Changing demands for reading ability and how teaching can help students meet them

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Outline

(1) Do the digital media and texts change the component processes of reading? Does the nature of reading change with changing media?

(2) Do digital media increase the demands on certain component processes, i.e. abilities in reading?

(3) What does research say about how to support students’ development of these components?

Outline

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</table>
Self (family) presentation

*TR+STR: HARALTR

Self (family) presentation

Hieroglyphs

Demotic

Greek

= p
= t
= o
= l
= m
= e
= s
Self presentation – digital media

Self presentation – digital media
Self presentation – digital media

Abilities under pressure
- The ability to decode novel names and words
  - even with a somewhat variable (non-standard) spelling
- Selection of relevant texts
- Critical evaluation of contents (e.g. monitoring)

The simple view of reading - expanded

- Activating word meanings
- Understanding sentences
- Making inferences
- Comprehension monitoring
- Understanding text structure

- Letter-sound knowledge
- Accurate word decoding
- Automaticity in decoding

(Oakhill, Cain, & Elbro, 2015)
Letter-sound correspondences

<table>
<thead>
<tr>
<th>Letter</th>
<th>Standard pronunciation</th>
<th>Conditional pronunciation (spelling pattern)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>[a] cat</td>
<td>[ɔː] cast, cart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ɛɪ] gate</td>
</tr>
<tr>
<td>c</td>
<td>[k] cat</td>
<td>[s] cement, cigar, cycle</td>
</tr>
<tr>
<td>o</td>
<td>[ɔ] cot</td>
<td>[ɑʊ] doubt, about</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[æʊ] though, dough</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ɔː] ought, thought</td>
</tr>
</tbody>
</table>

Letter-sound blending is tough for some students - but can be made significantly easier

*mas* > "mm" "aa" "ss"
or
*mas* > "mmaass"?

Gonzalez-Frey & Ehri (July, 2019). “Connected Phonation is More Effective than Segmented Phonation for Teaching Beginning Readers to Decode Unfamiliar Words” (at TripleSR annual meeting & manuscript submitted)

*fall* > "faall"?
Try alternative vowel!

Savage et al. 2018 in *Scientific Studies of Reading*
teaching “set for variability”)
Some students need much more guidance and practice to learn to use with letter-sounds and letter-sound patterns than others

“hib” > 𓐑 (selection of visual form)
“hib” > 𓐑 (production of visual form)

𓐑 > “hib” (selection of spoken form)
𓐑 > “hib” (production of spoken form)

(Litt et al, 2019; see also Litt, de Jong, van Bergen, Nation; 2013; 2014)

Poor readers have significant difficulties with the learning of new verbal material

(Litt et al, Quarterly J Experimental Psychology, 2019)
When to stop explicit teaching of decoding

(Juul, Poulsen & Elbro, 2014, Journal of Educational Psychology)

Dialogue, debate – digital media

Easy access to two billion distant "faces" without faces, and unknown "friends". One may ask: Who am I talking to?

A catfish? A fake or stolen identity created for the purposes of beginning a deceptive relationship.
Dialogue, debate – on paper

“Postcards and other materials were available for sending messages to teachers, parents, and other children. One (fortunately not typical) postcard read: "I will beat you up on the playground big head." The child wanted to make sure the child to whom he was sending the card would understand the message. Every word was correctly spelled after a lot of erasing and sounding out of words by child and tutor. (His tutor, however, eventually persuaded the boy not to send the postcard by reminding the child of his intended opponent's large size.)” (Juel, 1996, Reading Research Quarterly, p. 275)

Dialogue, debate – digital media

Purely virtual contacts and anonymity promote disrespect and bullying.

“You don’t belong here. Go back to your country ... “.
“Ar**ho**, idiot, stupid bi***.

61 percent of adult Danes do not participate in the debate on “social” media because of the abusive and bullying language. Hence, the risk of being bullied increases.

