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# How does Information Pollution Challenge Children's Right to Information Access?

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A vibrant blue background filled with various white icons representing digital technology and connectivity. In the center, a hand with a yellow sleeve points to a large green circle containing a white Wi-Fi symbol. This central node is connected by white lines to several other circular nodes, each containing a different digital device or concept: a red circle with a monitor, a purple circle with a laptop, a blue circle with a smartphone, a purple circle with a mobile phone, a green circle with a smartphone, a purple circle with a mobile phone, a red circle with a laptop, a purple circle with a laptop, a red circle with a mobile phone, and a blue circle with a laptop. Surrounding these nodes are numerous other icons: gears, a database cylinder, speech bubbles, a microwave, a play button, a lightbulb, a camera, a shopping bag, a house, an envelope, a Wi-Fi router, a bar chart, a camera on a tripod, a folder, a magnifying glass, a cloud with a Wi-Fi symbol, a car, a graduation cap, a clipboard, and a smartphone. The overall theme is a interconnected digital ecosystem.

# A digital ecosystem

# Resources all around

Children have access to resources with just one click (or one word)!



# But... not everything is genuine

Content children are exposed to can impact their development



# Children's right to information access



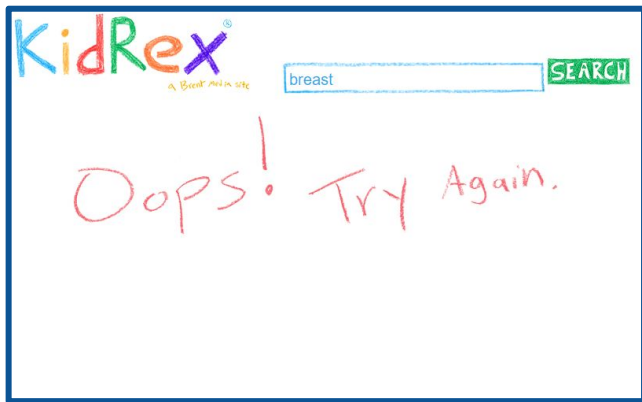
... information that they can trust and understand



# Search engines & information access

Search engines curate the resources searchers are exposed to

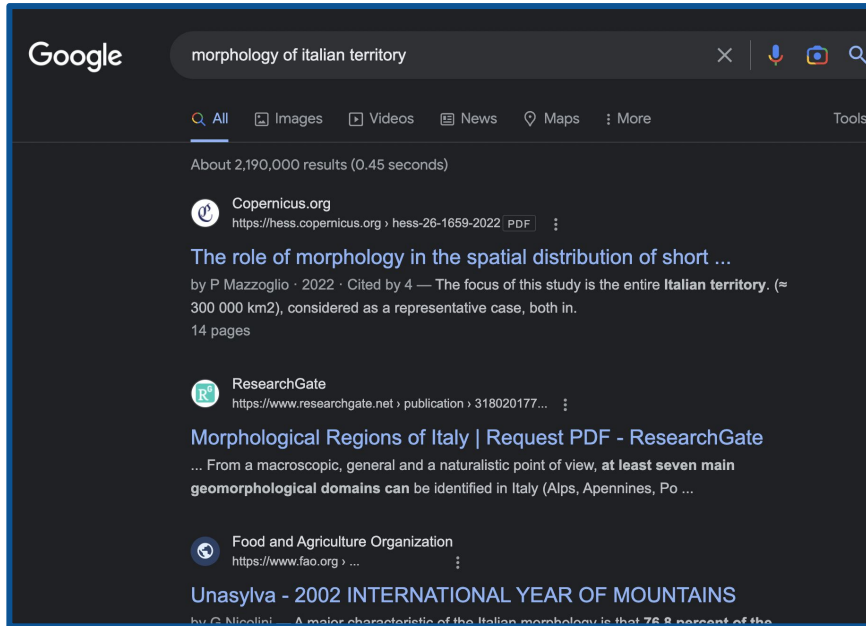




Resources are nowhere  
to be found

# Safe search

Sometimes the filters fail...



Resources can be misleading & challenging to read

# (Safe) search

Sometimes retrieval  
and ranking fail...

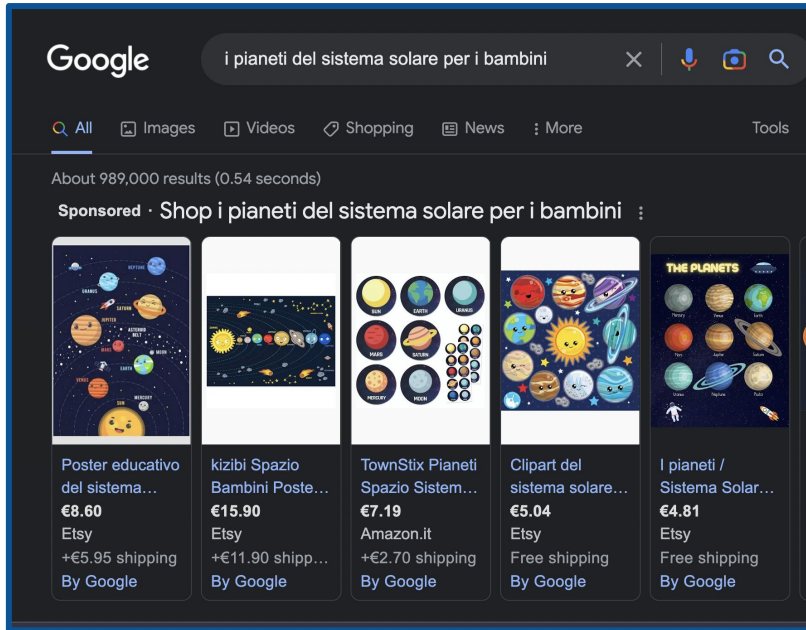




Resources can be imprecise & even non-relevant

# (Safe) search

Sometimes retrieval  
and ranking fail...



