

## KEYNOTE ADDRESS: Technology and Literacy: The Ultimate Chicken and Egg Conundrum

Elaine Cheesman, Ph.D. (2017)

### Types of Educational Technology

Educational technology includes both assistive technology (AT) and instructional technology, although the boundaries between these categories often overlap.

**Assistive Technology** allows a person to do a task independently that would be *difficult* or *impossible* under typical conditions.

**Instructional technology** helps the user learn new information or develop automaticity and fluency in previously-taught skills. Instructional technology can be used in two ways – to augment teacher-led instruction and to provide opportunities for independent student practice.

### What to Look for in Effective Instructional Programs / Apps

1. The content is accurate and validated by research evidence and does not perpetuate theories unsupported by research evidence.
2. The design has professional sound and images to support learning.
3. The user interface is straight forward and orderly with minimal distracting images sounds.
4. The user interface is intuitive, and is age- and content-appropriate for the intended users
5. Practice activities develop automaticity.
6. The feedback for success or error correction is immediate and unobtrusive.
7. Users can access oral or written instructions intuitively.
8. Teachers and parents can access written instructions easily.
9. NO in-app purchases (IAP) for other programs / apps.
10. NO advertisements.

### Skilled Literacy (Hollis Scarborough)

- A. Word Recognition / Production
  - Letter naming & writing
  - Phonemic Awareness
  - Systematic, explicit phonics
  - Sight word reading and spelling
- B. Language Comprehension
  - Vocabulary
  - Language Structures
  - Background Knowledge
  - Verbal Reasoning
  - Literacy knowledge

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### Programs / Apps for Word Identification and Spelling

#### Letter naming & writing

Features of Effective Programs / Apps:

- Includes freehand formation practice. (Forming letters independently activates the reading and writing brain circuits in a way that tracing does not.)
- Immediate, unobtrusive feedback for incorrect letter formation
- Links the shape of the letter with the name of the letter.

**Handwriting Without Tears: Wet Dry Try** <http://wetdrytry.com>

Provides instruction and practice with manuscript letters and numeral writing. Has clear verbal instructions and models of each stroke. Optional settings for stroke error tolerance and left- or right-handed users. Oral feedback is prompt and specific (“Don’t go outside the line!”). Supports unlimited users with progress monitoring data and computer reports. Educators can view on line reports, graphs and data for individuals or whole class.

**Writing Wizard and Cursive Writing Wizard** <http://lescapadou.com>

Pronounces the name of the letter before modeling the strokes. Customizable font style, size and writing image (colorful stickers or plain pen tip). Problem: No opportunity for freehand practice.

#### Phonemic Awareness

*Features of Effective Programs / Apps*

- Emphasize sounds of spoken language (syllables, onset-rime, phonemes).
- Emphasize blending phonemes to make words (supports reading) or segmenting oral words into phonemes (supports spelling).
- Do not require knowledge of letter names, but can incorporate some letters into the activities.

**Beginning Sounds Interactive Game** [www.lakeshorelearning.com](http://www.lakeshorelearning.com)

Categorizes first sounds using three picture prompts. Engaging arcade game format

#### Explicit Phonics for Reading and Spelling (Some include Phonemic Awareness)

Features of Effective Programs / Apps (Phonetically-Regular Words)

- Letter sound apps match letters to the most common sound (e.g., short sounds for vowels, /k-s/ for x, /w/ for w). Decoding apps present concepts systematically and cumulatively, progressing from easier to more difficult concepts.
- When two or more letters represent a single sound (e.g., ll, ss, sh, ai, igh, dge), the grapheme is shown as one unit, not separate letters.
- Pronounce article a as /ə/, not long /a/ as in apron.

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### ABC Reading Magic series [www.preschoolu.com](http://www.preschoolu.com)

Blends oral words presented as photographs; includes letters in a separate game.

- *Reading 1: CVC words*
- *Reading 2: CCVC, CCCVC, CVCC, CVCCC*
- *Reading 3: Two syllable words*
- *Reading 4: Vowel-Consonant-Silent-e words*

### ABC Spelling Magic series [www.preschoolu.com](http://www.preschoolu.com)

Segments oral words presented as photographs; links to letters in a separate game.

- *Spelling 1: CVC words*
- *Spelling 2: CCVC and CVCC*
- *Spelling 3: Two syllable words*
- *Spelling 4: Vowel-Consonant-Silent-e words*

### SoundLiteracy <http://soundliteracy.com>

For use as a teacher instructional aid; not for independent student use, this digital “tile” has virtual manipulatives for letters, graphemes, and morphemes. It includes comprehensive sets of all graphemes.

