



WORLD LITERACY SUMMIT 2020

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#WLS20

Digital Literacy



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Presentation Targets:

- **Differences in reading digital versus print**
- **Recommendations for teaching digital literacy and social media**
- **Recommendations for curricula design**
- **e-resources**

Essential Questions:

- 1. Does reading from a screen change the core processes of reading: use of deliberate strategy, background knowledge, decoding, phonemic awareness, phonological processing, and fluency?**
- 2. Does digital technology have a direct or indirect effect on deep reading and reading fluency?**
- 3. Does digital technology have a direct or indirect effect on how students think?**

Definitions of Digital Literacy

“The ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.”

American Library Association, 2020

“The ability to find, evaluate, utilize, share, and create content using information technologies and the Internet.” Cornell University, 2020

“The ability to create, navigate, and evaluate information on various digital platforms.” Daniel Willingham, Cognitive Scientist, 2017



The 21st Century Reader

...whose eye increasingly will not stay still; whose mind darts like a nectar-driven hummingbird from one stimulus to another; whose “quality of attention” is slipping imperceptibly with consequences none could have predicted.

Maryanne Wolf in *Reader, Come Home*, 2018



Digital Technologies:

- Video gaming
- Computer use
- Web surfing
- Text messaging
- Social media
- App use
- Consumption of music
- Consumption of data



Digital Pros:

- Individualized, self-paced learning with immediate feed back.
- Immediate assessment data.
- Incites more engagement and user-interaction; students enjoy working with technology.
- Anyone and everyone can write and publish.
- Information is abundant and omnipresent.



Digital Cons:

- Minimal to no relationship with the teacher; important in early reading
- Issues with technology.
- False information without vetting sources
- Focus on site's appearance, volume, rank-order rather than site authorship, sponsors, etc.
- Lack of concept elaboration and vocabulary development
- Recent survey data by Common Sense Media indicates that less parents read to children in the last 10 years.



Digital Cons:

Bells and whistles do not lead to building stronger reading skills.



Neither Pro nor Con:

- **Pixels, layout, the concept of scrolling versus turning a page, hyperlink distractors and the portability of movement from source to source translate into a *different* reading experience.**

Screen vs. Paper

Does reading from a screen change the core processes of reading, ie., use of background knowledge, reading for meaning, decoding, phonological processing, fluency, etc.?



Screen vs. Paper

- The average person consumes the equivalent of 50,000 to 10,000 words a day across digital devices, equal to a novel.
- Teens use digital technologies on average of 8 hours per day.
- As of 2015, the average amount of time 3 to 5-year-olds spent on digital devices was 4 hours per day, up 52 percent from 2013.
- People in their twenties checked their cell phones between 150 and 190 times a day, and switch media over 20 times an hour.
- 40% decline of empathy among young people and college students since Y-2000. Online navigation at the cost of real-time interaction is largely to blame.

Screen vs. Paper Facts:

- Children raised without devices perform better on language tasks: missing eye contact, human attention, intonation, etc.
- With information overload, background knowledge becomes more challenging to apply to reading, impeding the ability to predict, make inferences, deduce, etc.
- The more enhanced the e-book, the more likely readers become distracted: scrolling, viewing pixels, hyperlinks, task-switching, etc.
- Sequencing and memory for detail can be compromised when reading on a screen.

Screen vs. Paper

- Multi-tasking feeds dopamine to the brain.
- Adult readers have a small “edge” over reading paper versus a screen in comprehension and speed.
- Comprehension is better when flipping virtual pages versus scrolling.
- Readers report having to exert more effort when reading from a screen.
- Typographic quality can significantly enhance recall in digital print
- Survey data show consistent numbers of students prefer paper textbooks to electronic.
- Parent–child reading of e-books together and story comprehension were negatively affected by the presence of electronic features.

Reading and Writing

Does digital technology have a direct or indirect effect on reading and writing?



Reading and Writing Facts:

- Interaction on digital devices, such as vocabulary, has positive results.
- Deep reading is greatly affected when reading on digital devices.
- Reading among teens has neither increased nor decreased statistically since 1999.
- Heavy users of media report lower grades but relationship of grades and leisure reading is positive.
- Less about the content and app; more about how features sync.
- Looking up information takes a toll on comprehension because searching for the right information turns into problem-solving.

Texting Facts:

- 90% of teens have smartphones
- 90% text on phones
- A typical teen sends and receives approx. 30 messages per day.
- Greater use of textese is associated with poor word reading and spelling.
- Children 10 and younger: more textese is associated with better spelling and reading.
- Spell and grammar checks allow for less textese with ability to auto-correct and insert words.



