Information ethics literacy for self-directed multimodal learning through open educational resources

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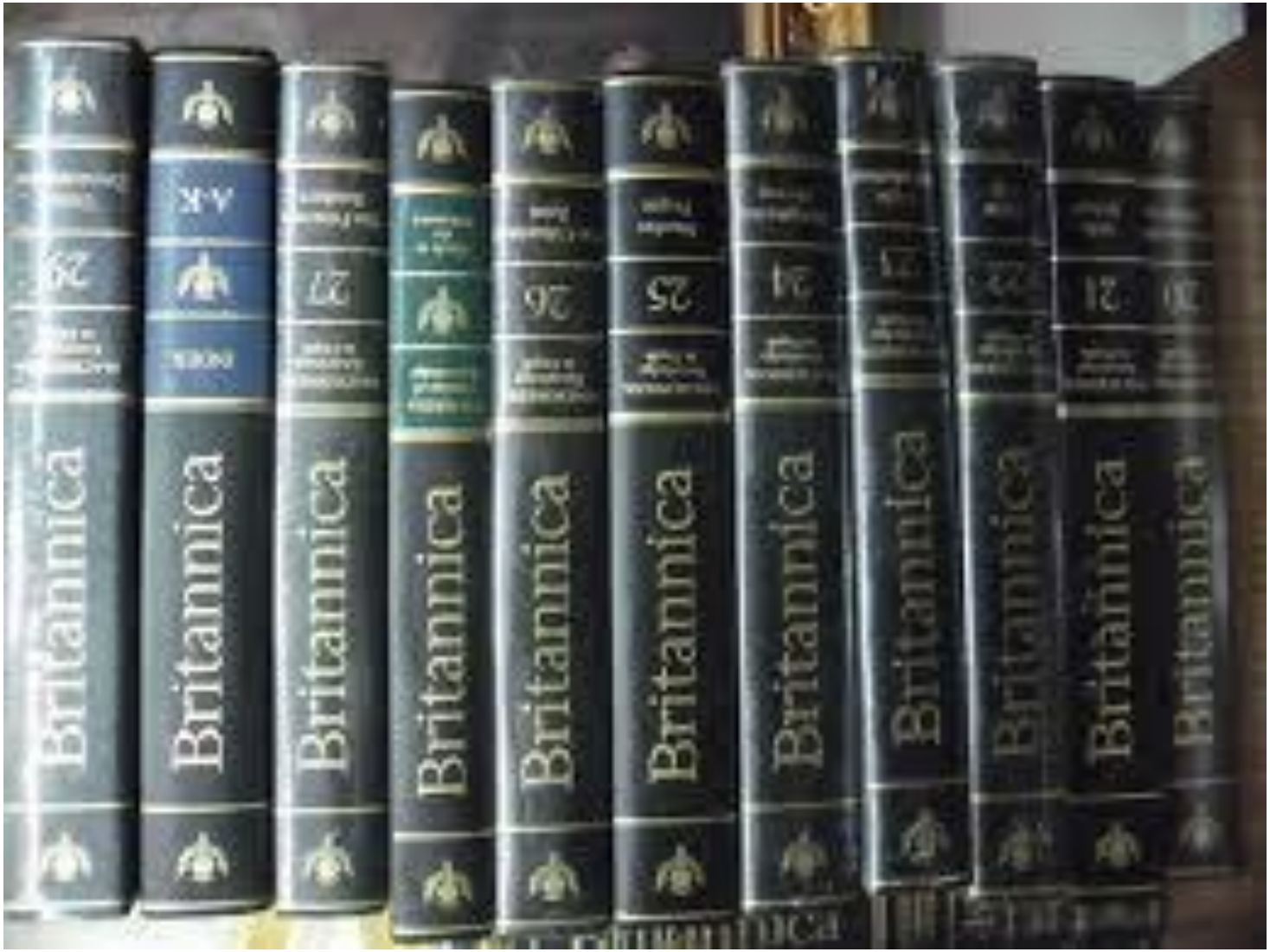
North-West University

ICIL – 26 September 2019

NWU® | *Self-Directed Learning*

United Nations Educational, Scientific and Cultural Organization

UNESCO Chair on Multimodal Learning and Open Educational Resources
North-West University, South Africa



https://commons.wikimedia.org/wiki/File:Encyclopedia_Britannica_series.JPG

How ethical are we in our information interactions in a multimodal world?

The New York Times

'We're at War': A Covert Social Media Campaign Boosts Military Rulers

The New York Times, 6 September 2019
https://www.nytimes.com/2019/09/06/world/middleeast/sudan-social-media.html

"Days after Sudanese soldiers massacred pro-democracy demonstrators in Khartoum in June, an obscure digital marketing company in Cairo began deploying keyboard warriors to a second front: a covert operation to praise Sudan's military on social media..."

The Sun, 12 September 2019
https://www.thesun.co.uk/news/9912494/teen-trolled-social-media-fake-accounts/

"On one day alone, she reported she had received over 100 messages.
"During the investigation, it was found that all of the messages had actually been sent with her knowledge from a fake account, in an attempt to get revenge."

