongly described as "irregular." Consider words like "knee" "knife" "know" (which also used to be pronounced with an initial /kn/ consonant cluster in Old English). Once we see our <kn> as a unit in present day English, we can no longer describe these words as having a random "silent k." That would be like saying that the word "back" has a silent <c>!

Noticing the <kn> for /n/ is like spotting a tell-tale pattern on puzzle pieces to help us fit them into our puzzle. Let's pick one of those spellings and see if we can fit them into the picture of English spelling I'm trying to put together. Consider the spelling

<know>. This spelling follows the homophone principle by distinguishing it from its homophone spelled <no>. Isn't it convenient that we didn't drop that <k> when we dropped the /k/ pronunciation? That would collide with the spelling of the word "now."

I know this is a long trail to respond to Betty's original question. But that's because it takes time to understand spellings. We can only understand a given spelling if we compare and contrast it with others. In this case, I've tried to illuminate a section of our orthography system that teachers are rarely taught. Without understanding of these aspects of spelling, we are left to conclude — and teach — that English spelling is full of "exceptions" that kids are stuck memorizing. I taught based on this assumption for 9 of my 10 years as a classroom teacher, until I was introduced to a rigorously linguistic understanding of English spelling from Real Spelling.

Stories play a powerful role in learning. Graphemes and phonemes are inherently abstract. When we learn about stories behind the spellings and meanings of words, we can use those meaningful stories to inform instruction about abstract grapheme-phoneme correspondences, including the <igh> and <kn> graphemes that so often frustrate learners.

I suspect some will argue that this content is too complex for young children or even teacher training. This is a hypothesis. If we want our instructional choices to be driven by science, we need to test it. As one anecdotal illustration, watch these 6-year-olds working with Etymonline. These students had been studying with Lyn Anderson. See her brilliant resources for orthographic instruction with young children at Beyond the Word.

Avoiding the role of etymology on grapheme-phoneme correspondences has many consequences. But we can't see those consequences until someone shows us how etymology fits in the orthographic picture. Without etymology, we are forced to teach inherently abstract concepts without offering a *meaningful,* understandable context. Literacy instruction is typically framed by the assumption that English spelling has many irregularities that have to be memorized. Educators and parents are well aware of the frustration struggling kids have memorizing spelling "exceptions." By contrast, I have a friend who says "Oh! I wonder what the story is behind that spelling?" whenever they encounter surprising spellings. She and her students have learned that such spellings are often a door to interesting learning, not a signal of another irregular word to memorize. Which option do you suppose is more motivating to get children to study the spelling, pronunciation and meanings of words?

The homophone principle explains so much

Teaching about the homophone principle is a powerful way to help kids understand that having so many ways to spell words is an advantage for *understanding* the spelling and meaning of words. It would be confusing if words that can be pronounced the same were spelled the same when they are unrelated in meaning. To distinguish homophones, we *require* a spelling system that has multiple ways to spell the sounds!

When we understand the big picture of how the spelling system works, not only to mark pronunciations, but also to mark meaning, we can see the <igh> as a very useful grapheme. After all, it helps us distinguish the <might> that means "possibly" from "mite" the insect and to distinguish the "write" for "writing something down" from "do the right thing."

Years ago a Grade 1 teacher I was working with ran into the homophone principle near the beginning of the year and it grew into a year-long word hunt adventure. Kids were going crazy looking for homophones all year long. Families got into the game by noticing homophones when they were eating dinner or while camping so that their kids could bring more homophones to class. By the end of the year, they had found hundreds.

Imagine the focussed attention these kids paid to the links between the spellings, pronunciations and meanings of so many words. It was the homophone principle that *motivated* them to take part in a year-long scientific inquiry into orthography. As we saw with the words "night" and "knight," studying homophones can be a rich means for learning grapheme-phoneme correspondences like the <kn> for /n/ or the <igh> for /aɪ/. Words with these graphemes are often taught as "irregular spellings" to memorize. As we see, there is nothing "irregular" about them. See the story of the Grade 1 homophone hunt here.

I regularly use the classic, "I went to the sea, sea, sea to see what I could see, see, see" to introduce the homophone principle young children who may just be learning their letter names. We talk about the different meanings of these two words that happen to be pronounced the same. I reveal their different spellings by writing-them-out-loud on the board. That means the kids see the different spellings <sea> and <see>, but they also get a clue to the graphemes when I spell and announce the graphemes as groups like this:

"s—double-e" and "s—ea"

After I write them out-loud, we practice this graphemic structure by getting the kids to spell-the-words-out-loud like I do. I often use tapping of graphemes <s> <ee> and then <s> <ea> to make

this graphemic structure as explicit as possible. This process gives kids practice with the names of letters *and* graphemes.