The Cognitive Cost

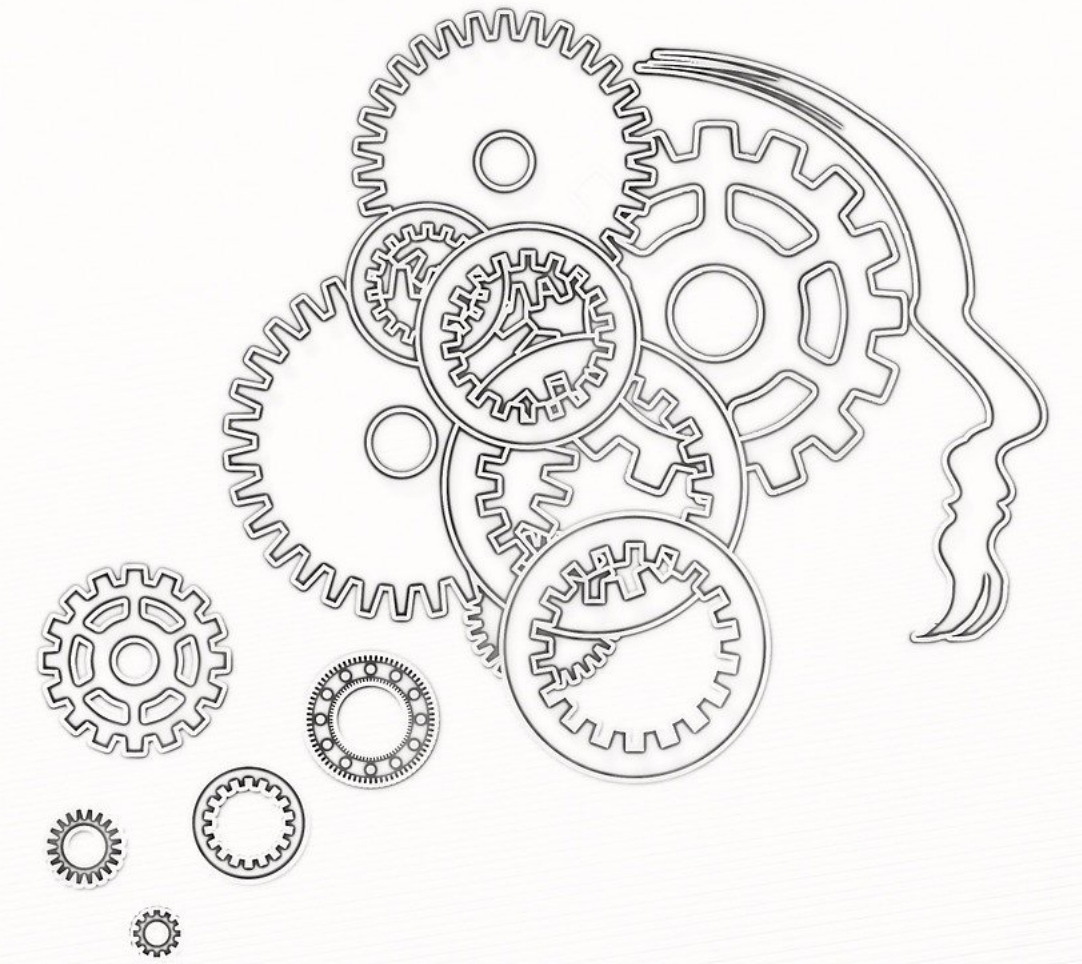
Does digital technology have a direct or indirect effect
on how students think?



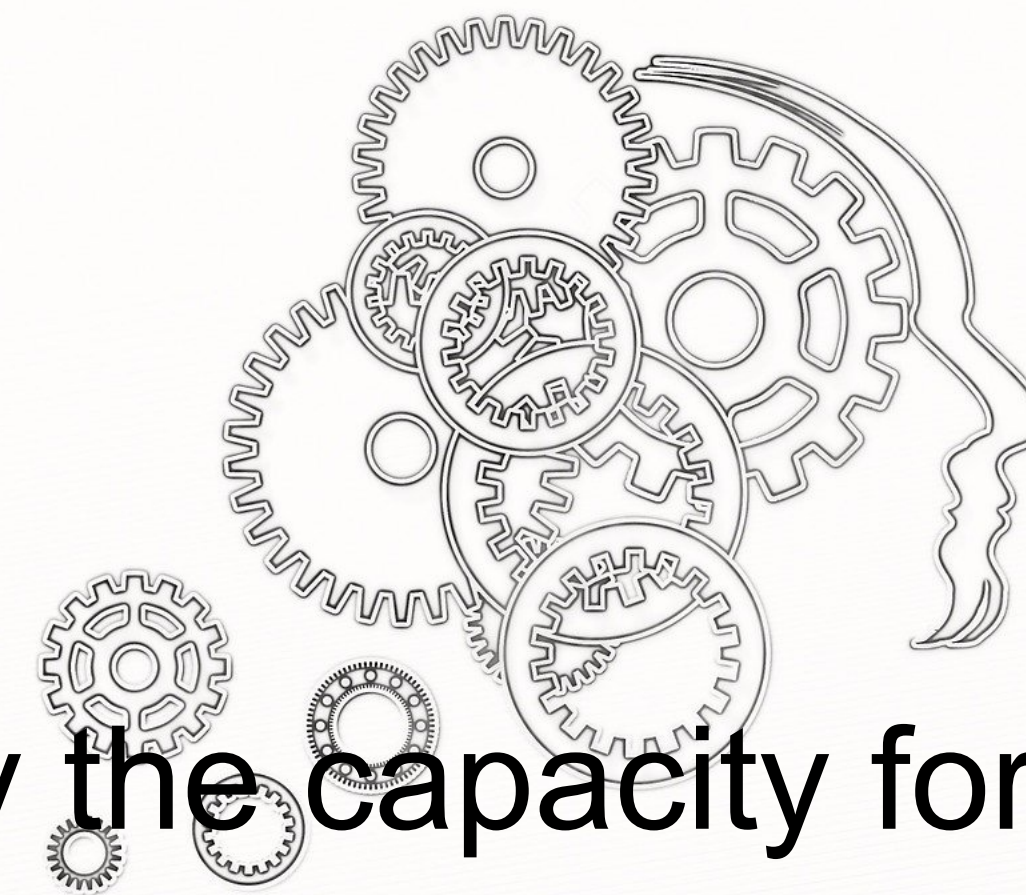
The Cognitive Cost

Mixed reviews:

- Less serious reading in web surfing, navigating multiple topics, and skimming; changes one's *ability to read deeply* (Rosenwald, 2014).
- Carr (2011) proposes that the internet is changing our brains due to both content and rapid attention shifts. “Media work their magic, or their mischief, on the nervous system itself”, and changes in the plasticity of the brain result.