### OG Card Deck <http://www.mayersonacademy.org/>

Presents written graphemes, associated sounds, keywords and articulation video clips. Spelling drill provides sounds for user to spell. It includes multiple spellings for single sounds (e.g., /k/ = k, c, ck, que) Can be used for direct instruction by a teacher or independent student review.

### ABC Magic series [www.preschoolu.com](http://www.preschoolu.com)

Match letters to spoken sounds. Level 6 matches first, middle and final sounds. All others match first sound only.

### Starfall ABCs / Starfall Learn to Read [www.starfall.com](http://www.starfall.com)

Identical free and ad-free website and mobile app. Has engaging animations and games for learning letter-sound correspondences. Letter name, not sound in keyword for x (*x-ray*). A better keyword is *box* for /k-s/.

### abc PocketPhonics [www.appsinmypocket.com](http://www.appsinmypocket.com)

Combines handwriting practice and spelling individual graphemes (letters and letter clusters that represent one sound). Uses target spelling-sound correspondence to spell spoken words. Appropriate for learners aged 7 and older. Educational, not game format.

### SpellingCity [www.spellingcity.com](http://www.spellingcity.com)

Practice spelling, vocabulary and handwriting using user-entered or imported word lists. In the paid version, one can access and share lists with published textbooks. Appropriate for grades 1 – adult.

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### Bob Books - Reading Magic <http://bobbooks.com>

Decodable, illustrated, interactive stories. Drag and drop to spell spoken words in the story. Orally reads the sentence after all the words are formed. Each story contains four progressively more difficult user tasks.

### Sight Word Reading and Spelling

*Features of Effective Programs / Apps: High-Frequency (“Sight”) Words*

- Derived from the Fry “Instant Word” list of 1,000 most common words (1980) or the Dolch word list of 220 most common words for preschool – third grade.
- Words are presented in small, manageable groups.
- Practice activities develop automaticity.
- Pronounce article a as /ə/, not long /a/ as in *apron*

### Sight Words by Little Speller [www.alligatorapps.com](http://www.alligatorapps.com)

Learn and practice the spelling of 200 Dolch words. Drag-and-drop letters format. Adjustable options to scaffold task difficulty

### Fry Words [www.alligatorapps.com](http://www.alligatorapps.com)

Provides systematic instruction and practice for 1,000 high-frequency words based on the Fry list. Has a “learn” mode and an engaging “game” mode that challenges users to identify high-frequency words from a choice of two to five words.

### Fry Words Ninja – Reading Game [www.alligatorapps.com](http://www.alligatorapps.com)

Engaging game format builds automaticity and fluency for 1,000 high-frequency words based on the Fry list. Challenges the user to match spoken words with written words that fly up from below. The pronunciation uses a mature voice appropriate for all ages. The format may be difficult for distractible students.

### Sight Words by Photo Touch [www.grasshopperapps.com](http://www.grasshopperapps.com)

Builds automaticity and fluency for the 220 Dolch words. Use matches spoken and written words by selecting the correct word from a list of three to ten words. Automatically adjusts the number based on user success

### Homophones [www.alligatorapps.com](http://www.alligatorapps.com)

Provides practice using the correct homophone in sentences. Reading and using correct homophone. Presents some homophones in seven engaging games. Optional text-to-speech feature reads sentences.

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### Programs / Apps for Language Comprehension

#### Vocabulary

##### Roots to Words [www.taptolearn.com](http://www.taptolearn.com)

Presents morphemes organized by category—Numbers, Quantity, Shapes, Directions, Comparison, Time & Distance, See 'N Speak, Not or Against, Body and Life, Movement, People, Feelings, Life Cycle, Anatomy I and Anatomy II. Provides several activities to link spelling, meaning, and related words. Requires reading skills. Four activities to reinforce skills.

#### Writing and Proofreading

##### Grammarly. [www.grammarly.com](http://www.grammarly.com)

This is a web-based writing program that identifies complex writing errors in text and provides suggestions for the writer, who corrects each error manually. It automatically supports documents, email, social media posts. The free version identifies errors in contextual spelling, grammar, punctuation, and syntax. The user can export the corrected document with same file name. The free version has many useful features; the premium detects plagiarism, and provides citation suggestions. The premium upgrade provides statistics on each type of error. School site licenses are available. It is appropriate for older writers and English Language Learners.

##### No Red Ink [www.noredink.com](http://www.noredink.com)

Web-based program for individualized, focused practice and quizzes in a multitude of grammar and writing concepts for grades 1 through college. The free version has extensive content organized by grade level. The site has both desktop and mobile platforms.

#### Background Information

##### Intro to Geography: United States; Intro to Geography: World. [www.montessorium.com](http://www.montessorium.com)

Match map shapes to states (US) & countries (World). It is fully narrated; no reading skills needed. It is organized by geographic area. Presents small bits of information, followed by systematic and cumulative instruction and review. Appropriate for both young and mature students.