TheScientist
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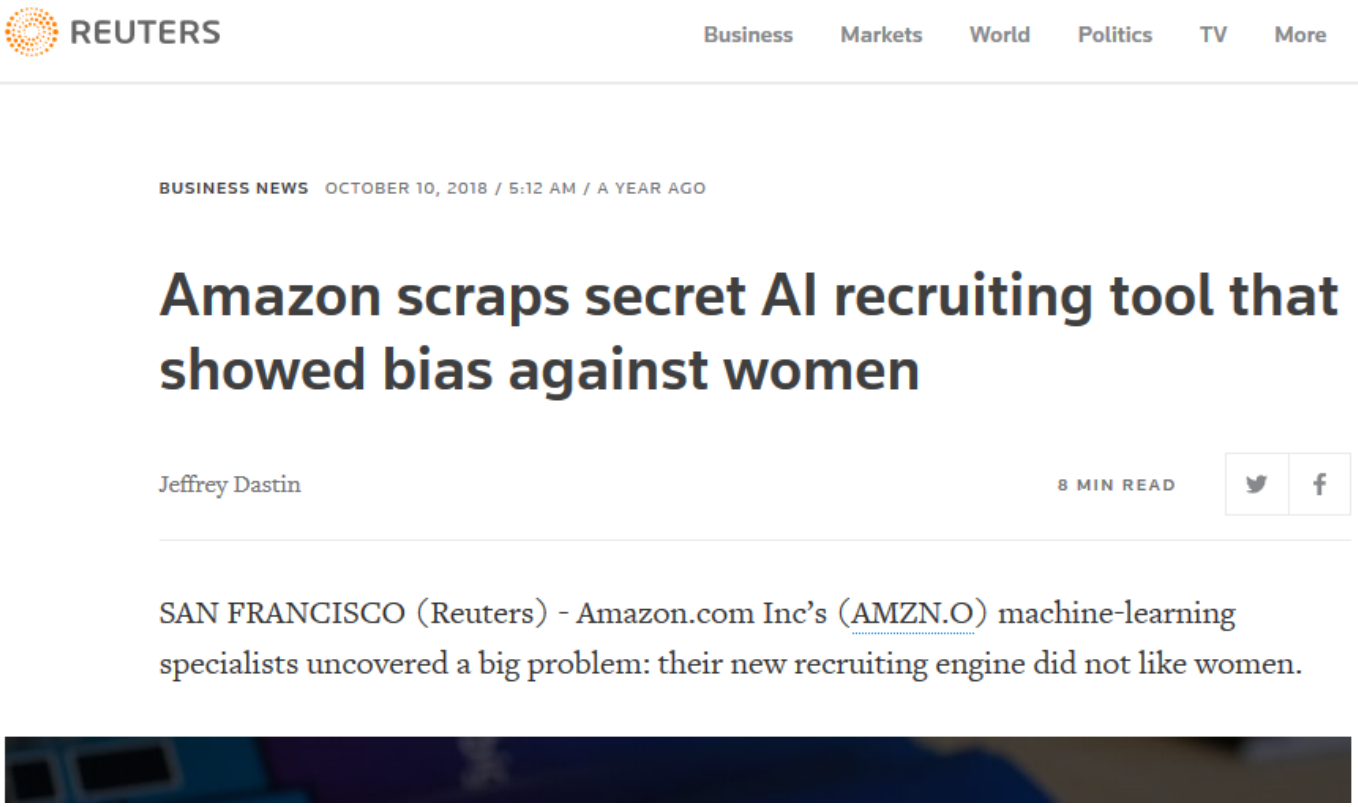
NEWS & OPINION MAGAZINE SU

Home / News & Opinion

University of Kentucky to Fire Professors for Research Misconduct

The institution completed an internal investigation into two professors and a staff researcher for duplicating images and fudging data.

The Scientist, 26 August 2019
https://www.the-scientist.com/news-opinion/university-of-kentucky-to-fire-professors-for-research-misconduct-66352
"The committee found ‘several examples of falsified or fabricated data that were among numerous irregularities in seven grant proposals and at least 13 scholarly papers sampled from their work,’ according to the UK statement."



Reuters, 10 October 2018
https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G

"Amazon.com Inc's machine-learning specialists uncovered a big problem: their new recruiting engine did not like women."

AUGUST 12TH 19__DAN ROBITZSKI__FILED UNDER: ARTIFICIAL INTELLIGENCE

Self-Defeating

Artificial intelligence algorithms meant to detect and moderate hate speech online, including the Perspective algorithm built by Google, have built-in biases against black people.

Scientists from the University of Washington found alarming anti-black bias in the AI tools that are supposed to protect marginalized communities from online abuse, according to *New Scientist* — demonstrating how a well-intentioned attempt to make the internet safer could discriminate against already-marginalized communities.

RECURSIVE RACISM

GOOGLE'S HATE SPEECH-DETECTING AI IS BIASED AGAINST BLACK PEOPLE

Futurism, 12 August 2019
https://futurism.com/the-byte/google-hate-speech-ai-biased

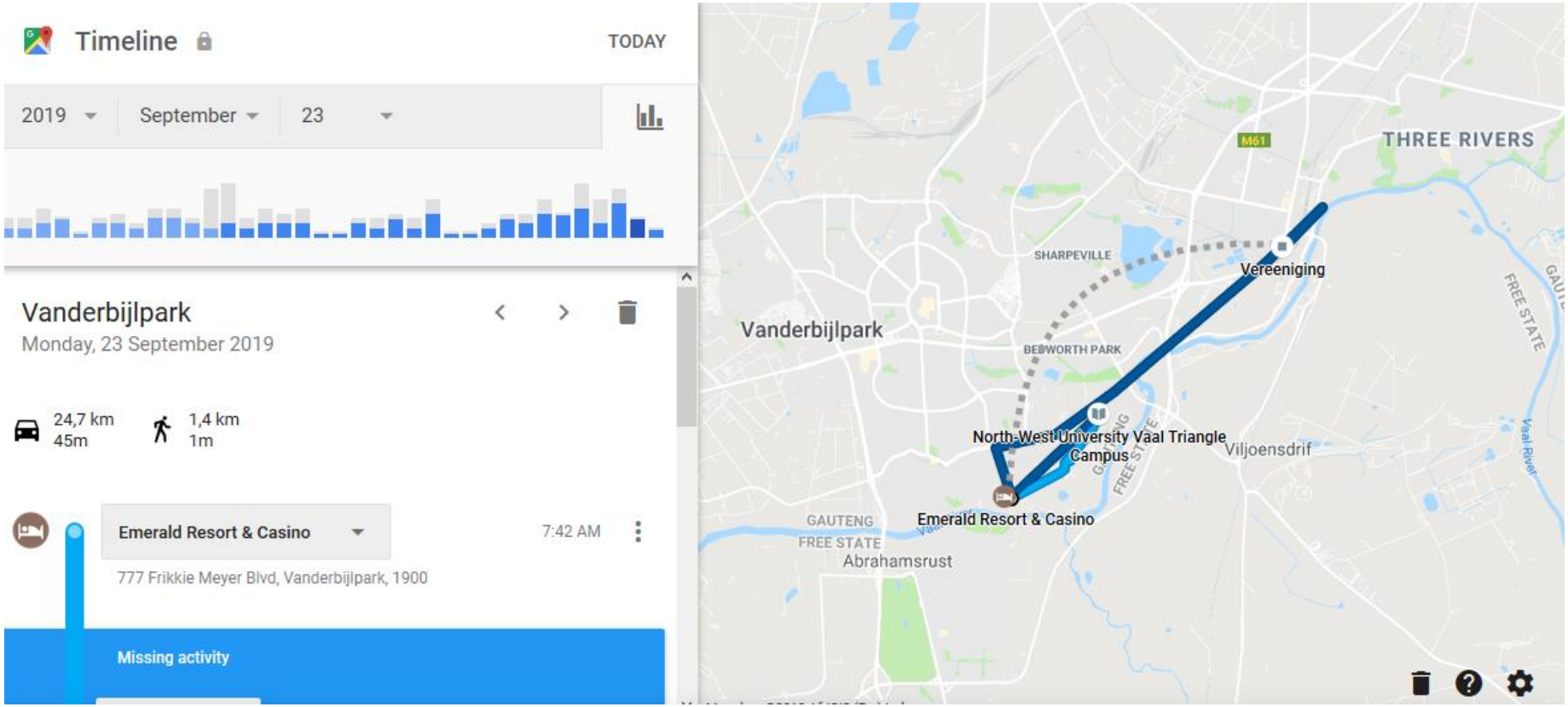
"They found that the people responsible for labeling whether or not a tweet was toxic tended to flag tweets written in African-American Vernacular English (AAVE) as offensive — a bias that then propagated down into the algorithms themselves."