The Cognitive Cost



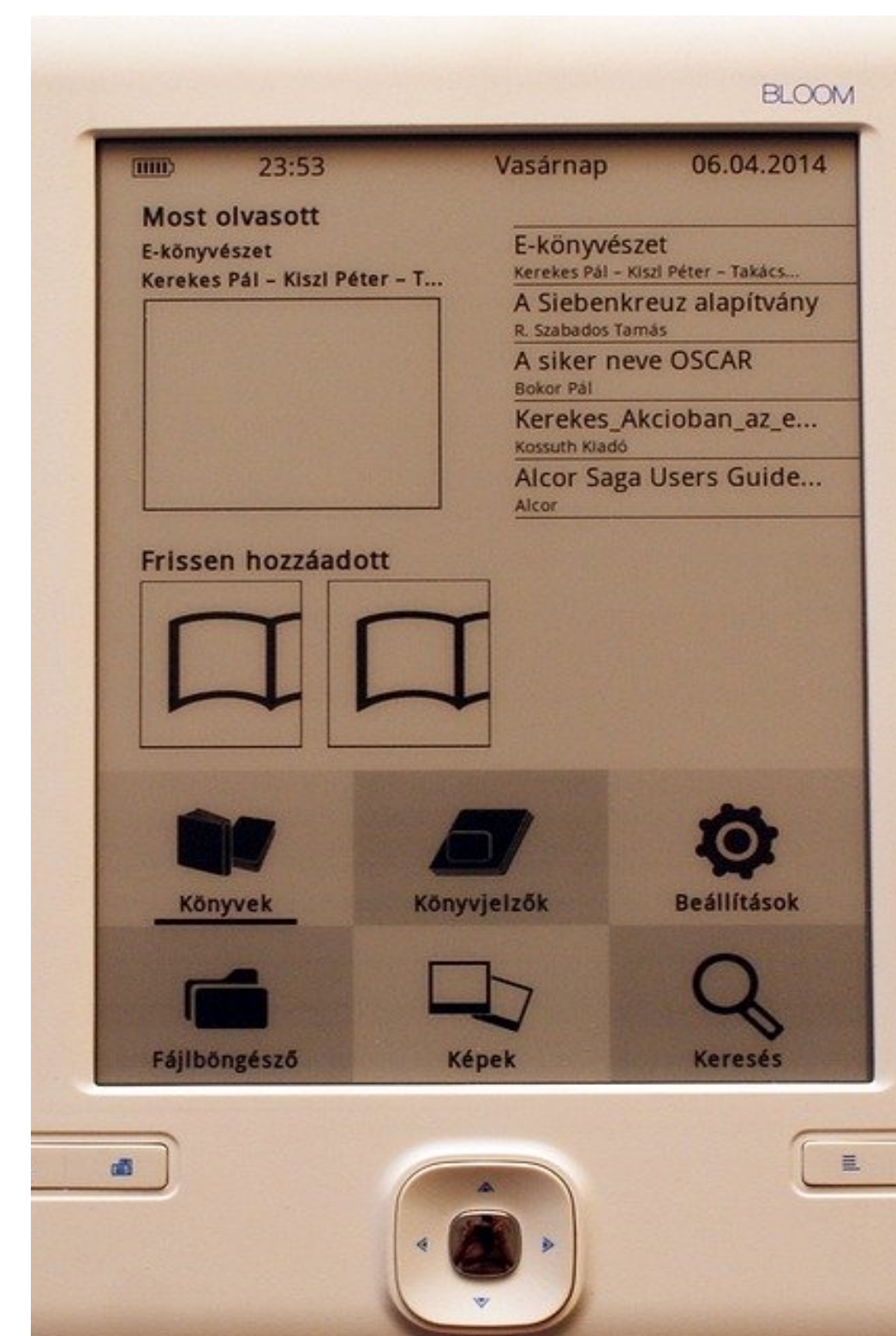
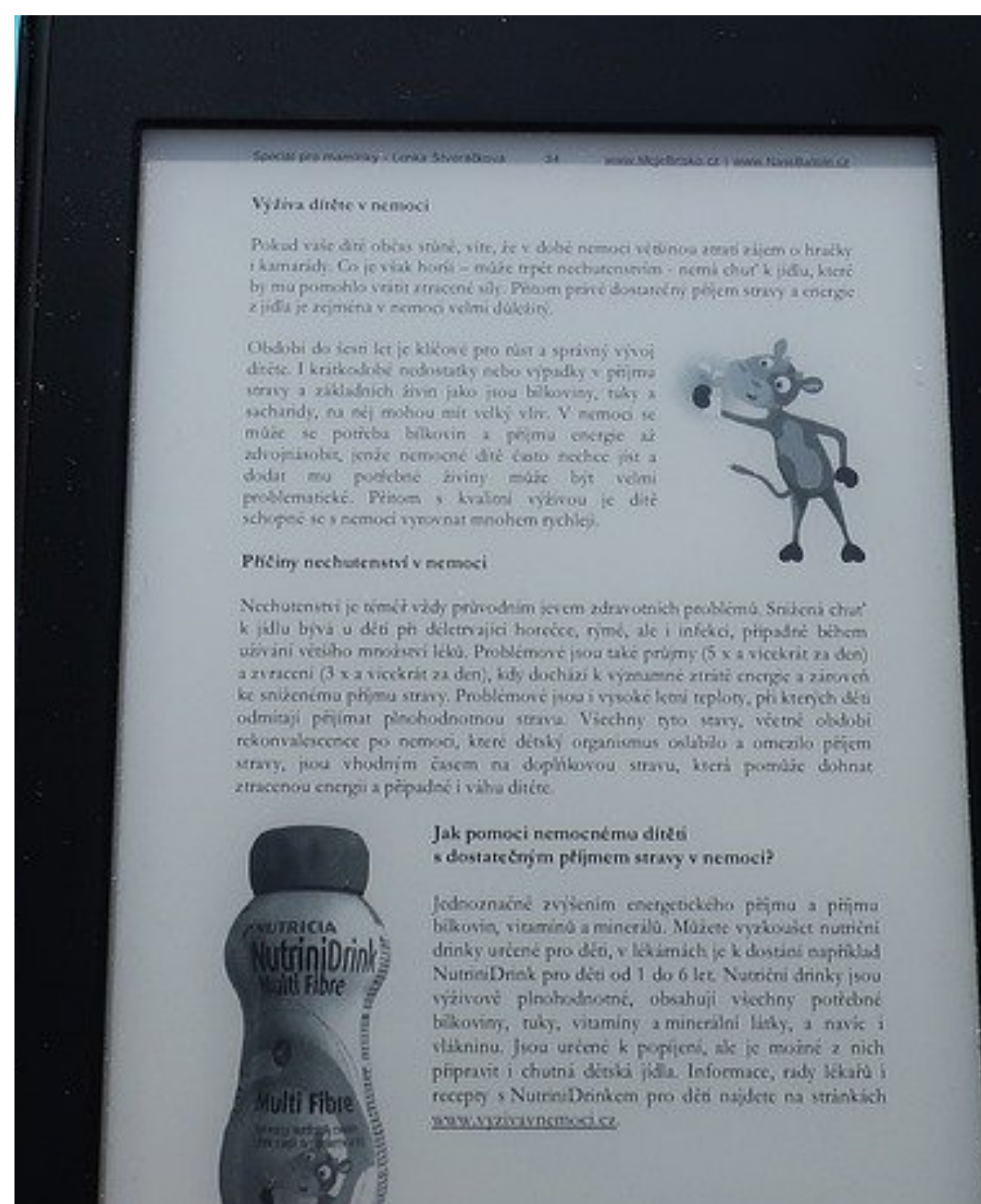
- Carr (2011) believes the internet is taking away the capacity for concentration, contemplation, and personal development of ideas.
- Willingham (2017) proposes that the cognitive system is too complex to undergo a fundamental change due to cognitive mapping.
- Research still missing on causal connections with deep-reading processes, partial attention, and working memory (Wolf, 2018).

