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 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, 2001)

A. Word Recognition (Reading and Spelling)

- Letter naming & writing
- Phonemic Awareness
- Explicit phonics (reading and spelling)
- Sight word reading and spelling
- B. Language Comprehension
 - Vocabulary
 - Language Structures
 - Background Knowledge
 - Verbal Reasoning
 - Literacy knowledge

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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.

Letter School / Cursive Letter School www.letterschool.com

These engaging apps help kids identify and form numerals and the letters of the alphabet, match upper- and lower-case forms, and learn the associated sound. Some associate sounds are not the most common sounds (e.g., X is for x-ray rather than k-s/ as in box)).

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

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

Blending SE and TE (Student / Teacher Edition) http://store.95percentgroup.com

Provides oral, explicit, step-by-step sound-blending instruction and practice and systematic practice to distinguish between spoken words that are pronounced with pauses between sounds—/f//i//g/—or sounds together—/fig/) to reading several whole words. It reinforces concepts taught by parent or teacher using 95% Group Teacher's Guidebook, "Teaching Blending from /k//a//t/ to /cat/ in 8 Stages."

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 <u>x</u>, /w/ for <u>w</u>. 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., II, ss, sh, ai, igh, dge), the grapheme is shown as one unit, not separate letters.
- Pronounce article a as /ə/ as in ago, not long /a/ as in apron.

OG Card Deck http://www.mayersonacademy.org/

Presents written graphemes, associated sounds, keywords and articulation video clips. Can be used for direct instruction by a teacher or independent student review.

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ABC Magic series www.preschoolu.com

Match letters to spoken sounds.

Starfall ABCs / Starfall Learn to Read 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 Reading Magic series 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: Multiple Syllables
- Reading 4: "Phonograms" Digraphs, Vowel-r and vowel team syllables in one and 2-syllable words
- Reading 5: Vowel-Consonant-Silent-e words

ABC Spelling Magic series 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: Blends and Syllables
- Spelling 4: Vowel-Consonant-Silent-<u>e</u> words

SpellingCity www.spellingcity.com

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

abc PocketPhonics <u>www.appsinmypocket.com</u> or <u>www.appsinmypocket.com/school</u>

This app combines handwriting practice and spelling graphemes (letters and letter clusters that represent one sound. After the graphemes are introduced, the app guides the user to apply the target spelling-sound correspondences to spell spoken words. It supports multiple users; school versions are available to enable students to work on different devices. Progress reports are available online or via a weekly email. It is appropriate for learners aged 4 and older.

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.

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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

Fry Words 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

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 Little Speller www.alligatorapps.com

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

All Components of Reading and Spelling

Florida Center for Reading Research www.fcrr.org

This web site has thousands of downloadable "Center" activities in all five components of reading – phonemic awareness, phonics, fluency, vocabulary and comprehension. It also has research and resources for teachers.