The Dark Side Of Artificial Intelligence

Frida Polli Former Contributor ⓘ
Tech

Forbes, 5 December 2017
https://www.forbes.com/sites/fridapolli/2017/12/05/the-dark-side-of-artificial-intelligence/#d69345612614

"If you're a non-native English speaking student and plagiarize part of an essay, Turnitin (a plagiarism detection software) will be more likely to detect your cheating than it will native speakers."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TODAY
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Vaal River

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Checked Out Items | Modify PIN | Preferred Searches | My Lists

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Result Page 1 2 3 4 5 6 7 8 Next

Reading History (Records 1-50 of 357)

Mark	Title	Author	Checked Out
☐	Open educational resources : a catalyst for innovation / Dominic Orr, Michele Rimini and Dirk Van Damme.	Orr, Dominic, author.	15-08-2019
☐	Researching ethically across cultures : issues of knowledge, power and voice / edited by Anna Robinson-Pant and Nidhi Singal.		15-08-2019

http://www.peakpx.com/625124/old-paint-scratch-wall-large-group-of-animals-insect

Information > information literacy

- UNESCO:
  Information literacy is a means to "**empower people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals**" (Alexandria Proclamation; definition adopted by the High Level Colloquium on Information Literacy and Lifelong Learning in November 2005).

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Information literacy

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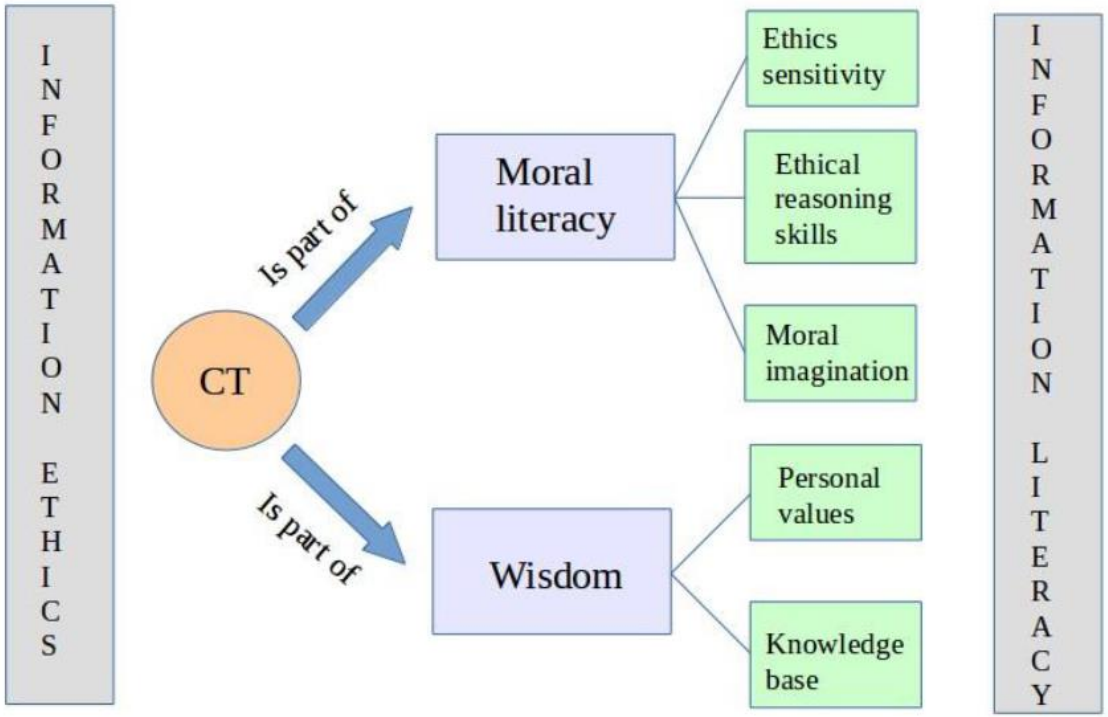
- UNESCO:
  "INFORMATION LITERACY means the **set of skills**, **attitudes** and **knowledge** necessary to know when **information** is needed to help **solve a problem** or make a **decision**, how to **articulate** that information need in searchable terms and language, then **search** efficiently for the information, **retrieve** it, **interpret** and **understand** it, **organize** it, **evaluate** its credibility and authenticity, **assess** its relevance, **communicate** it to others if necessary, then **utilize** it to accomplish bottom-line purposes; Information Literacy is closely allied to **learning to learn**, and to **critical thinking**, both of which may be established, formal educational goals, but too often are not integrated into curricula, syllabi and lesson plan outlines as discrete, teachable and learnable outcomes…"

Information literacy > information ethics

- "Information literacy is the set of integrated abilities encompassing the **reflective discovery** of information, the **understanding** of how information is **produced** and **valued**, and the **use** of **information** in **creating new knowledge** and participating **ethically** in communities of learning" (ACRL, 2015:8).
- "**Information literacy is an integral part of learning, and a key to lifelong learning**." (Bond, 2015:15).