The Cognitive Cost

There is no evidence that there are physical, irreversible changes to the brain that result from technology, however: **measures can, and should, be taken to mitigate their effect on the reading process.**

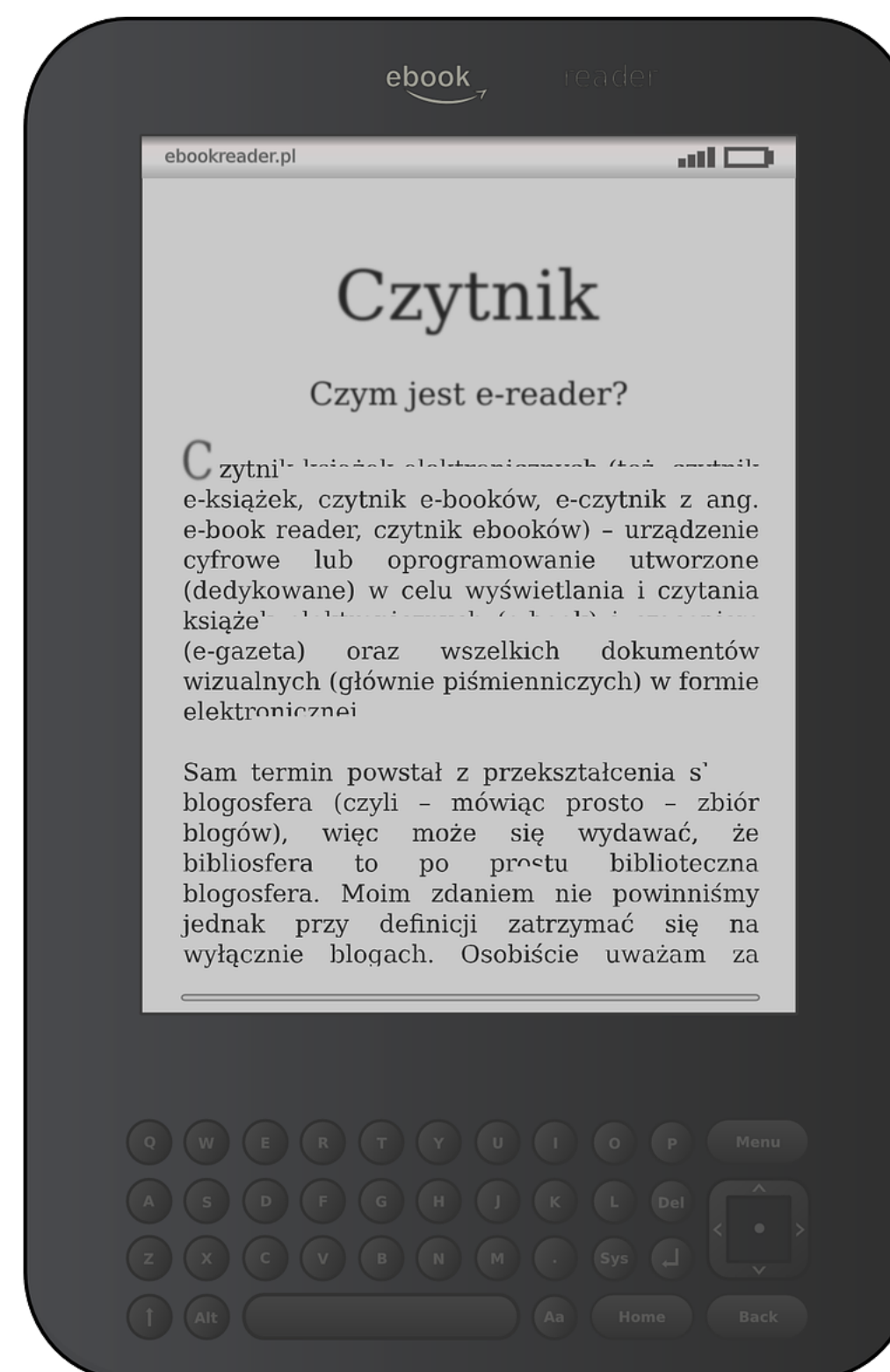
Implications for Curricula Design:

- Layout has a significant effect on reading.