Teach empathy to writers?
Dialogue, debate – digital media

Skills under pressure

• For written on-line dialogues: Highly automated word encoding and decoding skills.

• The ability to distinguish between “faces”, “friends”, and the real people behind. Monitoring for reliability – read with care sometimes.

• A degree of thick skin, resilience, to verbal abuse. (For writers: a portion of empathy)

Receipt from a sale

The chief of guards Nebsemen sells to Hay:

an ox worth 120 deben
in exchange
for two jars of fresh fat,
five tunics,
a kilt and a skin.

(Deir el-Medina, Egyptian workers’ village, 1292-1070 B.C)
Due to the large shipments, we send you the wrong goods, I'm sorry. Because we are abroad, shipping back and forth will take 1-2 months. Shipping fee will be very expensive, there is simply not worth, please understand, I'm sorry. How about 15% refund?
Contracts – digital media

Skills under pressure

- Understanding descriptions of (material and immaterial) goods
- Judgement of reliability of seller and buyer (also a life skill).
- accept that some texts are for specialists only, (e.g. solicitors)?
Information acquisition

**Specialty Pizza**

<table>
<thead>
<tr>
<th>Spicy BBQ Chicken Pizza</th>
<th>Buffalo Chicken Fajita Pizza</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBQ chicken, paprika pepper, onion and parsley</td>
<td>Buffalo chicken, onion and pepper</td>
</tr>
</tbody>
</table>

**Temperature vs Time**

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Temperature (°Celsius)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>60</td>
<td>25</td>
</tr>
<tr>
<td>120</td>
<td>20</td>
</tr>
<tr>
<td>180</td>
<td>15</td>
</tr>
<tr>
<td>240</td>
<td>10</td>
</tr>
</tbody>
</table>

**Information acquisition – printed texts**

**Brexit** / Bank of England warns of 1 in 3 chance of recession in UK

Committee votes 9-o to keep interest rates at 0.75% as uncertainty drags down the UK economy

**Sterling** - Pound sinks to fresh low against dollar

**Brexit** - BMW boss urges Boris Johnson to abandon no-deal plan

**Live** - Johnson chairs cabinet’s key Brexit committee

**Nutrition Facts**

**Valeur nutritive**

Per 2 slices (71 g) pour 2 tranches (71 g)

- **Calories**: 180
  - **% Daily Value**:
    - **Fat**: 2.5 g (3 %)
    - **Saturated Fat**: 0.5 g (3 %)
    - **Trans Fat**: 0 g

- **Carbohydrate / Glucides**: 34 g
  - **% Daily Value**: 14 %
Information acquisition – digital media

@DavidGoldbergNY
Rumors stirring in the NYPD that Huma’s emails point to a pedophila ring and @HillaryClinton is at the center. #GoHillary #PodestaEmails23
(October 30, 2016)
Information acquisition

Who will make fake news go away?

Mark Zuckerberg?

The bloggers?

The internet police?

Information acquisition – digital media

A few new skills

Search engines: Much easier to do advanced searches with digital texts: point, click, pull. The quality of the each search predicts the quality of the combination of info from different sources.

Some skills under pressure

Because there are so many more texts now, and most have not gone through any quality control:

1. Judgement of relevance
2. Judgement of reliability

...
Four questions about a text on smoke alarms

1. Where would you place the smoke alarm in a two-bedroom flat if you have only one fire alarm?
(a) near where you spend most of the time (the lounge)
(b) near the main entrance (the escape route)
(c) near where you sleep (the bedroom)
(d) near in-flammable things (the kitchen).

2. Is it OK to put a fire alarm up on a wall?
(a) yes, but not above a radiator
(b) yes, about half-way between floor and ceiling
(c) yes, about a foot from the ceiling
(d) no, smoke rises towards the ceiling.

3. How often should a smoke alarm be tested?
(a) once a year
(b) once a week
(c) when you change the battery
(d) twice a year.