Information literacy > information ethics literacy

- Františka Tomoriová (2016) draws a clear link between information literacy and information ethics.



(Tomoriová, 2016:93)

http://www.thebluediamondgallery.com/dictionary/ethics.jpg

Defining Information Ethics

- UNESCO (2019):
  "Information ethics is concerned with ethical, legal and societal aspects of using information and information and communication technologies".

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Defining Information Ethics

- "[I]nformation actually increases **uncertainty** rather than reducing it in the early stages of extensive information seeking" and "[i]nformation need changes as the person progresses through the stages of the information search process" (Kuhlthau, 2013:93).
- "The cut-and-paste tone of extracting information causes students to view academic information seeking as merely **lifting** and **rewording** something off the source page or the Internet" (Kuhlthau, 2013:94).

Information Ethics

- The field of information ethics is dedicated to the **critical reflection** on the **ethical values** and **practices** related to the **production**, **storage**, and **distribution** of **information**, as well as the ethical **implications** of the **information systems**, **infrastructures**, and **policies** increasingly embedded in modern culture and society (Zimmer, 2010:18)

Information Ethics

- According to Britz (2013:3) information ethics includes:
  - the right to privacy,
  - the right of access to information,
  - the right to intellectual property and
  - the quality of information.
- Information ethics literacy?

Levels of Information Ethics

- (1) **Macro level**: The broad social and environmental issues attributed to the features of the Information Age (like the Digital Divide and e-Waste),
- (2) **Meso level**: Questions arising in the sphere of public policy, discourse and regulation of information (like Censorship), and
- (3) **Micro level**: The day-to-day handling of information throughout the Information life-cycle (like Plagiarism).

(Le Sueur *et al.*, 2013:40)

Tshwane Declaration on Information Ethics in Africa

- African Information Ethics Conference: Ethical Challenges in the Information Age - 7 Feb. 2007
- Principles:
  - All people have equal rights as set out in the Universal Declaration of Human Rights. To exercise their human rights people need and should have **access to information** as well as the **ability to benefit** from it.
  - Information should be recognized as a tool for promoting the goals of **freedom**, **democracy**, **understanding**, **global security**, **peace** and **development** and should be used as such.
  - Information should be made **available**, **accessible** and **affordable** across all **linguistic** groups, **gender**, differently **abled**, **elderly** and all **cultural** and **income** groups.
  - World-wide, the centrality of information is manifested as nations move towards Information and Knowledge Societies. To make the global Millennium development goals a reality, **Africa** should be a key player in this movement.
  - Policies and practices regarding the generation, dissemination and utilisation of information in and about Africa should be grounded in an Ethics based on universal **human values**, **human rights** and **social justice**.
  - **Indigenous knowledge** and **cultural diversity** is a valuable contribution Africa can make to the global Information Society. It should be preserved, fostered and enabled to enrich the world body of knowledge.

South African and African Information Ethics

- A number of authors describe how information ethics can be viewed with a South African and African lens (Capurro, 2007; Frohmann, 2007).
- From a study by Ndwandwe (2009:v) it is evident that in South Africa information ethics is mostly taught as "in the content of other modules and not as a stand-alone module".

Learning Information Ethics

- Britz (2013) states that: "Ethical behaviour therefore does not come naturally; we need to learn it. People need to develop insight into their own self-interest and evidently their own moral contradictions."


(CC0) https://picryl.com/media/waves-circles-water-wave-nature-landsca
684bed

Diffraction

- Barad (2007:28) describes **diffraction** as "the way waves combine when they overlap and the apparent bending and spreading out of waves when they encounter an obstruction."(Barad 2007: 28).
- With diffractive practises the focus is, similar to diffractive methodology (Barad, 2007:30), on using one text to interpret another totally different, but **intersecting** text.

Information ethics literacy

Open education practices

Multimodal self-directed learning

Diffraction

- Donna Haraway (in Barad, 2007:29) suggests that "diffraction can serve as a useful counterpoint to reflection: both are optical phenomena, but whereas reflection is about mirroring and sameness, diffraction attends to patterns of difference".
- The focus, as it is in this study, on **entanglements** and **differences** rather than similarities.
- Practically "diffraction involves **reading insights** through one another in ways that help illuminate differences as they emerge: how different differences get made, what gets excluded, and how those exclusions matter" (Barad, 2007:30).

Diffractive reflection

- What affordances would information ethics have in terms of resource selection for self-directed multimodal learning?
- How would openness and open pedagogy influence information ethics in terms of self-directed multimodal learning?

Self-directed learning (SDL)

- **Self-directed learning** can be defined as an approach to learning where students take charge of learning (cf. Knowles, 1975:15).
- Knowles (1975:18) describes the phenomenon as

> "**a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes**".

Self-directed learning (SDL) and OER

- The distinction between formal and informal learning can also be drawn regarding the use of OER where they can be used informally through "**self-organized learning**" (Ponti, 2014:155) or by means of personal learning environments (PLEs) or more formally incorporated within a learning management system (LMS).
- Digital media and by implication **OER blur the lines** between "formal, informal and non-formal education, and between producers and consumers of knowledge" (Ponti, 2014:156).

Self-directed learning (SDL) and information literacy

- "Gaining skills in information literacy multiplies the opportunities for students' **self-directed learning**, as they become engaged in using a wide variety of information sources to expand their knowledge, ask informed questions, and sharpen their critical thinking for still further self-directed learning". (ALA, 2000:5).
- In this regard, Kuhlthau (2013:95) proposes a "holistic approach to information literacy that prepares students for the reflective thinking that leads to wise information seeking and use in the dynamic global information environment".