- Reading is more efficient when text is arranged in a single column rather than multiple columns.



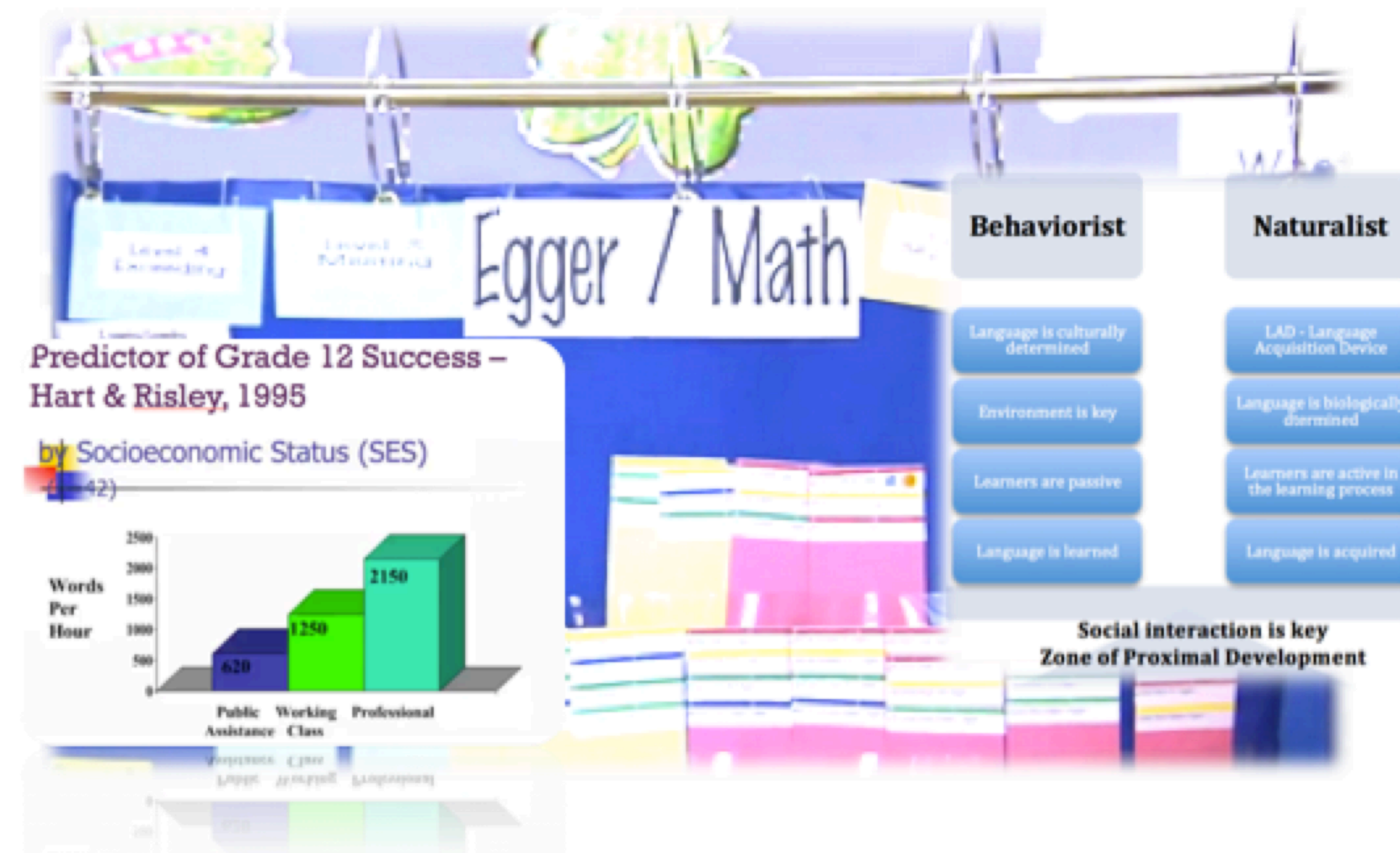
Implications for Curricula Design:

- Longer lines are read more quickly, but if too long become difficult for eyes to move from one end to another.
- Simple design in the first 5 to 10 year period of learning is crucial.