Good exam marks depend on both being able
- to use background knowledge and
- to override it

Table 6.3. Summaries of linear regressions: examination marks predicted by word decoding and components of reading comprehension (adults in O-level courses, \( n = 132 \))

<table>
<thead>
<tr>
<th>Model Step</th>
<th>( R^2 )</th>
<th>( R^2 ) change</th>
<th>( F ) change</th>
<th>( p ) change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Decoding and neutral questions</td>
<td>0.31</td>
<td>0.31</td>
<td>28.2</td>
<td>0.000</td>
</tr>
<tr>
<td>2 Surprising questions</td>
<td>0.36</td>
<td>0.05</td>
<td>10.2</td>
<td>0.002</td>
</tr>
<tr>
<td>3 Predictable questions</td>
<td>0.42</td>
<td>0.06</td>
<td>13.5</td>
<td>0.000</td>
</tr>
<tr>
<td>2 Predictable questions</td>
<td>0.39</td>
<td>0.09</td>
<td>18.1</td>
<td>0.000</td>
</tr>
<tr>
<td>3 Surprising questions</td>
<td>0.42</td>
<td>0.03</td>
<td>5.9</td>
<td>0.02</td>
</tr>
</tbody>
</table>

(Elbro & Arnbak, 2002)
Information acquisition – digital media

Skills under pressure
Because there are so many more texts, of highly variable quality, about less well-known topics

1. Assessment of relevance
2. Assessment of reliability
   - Compare with background knowledge and common sense, but be prepared to accept some surprising information.
   - Sourcing:
     - assessment of publication channel: official, edited, private?
     - assessment of author: relevant qualifications?
     - assessment of text: documentation, internal consistency, style
(See: Ivar Bråten (Oslo), Jean-Francois Rouet (Poitiers), Tobias Richter (Kassel))

Information acquisition – digital media

Skills under pressure
Because there are so many more texts, of highly variable quality, about less well-known topics

1. Assessment of relevance
2. Assessment of reliability
3. Dealing with multiple texts
Use graphic organisers to compare texts

(1) Analysis of the topic, e.g., vikings -> aspects: food, clothes, houses, weapons, organisation, where, when?) (Use tree structure or mind map?)

(2) The texts (list?)

(3) Set up diagram and fill it in as you read; revise diagram as needed.

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Text 1</th>
<th>Text 2</th>
<th>Text 3</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where, when?</td>
<td></td>
<td></td>
<td></td>
<td>&gt;</td>
</tr>
<tr>
<td>Food</td>
<td></td>
<td></td>
<td></td>
<td>&gt;</td>
</tr>
<tr>
<td>Weapons</td>
<td></td>
<td></td>
<td></td>
<td>&gt;</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td>&gt;</td>
</tr>
</tbody>
</table>

Information acquisition

Skills under pressure
Because there are so many more texts, of highly variable quality, about less well-known topics

1. Assessment of relevance
2. Assessment of reliability
3. Dealing with multiple texts
4. Dealing with less well-known topics: vocabulary
Information acquisition

Animal Facts

Check out our awesome range of animal facts for kids and learn some fun trivia about our friends in the animal kingdom.

Fun Platypus Facts for Kids

Check out our range of fun platypus facts for kids. Learn where the platypus lives, what they eat, why scientists first thought drawings of the platypus were a hoax and much more.

Read on and enjoy our interesting information about platypuses.

• The platypus is a semi-aquatic mammal that has a very unusual appearance, it is duck-billed, has a beaver-like tail, lays eggs, has otter-like fur and webbed feet.
• ...
• ...