Self-directed learning (SDL)

- Self-directed learning requires:
  - Problem solving (Guglielmino & Guglielmino, 2001)
  - Collaboration (Garrison, 1997; Gitsaki, 2005)
  - Resource selection (Knowles, 1975)
  - Critical thinking (Garrison, 1997; Guglielmino & Guglielmino, 2001)
  - Motivation (Garrison, 1997; Gitsaki, 2005)
  - Initiative (Guglielmino & Guglielmino, 2001)
  - Self-monitoring (Garrison, 1997)
  - Self-management(Garrison, 1997)
  - Metacognition (Tsai et al., 2018)
  - Integration of thought (Guglielmino & Guglielmino, 2001)
  - Integration of resources (Guglielmino & Guglielmino, 2001)

Self-directed learning (SDL)

- In terms of resource selection the following literacies have been identified (Olivier, 2019):
  - Information literacy (Eshet-Alkalai, 2004; King, 2011; Summey, 2013)
  - Media literacy (Summey, 2013)
  - Critical literacy (Perry, 2012)
  - Critical media literacy (Mirra et al., 2018)

Multimodal learning

- Multimodality can also – as it is already used in literature – be found at three different levels that act interactively:

Multimodal communication

- Transfer of information by means of different modes: verbal (spoken and written) and nonverbal (pictures, emojis, sounds, animations, gestures)

Multimodal learning/teaching

- Learning/teaching face-to-face, using written or graphical printed resources, text books, technologies, OER, etc.
- More than one sensory mode is also implied

Multimodal delivery

- Combining contact, distance and hybrid modes of delivery


Open
Educational
Resources

Open Educational Resources (OER)

- The William and Flora Hewlett Foundation (2018) defines OER as "**teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions**".
- Revised definition as proposed by UNESCO member states representatives on 27 May 2019: "**Open Educational Resources (OER) are learning, teaching and research material in any format and medium that resides in the Public Domain or are under the copyright that has been released under an open license that permits no-cost access, reuse, repurpose, adaptation and redistribution by others**".

Open Educational Resources (OER)

- An important aspect of OER is that they should not only be considered as resources to be **accessed** and **used** but also as resources **generated** by students themselves.
- This aspect ties in with "a more equitable, transformative pedagogy around technology through the shift *from* knowledge transmission through instruction to **knowledge production** through construction" (Kapitzke, 2000, p. 227).

Open Educational Resources (OER)

- In terms of open pedagogy, Bronwyn Hegarty identified eight attributes of this pedagogy. According to Hegarty (2013:5), the attributes are summarised as follows:
  - Participatory technologies: use for interacting via web 2.0, social networks and mobile apps;
  - People, openness, trust: develop trust, confidence and openness for working with others;
  - Innovation and creativity: encourage spontaneous innovation and creativity;
  - **Sharing ideas and resources: share ideas and resources freely to disseminate knowledge**;
  - Connected community: participate in a connected community of professionals;
  - **Learner generated: facilitate learners' contributions to OER**;
  - Reflective practice: engage in opportunities for reflective practice; and
  - Peer review: contribute to open critique of others' scholarship.

Demiurgic actions

- A very pragmatic example within the open context is the concept of disposable assignments.
- In this regard, David Wiley (2013) criticizes assessments that are disposable and that 'add no value to the world'.
- As a counter measure against disposable assignments Wiley (2013) proposes an **open pedagogy process**.

What about the information ethics of self-directed multimodal learning through open educational resources?

Resource selection

Resource use

Resource creation

Multimodal context

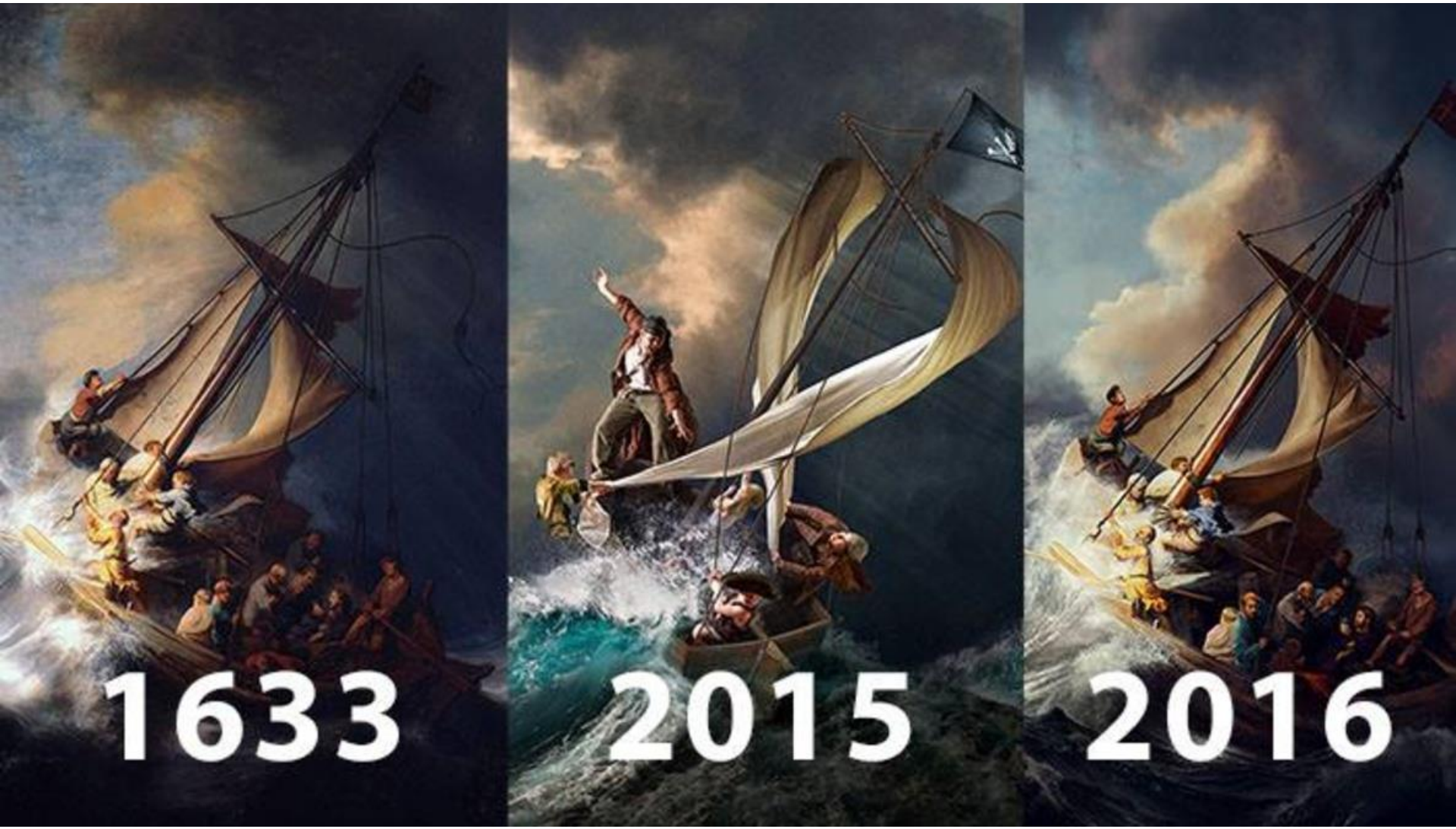
https://www.flickr.com/photos/billkerr/200721567