Implications for Curricula Design:

- Research continues to support the connection graphics have to comprehension, particularly in content area learning.
- Use images that support salient ideas. Use graphics to explain, introduce, demonstrate, support and define.



Implications for Curricula Design:

- Minimize distractors such as multiple link-outs, pop-up windows, backlinks, etc.
- Study the cognitive, social-emotional and moral impact on learning and integrate the best practices.



Implications for Curricula and Design:

The efficacy of carefully designed digital media is presently under study for children in adverse situations with limited access to schools, teachers, and caring, capable adults.



Early Digital Learning

- **Balance with real-time interaction and human interaction to build “reading circuits” (Wolf, 2018)**
- **Expose with strategy, gradually, and with intention**
- **Teach appropriate digital content and moderate use; limit access**
- **Increase use gradually to no more than two hours per day**
- **Use the 3 C’s: Child, Content, Context**
- **Play with their children in the first few minutes a new app and learn; find out what engages them**
- **Preserve time for child-directed play and human laps**

Teaching and Learning

- Use strategies for dual-language learners and “code switching.”
- Teach students to be flexible and code switch between print and digital medium, first separately and eventually coming together.
- Teach empathy through live examples: refugee children in other countries; allow them to develop parallel fluencies in language and empathy.



Teaching and Learning

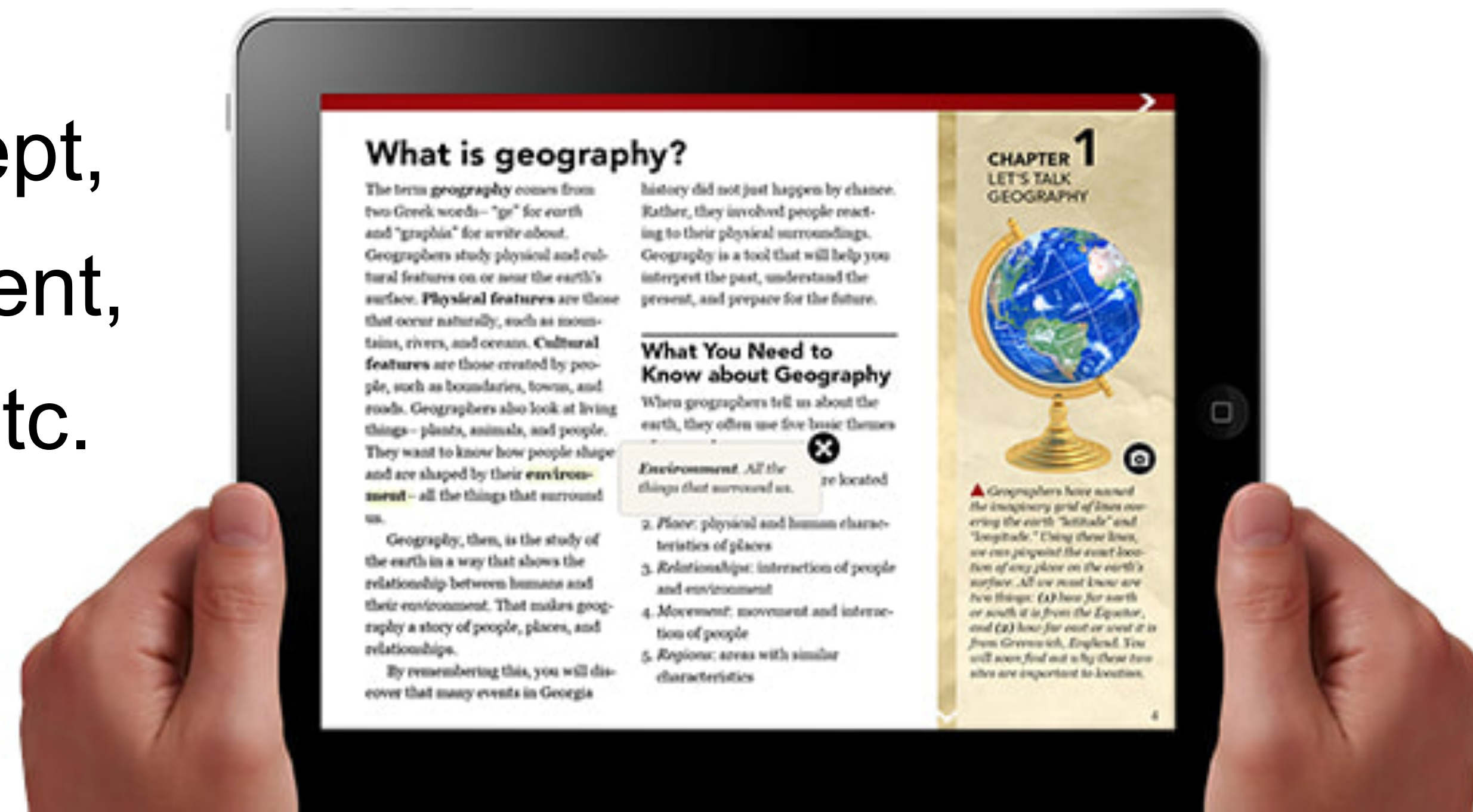
- Develop “biliterate brains” that teach choice and decision-making, building capacity about time and attention: when to scan, how to scan, succumbing to distractors, etc.
- Teach conventions and concepts of print: menu systems, the hierarchy of file structures, navigation, flipping vs. scrolling, etc.