Understanding words through morphological analysis

<table>
<thead>
<tr>
<th>semi-</th>
<th>aqua-tic</th>
</tr>
</thead>
<tbody>
<tr>
<td>semi-finals</td>
<td>aquar-iun</td>
</tr>
<tr>
<td>semi-circle</td>
<td>sub-aqua-tic</td>
</tr>
<tr>
<td>semi-narium</td>
<td>aqua-marine</td>
</tr>
<tr>
<td>semi-colon</td>
<td>aqua-vit</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

Olive oil is oil made from olives and mushroom oil is made from? baby oil? waste oil? sun oil?
Learning words through morphological analysis

un#read#able – il#leggi#bile
in#de#cifr#able – in#de#cifr#able

unputdownable – ?

unitasking (uni#tasking, multi#tasking, zero#tasking)

Watch (follow?) these researchers:
- Holger Juul, Anne-Mette Veber Nielsen, and Hanne T. Daugaard (UCPH)
- Anna S. Gellert (UCPH)
- Hélène Deacon (Dalhousie University, Canada)
- Pete Bowers (videos with 1st graders)
Amanda P. Goodwin & Soyeon Ahn (2013) in *Scientific Studies of Reading*

Information acquisition

Skills under pressure
Because there are so many more texts, of highly variable quality, about less well-known topics

1. Assessment of relevance
2. Assessment of reliability
3. Dealing with multiple texts
4. Dealing with less well-known topics: vocabulary
5. Dealing with less well-known topics: mental model
An unfamiliar scenario (model)

In a special game of cards, each card has a number on one side and a letter on the other. At the beginning of the game, some cards face the number side up, while other cards face the letter side up. The participants have to verify this rule: *all cards with an even number on one side must have a vowel on the other.*

*Which card(s) must the participants turn over?*
- Cards showing an even number.
- Cards showing a vowel.
- Cards showing an odd number.
- Cards showing a consonant.

(Wason's selection task)

A more familiar scenario (model)

Anna has a pile of old postcards which face either the picture side up or the text side up. The pictures show whether the cards were sent from Denmark or from abroad. The text tells whether the card was sent from her parents or from her friends. One day Anna wants to verify this rule: *all cards from her parents were sent from Denmark.*

*Which card(s) must Anna turn over?*
- Cards showing text from parents.
- Cards showing pictures from Denmark.
- Cards showing text from friends.
- Cards showing pictures from abroad.
Graphic organizers can structure the unfamiliar

cards with an even number on one side must have a vowel on the other.

<table>
<thead>
<tr>
<th></th>
<th>Vowel</th>
<th>Consonant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Even</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odd</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which cards does the rule apply to?
Which cards are OK?
Which cards are not OK? We must spot them!
Use graphic organisers to support comprehension - provide a standard mental model of structure

There are many reasons to buy organic food rather than conventionally produced food. The most commonly stated reason is that organic foods are thought to be healthier. However, this is rarely found in proper studies of comparable products. The main difference is that organic foods are produced in ways that are less stressful for the animals and environments involved. Less intensive farming costs more, so organic food is usually more expensive.

Yes, logical text structure can be taught with graphic organizers – even to 2nd graders

Five common structures:
- sequence
- comparison
- causation
- description
- problem–solution

(Williams et al., 2016, Journal of Educational Psychology)
**Information acquisition**

**Skills under pressure**
Because there are so many more texts, of highly variable quality, about less well-known topics

1. Assessment of relevance
2. Assessment of reliability
3. Dealing with multiple texts
4. Dealing with less well-known topics: vocabulary & morphology
5. Dealing with less well-known topics: knowledge & graphic organisers

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**Literacy functions – changing demands on readers**

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<th>New demands</th>
<th>Increased pressure on components of reading</th>
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<td>Dialogue, debate</td>
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<td>Monitoring of reliability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abuse resistance</td>
</tr>
<tr>
<td>Contracts</td>
<td></td>
<td>More small print</td>
</tr>
<tr>
<td>Information acquisition</td>
<td>Search functions</td>
<td>Monitoring of relevance and reliability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Combine multiple sources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unfamiliar words and topics</td>
</tr>
</tbody>
</table>