Resource selection

- Babik (2012:18): "Censorship means the purposeful exclusion of information from circulation based on decisions which are justified by religious, political, moral or other reasons."
- Covert censorship: journals not open access, library subscriptions, search engine and database rankings

Resource use

- Understanding of licenses of works consulted
- Ethical use of sources > plagiarism > self-plagiarism
- Translation as plagiarism
- Incorrect inferences
- Cryptomnesia / Recollection



https://fstoppers.com/composite/these-photos-show-thin-lines-between-coincidence-plagiarism-and-inspiration-139597

Resource creation

- Intellectual property and copyright protection; illegal sharing.
- Licensing
- In terms of MOOCs, Bond (2015:15) state that "[d]evelopers should be prepared to support learners in information literacy development if they want to increase participation and persistence".

Multimodal context

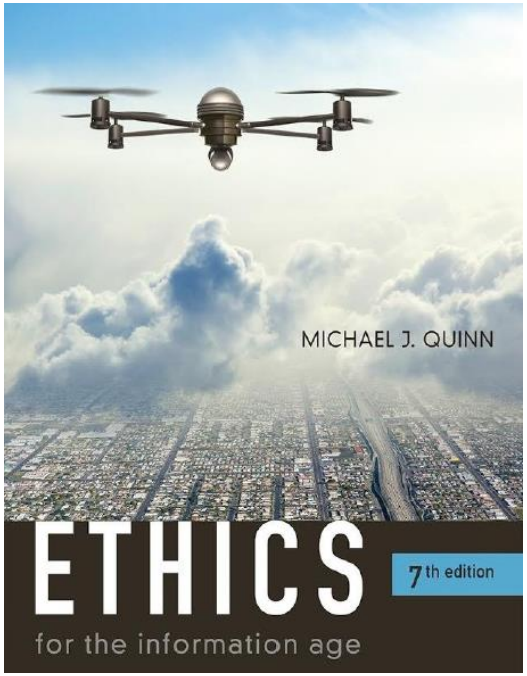
- Access to information
- Privacy issues
- Data collection > covert data collection

Variables

- What has an effect on information ethics in a context of self-directed multimodal learning through open educational resources?

Physiology

- According to Michael J. Quinn "quick access to information through our use of Web browsers, Twitter, and texting, neurons inside our brains release dopamine, producing a **desire to seek out additional information**, causing further releases of dopamine, and so on".



Physiology

Neuron
Article

Midbrain Dopamine Neurons Signal Preference for Advance Information about Upcoming Rewards

Ethan S. Bromberg-Martin[1,2] and Okihide Hikosaka[1,*]
[1]Laboratory of Sensorimotor Research, National Eye Institute, National Institutes of Health, Bethesda, MD 20892, USA
[2]Brown-NIH Graduate Partnership Program, Department of Neuroscience, Brown University, Providence, RI 02906, USA
*Correspondence: oh@lsr.nei.nih.gov
DOI 10.1016/j.neuron.2009.06.009

SUMMARY

The desire to know what the future holds is a powerful motivator in everyday life, but it is unknown how this desire is created by neurons in the brain. Here we show that when macaque monkeys are offered a water reward of variable magnitude, they seek advance information about upcoming rewards. Here we define "advance information about upcoming rewards" as a cue that is available before reward delivery and is statistically dependent on the reward outcome. We do not mean information in the quantitative

Depth of searching

SMARTNEWS *Keeping you current*

Academics Write Papers Arguing Over How Many People Read (And Cite) Their Papers

Studies about reading studies go back more than two decades

"as many as 50% of papers are never read by anyone other than their authors, referees and journal editors"

https://www.smithsonianmag.com/smart-news/half-academic-studies-are-never-read-more-three-people-180950222/?no-ist

Access and computer anxiety

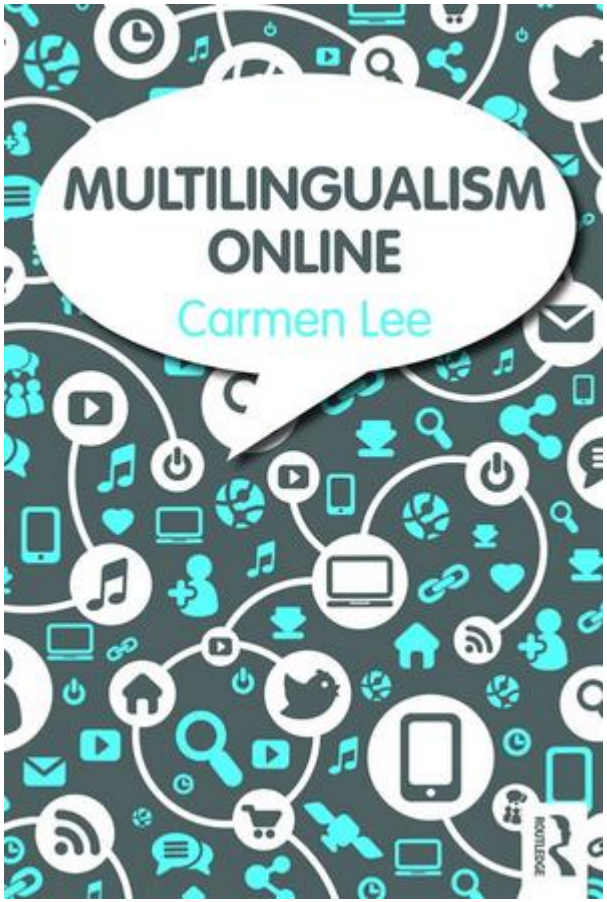
- Verbatim responses from students from an earlier empirical investigation (Olivier, 2017):
  - *The problem that I face when using electronic gadgets is **fear**. I have that fear to say I dont know how to use thise thing. **What if something wrong happens?** What am I going to do? [3]*
  - *Computer based on spelling checkers gives me a huge problem and when I use it I dont use any of the mentioned I just write and submit my work because of **the computer is a nightmare of my life**. [18]*
  - *I am **scared** to use electronical resource. Because I am from the typical township schools with no or limited technology the little one we had was only for learners who took computer as a subject. [19]*
  - *If I had to switch off something I would definitely switch off the electronic media because I am **dead scared** of it. [F5]*
  - *I didn't know where to start and I was **confused**. I felt like I'm **failing** and this too much for me. [58]*
  - ***Am scared infact am dead scared** because I don't have any knowledge on what to do and how to do electronic writing. Plus **eish computer is not really my thing am scared after writing everything what if I erase everthing or something happens** and have deleted all my writing after spending all the hours on the computer. [66]*