Teaching and Learning

Teach visuals and images to deepen comprehension:

- Scanning images left to right
- Structural elements: composition, perspective, foreground and background, symmetry and asymmetry, motion and overall tone
- Purpose of images: concept, strengthening author's intent, persuasiveness, claims, etc.



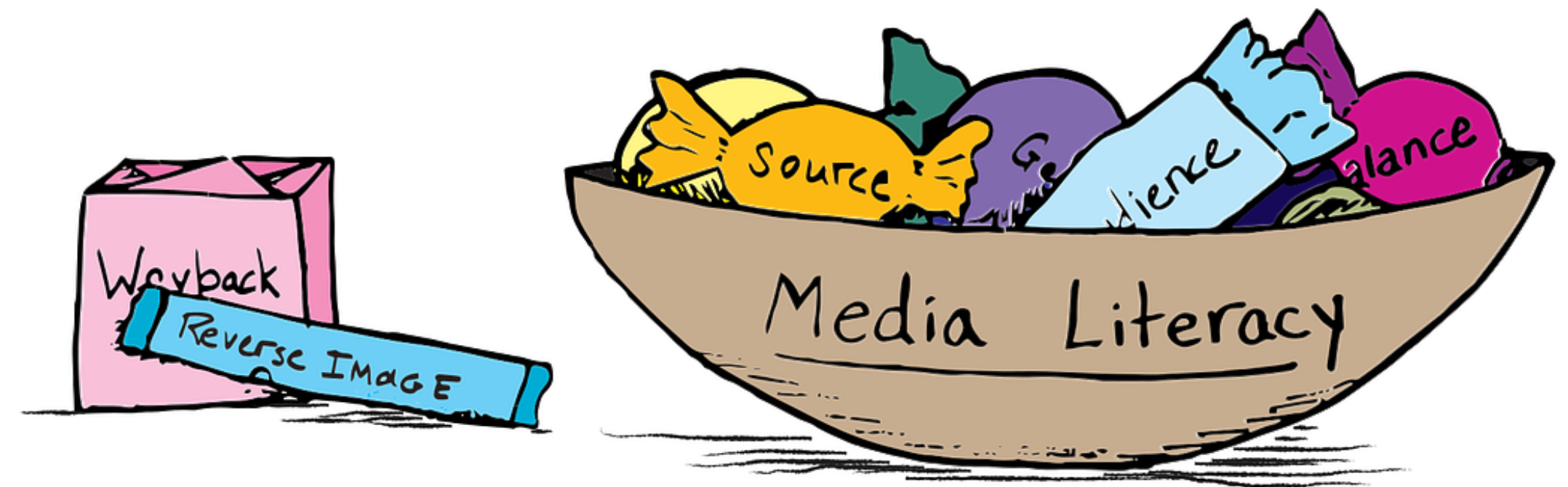
Teaching and Learning

- **Emerging readers:** introduce physical books and traditional teaching, use the same for digital - concepts about print, predictions, reflection, background knowledge, and asking and answering questions
- *Teach coding: sequential and analytical thinking, cause and effect, problem-solving



Critical Literacy for Teens:

- Distinguishing between real and false or “fake news” and “deep fakes”
- Evaluate author’s credentials
- Trace domain for:
 - commercial
 - educational
 - government
- Check for page updates
- Look for backlinks, or other sites linked back to it



Fake or Real?

- Pop-ups, banner ads
- Look at url “.co” after “.com”
- Look at “About” page and Google the word “fake”
- Follow links
- No quotes, references
- Look for reputable outlet that reports same news
- Check dates
- Reverse image search ie., TinEye to check source info.
- Arouse emotion?
- Do not share if unsure!

BREAKING NEWS CONSUMER'S HANDBOOK

FAKE NEWS EDITION

1. Big red flags for fake news: ALL CAPS, or obviously photoshopped pics.
2. A glut of pop-ups and banner ads? Good sign the story is pure clickbait.
3. Check the domain! Fake sites often add “.co” to trusted brands to steal their luster. (Think: “abcnews.com.co”)
4. If you land on an unknown site, check its “About” page. Then, Google it with the word “fake” and see what comes up.
5. If a story offers links, follow them. (Garbage leads to worse garbage.) No links, quotes, or references? Another telltale sign.
6. Verify an unlikely story by finding a reputable outlet reporting the same thing.
7. Check the date. Social media often resurrects outdated stories.
8. Read past headlines. Often they bear no resemblance to what lies beneath.
9. Photos may be misidentified and dated. Use a reverse image search engine like TinEye to see where an image *really* comes from.
10. Gut check. If a story makes you angry, it's probably designed that way.
11. Finally, if you're not sure it's true, don't share it! *Don't. Share. It.*

Media Literacy for Teens.gr

Media Literacy and Critical Thinking: Training the Future Digital Citizens and Leaders, otherwise known as: *Media Literacy for Teens.gr*. project on critical thinking and media literacy for teenagers to aid them in seeking out and creating quality in information for the web, particularly with disinformation and dissemination of fake news.