I can ask kids to say the word "sea" for "ocean" and attend to "what they feel at the beginning." This helps them announce the initial /s/ phoneme. I can then ask, how do you think we write the /s/ in this word "sea?" Either they get it themselves (usually) or I explain that we are using the <s> to write /s/. Then I can get them to tap out "s—ea" again like me (one tap per grapheme). Now I can ask, what they feel at the end of saying "sea." This gets us to pronounce the phoneme /iː/ ("long <e>"). When I ask how do you spell /iː/ in "sea" it becomes clear that this phoneme is spelled with an <ea>. When we go through the same process with "see" it become clear we spell that same /iː/ phoneme with 'double-e' (the digraph <ee>). When I ask young children why they think these words are spelled differently even though they are pronounced the same, the response is always on point:

"Because they are different words."
"Because they mean different things"
"It would be confusing if they were spelled the same."

When I teach this way, young students recognize the logic of the homophone principle before I use the phrase. Why not introduce young learners to this logical aspect of their writing system so they can build on it from the beginning of literacy learning?

We want students to attend carefully to the bindings between the spellings, pronunciations and meanings of words. This is the explicit recommendation for literacy instruction from theories such as "orthographic mapping" (Ehri, 2005, 2014), and Perfetti's (2007) "Lexical Quality Hypothesis." But how do we best motivate kids to attend closely to the these associations?

It seems to me that every time instruction presents students with "irregular spellings" they have to memorize, we are likely to reduce a learner's motivation to attend closely to grapheme-phoneme correspondences. By contrast, replacing rote memorization with meaningful stories which reveal the logic of English spelling should provide not only more understanding of the spelling of individual words, but also increased *motivation* to investigate surprising spellings in the future.

Nothing motivates like understanding

As we know from cognitive load theory (CLT), the construction of new schema (such binding the pronunciations, spellings and meanings of words — a word's identity — in our mind) takes cognitive effort. Motivation to expend the required effort, therefore, is key to building well-integrated schema (Schnotz & Kürschner, 2007; Paas & van Merriënboer, 2020). Students who particularly struggle with spelling and reading "irregular words" face multiple challenges to literacy learning. They take longer than their peers to learn those words, many of which are very common. Reading comprehension is hindered each time a student gets stuck on a word.

Especially for kids who struggle in early literacy, a sense of learned helplessness is more likely to develop when spelling is presented as "irregular." A child's motivation to attend to literacy instruction is likely reduce if the patterns they work to learn seem to have exceptions in so many common words. (See a description of how SWI fits with recommendations of CLT here.)

There is wide agreement in the research that we want to maximize the attention learners give to the associations between the spellings, pronunciations and meanings of words. This is how learners develop what orthographic mapping calls "sight words."

For Perfetti (2007), these are words for which the learner has "high quality lexical representations." Whatever we call them, these are words for which learners have automated access during reading and spelling. Explicit teaching about morphological and etymological influences on grapheme choice can make sense of spellings that cannot otherwise be understood. Instruction which rewards student effort with understanding motivates continued effort.

If you found this tip of the orthographic iceberg interesting, and want to get a better picture of what's beneath the surface, you might find this page from my website interesting. That document has resources to help a school staff study what they might learn from the spelling of "know" across the grades..

The great thing about making puzzles is that it gets easier the more pieces you fit together. At first, we find those edge pieces because they are so easy to identify. Next we look for the most obvious cues based on patterns of colour and shape. The more sections of the puzzle we put together, the more cues we have for where the other pieces fit, and the fewer unplaced puzzle pieces we have to sort though. With each new satisfying 'click' of a piece into the picture, the process becomes easier. Think of that feeling of finding the piece that links big chunks of a puzzle!

Neither working with puzzles, nor trying to understand spelling is about speed. Sometimes we have bursts of success, and sometimes we can't seem to find anything that works, so we take a pause and come back. But eventually the image gets more and more clear. As more pieces fit together, we create the context that makes sense of where pieces fit that used to seem unidentifiable. Those <igh> puzzle pieces start to make sense when we have a richer context for how they fit in the orthographic picture.

On the other hand, did you ever find yourself forcing a piece of a puzzle that 'kind of fits' and leave it in place even though you were not certain if that was really where it belongs?

We can fool ourselves into feeling good about getting one more piece in place. But that momentary feeling of success is a siren call leading us astray. It prevents us from finding the right piece for that space because we filled it with the wrong one. It also removes a piece from the box that is needed for another space. We can never finish the puzzle until we finally take out that piece when we finally accept the evidence that we put it in the wrong spot. Whenever I find myself in that position, I always remember I had doubts when I put that one in!

Another option is to place a piece near where we think it might fit as a 'working hypothesis' without closing off a better hypothesis that might come along. We can wait until we fit more pieces together before we commit. The best fit will be easier to sort out as the picture comes into better focus.

In science, falsification is our friend. When we ignore evidence that what we are thinking doesn't work, we just prevent ourselves from being able to find how things really fit together.

I hope that long journey was worth the ride, Betty. Your **quest**ion was certainly a rich one.

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Thanks to Gail Venable for helping put these pieces together.

For a detailed account of the theory, practice and research of SWI, see Bowers (2021, Feb 5) at THIS LINK.

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