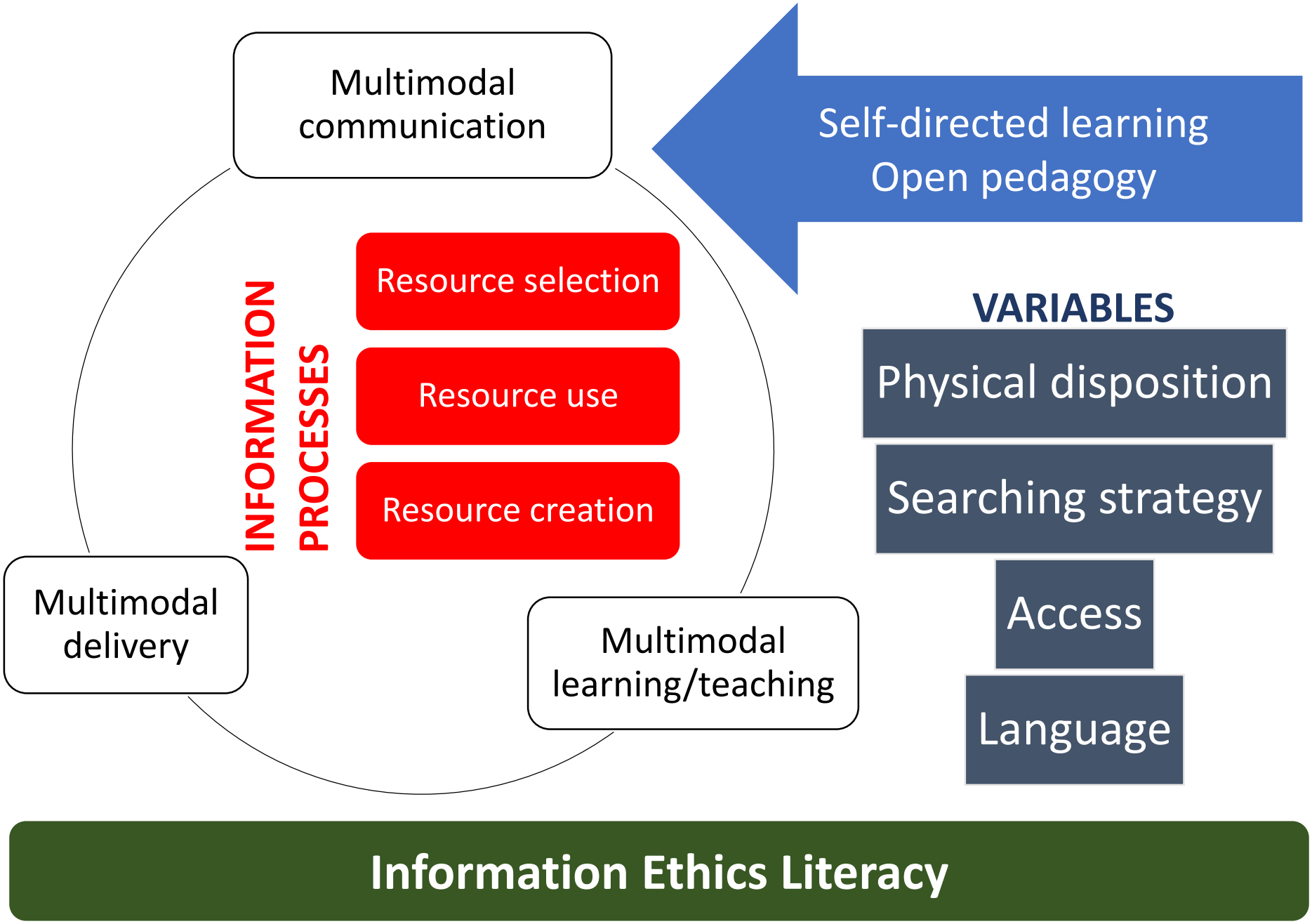
Language

- The Internet speaks English.

Rank	Language (Content of Websites)[i]	Websites Percentage (Million)	Language (Internet Users)[ii]	Internet Population (Million)	Language (Offline)[iii]	Native Speakers (Million)
1	English	553	English	600.9	Chinese	1,197
2	Russian	58	Chinese (simplified)	564.2	Spanish	399
3	German	57	Spanish	217.5	English	335
4	Japanese	50	Arabic	110.9	Hindi	260
5	Spanish, Castilian	45	Portuguese	104.6	Arabic	242
6	French	39	Japanese	104.6	Portuguese	203
7	Chinese	27	Russian	104.2	Bengali	189
8	Portuguese	25	French	80.2	Russian	166
9	Italian	20	German	78.1	Japanese	128
10	Polish	18	Hindi	77.7	Lahnda	88.7
11	Turkish	16	Korean	44.9	Javanese	84.3
12	Dutch, Flemish	14	Wu Chinese	37.4	German	78.1
13	Persian	9	Italian	37.2	Korean	77.2
14	Arabic	7	Turkish	35.6	French	75.9
15	Korean	7	Vietnamese	34.8	Telugu	74.0