Resources can turn out to be ads

(Safe) search

Sometimes retrieval  
and ranking fail...

# What happened?

- Regardless of the context of the search, children are exposed to **harmful**, **distracting** content
- Safe search filters are availability, but can be **myopic** or lead to **overfiltering**
- Genuine information is **challenging** to locate or discern

*It is urgent to consider the presence or introduction into the websearch ecosystem of content with harmful or poisonous effect:*

**Pollution**

# Search engines & information access

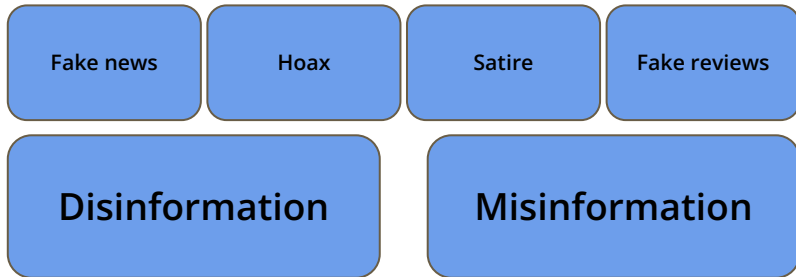
*Search engines can be a valuable aid for children, but...  
how to ensure a safe and positive online experience?*



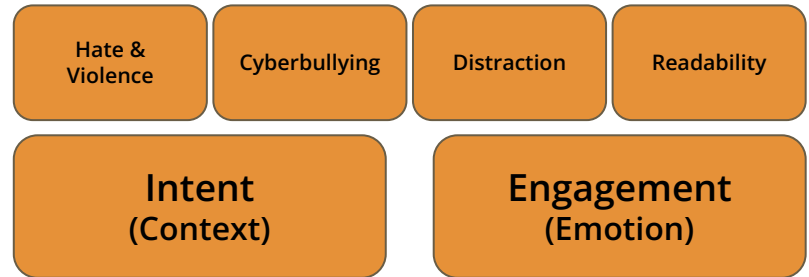
*Information pollution?*

# What is information pollution?

Contents contaminated intentionally or sometimes unintentionally, which in turn can negatively impact society



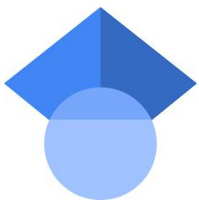
Guidance from teachers also identify other factors that can be detrimental to children



## Information Pollution

# Where do we start from?

Needs, challenges and open paths to address information pollution hindering children's information access



Literature review



Lessons learned from ongoing work on children's search



*Definition, Understanding, & Implications*

# The importance of considering the context

*Acknowledging that there is not “one-size-fits-all” when it comes to information access*

- The **goal** of the search activities and the environment in which these take place
- The **motivation** and intent of the search
  - Is the inquiry task assigned by teachers, is a component of a school assignment, is prompted by a personal interest falling under the leisure dimension, or is a combination of all of the above?
- Family **background, age, personality, expectations, skills** can affect children's ability to critically examine retrieved material



**Training** children by offering them the right support at the right time

# The importance of good design

## *Acknowledging children as the “protagonists”*

- Account for the different roles children during collaborative design
- Consider children’s mental models (expectations, barriers, misconceptions)
  - They are the expert of how and why their peers search for education and leisure
- Include the expert in the loop to understand the natural scaffolding needed to deal with pollution



Technology and literacy are a must for children to safely and independently explore the search space



# The importance of (re-thinking) relevance

## *Acknowledging the need to go beyond the traditional view of “relevance”*

- Children naturally **trust** (search) technology and find challenging to **discern** relevant vs. irrelevant
- **Emotions** in titles and snippets trigger a satisfying search experience in children
  - “individuals who are better able to disregard the emotionally charged content of such items, better equipped to assess the veracity of the information”



Extending relevance to consider **readable** and **reputable** sources with an **emotional flavour**

# The importance of good guideline

*Acknowledging that technology cannot replace the human-in-the-loop, but helps (and could be better)*

- Children should be prepared to access online resources **in the wild**
  - Few are able to identify credible websites correctly
  - Most are unable to verbalise ways to examine credibility
- Caregivers and teachers should foster **critical thinking** among children
- Curricula on **digital and media literacy** across all school **grades** should be better designed



**Mentoring & monitoring** can ease information discovery and avoid information pollution

# Some lingering thoughts



*To address children's right to information access we need to account for the multiple facets of information pollution*



*Tackling information pollution is a multidisciplinary effort, one that also needs to involve children's views*

# Some lingering thoughts



*There is a need for search/information literacy*



*There is a need to train the trainers*

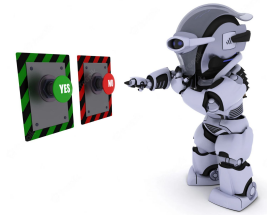


*There is a need for new (smart/adaptive) technology (algorithms and interfaces)*

# Some lingering sets



*Lessons learned from children as main stakeholder could guide future research pertaining other user groups*



*Lessons learned could inspire other explorations, as information pollution is not restricted to search engines*

# Let's continue the conversation

Our aim remains to:

- Spotlight different facets of **information access** technology
- Outline challenges and opportunities for technology to provide the **right support** and offer **scaffolding** at the **right time** to help children develop the competences they need to **actively participate** in our digitally rich society

**Reach out!**

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