Media Literacy for Teens.gr



- CLIL (Content and Language Integrated Learning), a second language learner approach which involved:

Content (subject matter)

Cognition (learning and thinking)

Communication (language learning and use)

Culture (intercultural understanding, global citizenship)

Media Literacy for Teens.gr

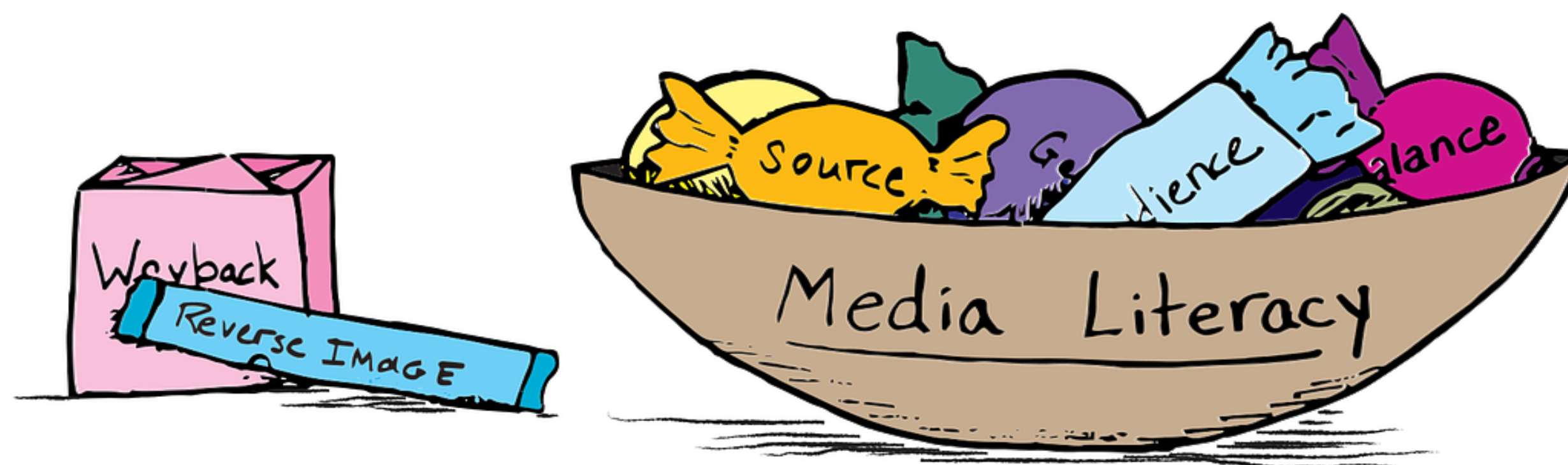
*Students did not realize that they spend more than **7 hours per day** consuming information through social networks, television, web surfing, and advertisements.*

- 47% spent about 3-4 hours a day online
- 34% spent 1-2 hours
- 42% paid more attention to visuals than headlines, and less to reading of content or a full article; little attention paid to author, source validity and reliability.
- 47.4% had previous instruction on how to check for fake news, the remainder either unsure or none at all.

Media Literacy for Teens.gr

Students were taught strategies for critical thinking and learning through digital project-based activities that simulated real life situations:

- Checking sources
- Vetting websites
- Identifying clickbaits



Student Quotes:

Having the opportunity to use our personal devices, was something that I loved about this project. It was more practical and helpful for us since we are all accustomed to technology.

Though my mobile phone is my favourite device, I could never imagine how useful it might be to study for school! No need for paper materials, opportunities to watch the videos again and again, take the tests as many times as I wished, play games, look for sources, check websites, check for clickbaits, just wonderful!

Media Teaching Resources

Media Literacy for Teens.gr:

<https://medialiteracyforteensgr.blogspot.com/?m=1>

Facebook: <https://www.facebook.com/medialiteracyforteensgr/>

Common Sense Media: www.common Sense media.org

Organization for Social Media Safety:

<https://www.ofsms.org/programs-services/>

learningapps.com for active TEDx video micro-teaching

Kidshealth.org: <https://kidshealth.org/en/parents/social-media-smarts.html>

ACT for Youth:

<http://actforyouth.net/adolescence/toolkit/teens.cfm>

iCivics “News Literacy”:

<https://www.icivics.org/curriculum/news-literacy>

Digital Literacy Resources

Teaching Tolerance:

<https://www.tolerance.org/frameworks/digital-literacy>

InformED: <https://www.opencolleges.edu.au/informed/21st-century-skills/7-ways-teach-digital-literacy/>

International Literacy Association at

[www.ReadWriteThink.org](http://www.readwritethink.org/) - <http://www.readwritethink.org/>

Common Sense Education at www.common sense.org -
<https://www.common sense.org/education/lesson-plans/digital-literacy>



Thoughts | Reflection | Questions



“You, old woman, blessed with blindness, can speak the language that tells us what only language can: how to see without pictures. Language alone protects us from the scariness of things with no names. Language alone is meditation.”

Toni Morrison, Nobel Prize in Literature, 1993



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