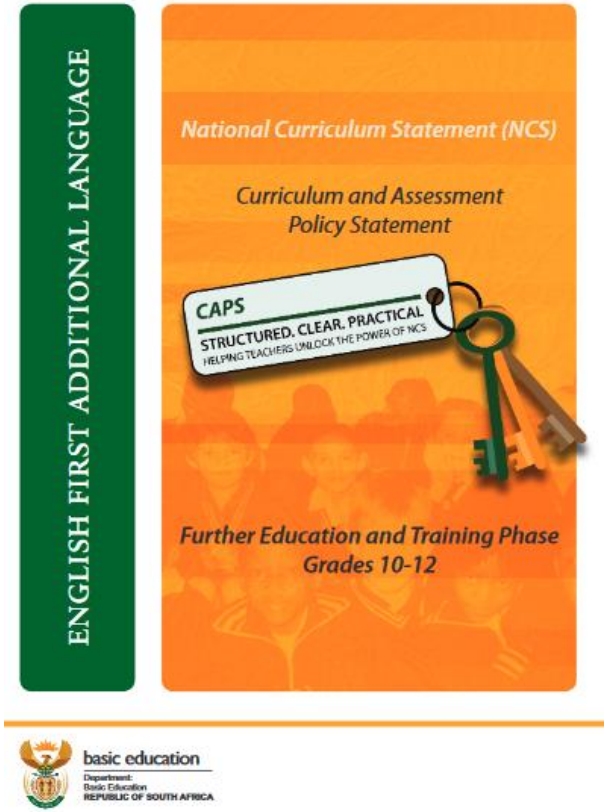
(Lee, 2017:43)




Multimodal communication
Self-directed learning
Open pedagogy
INFORMATION PROCESSES
Resource selection
Resource use
Resource creation
VARIABLES
Physical disposition
Searching strategy
Access
Language
Multimodal delivery
Multimodal learning/teaching
Information Ethics Literacy

Recommendations

- Information ethics across the curriculum
- Support is needed in terms of assessment literacy and self-directed learning for lecturers
- Encourage open pedagogy practices such as openness, collaboration, peer review and reflective practice
- Consider and plan for the diversity in terms of access to mediums and even language
- Accountability and openness on data purpose, use and life cycle

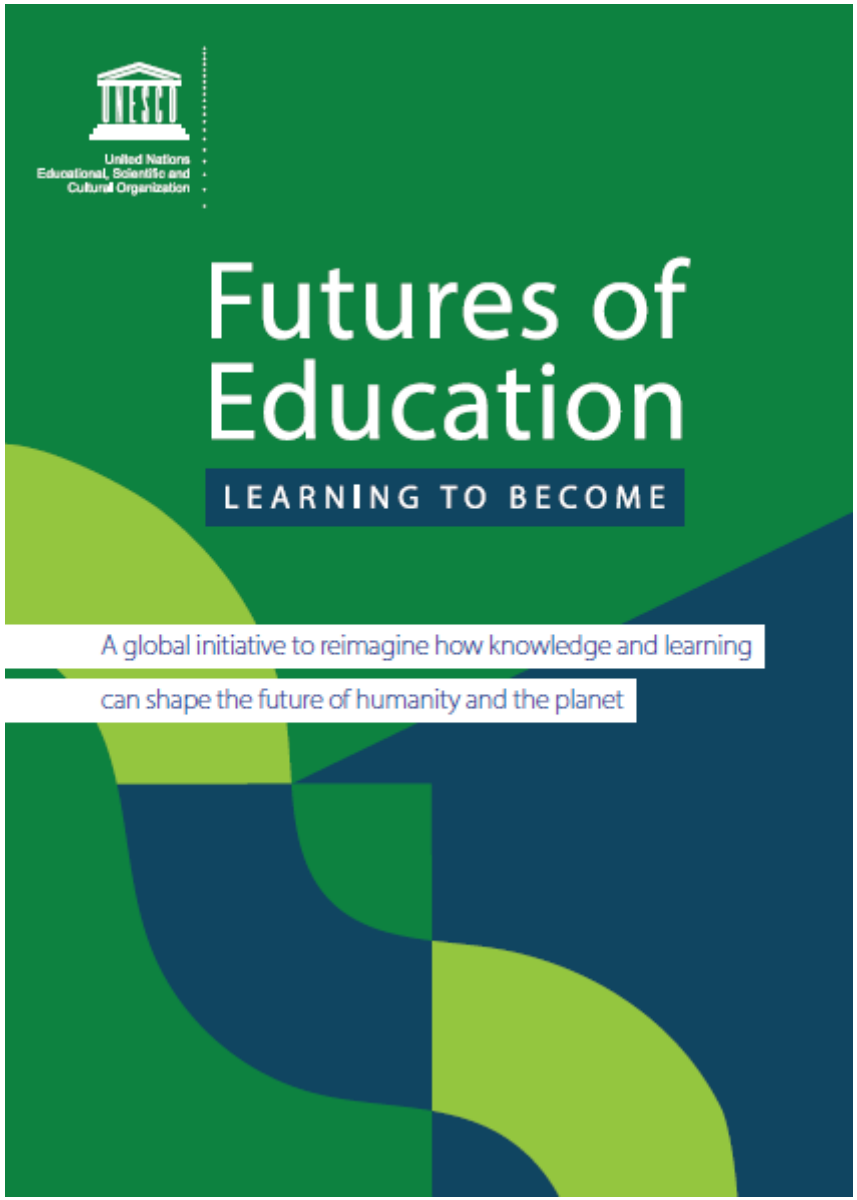


National Curriculum Statement Grades R-12, one of the principles:

- Active and critical learning: encouraging an active and critical approach to learning, rather than rote and uncritical learning of given truths

The National Curriculum Statement Grades R-12 aims to produce learners that are able to:

- identify and solve problems and make decisions using critical and creative thinking;
- work effectively as individuals and with others as members of a team;
- organise and manage themselves and their activities responsibly and effectively;
- **collect, analyse, organise and critically evaluate information;**
- communicate effectively using visual, symbolic and/or language skills in various **modes**;
- use science and technology effectively and critically showing **responsibility** towards the environment and the health of others; and
- demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation.


United Nations
Educational, Scientific and
Cultural Organization
Futures of
Education
LEARNING TO BECOME
A global initiative to reimagine how knowledge and learning
can shape the future of humanity and the planet

Conclusion

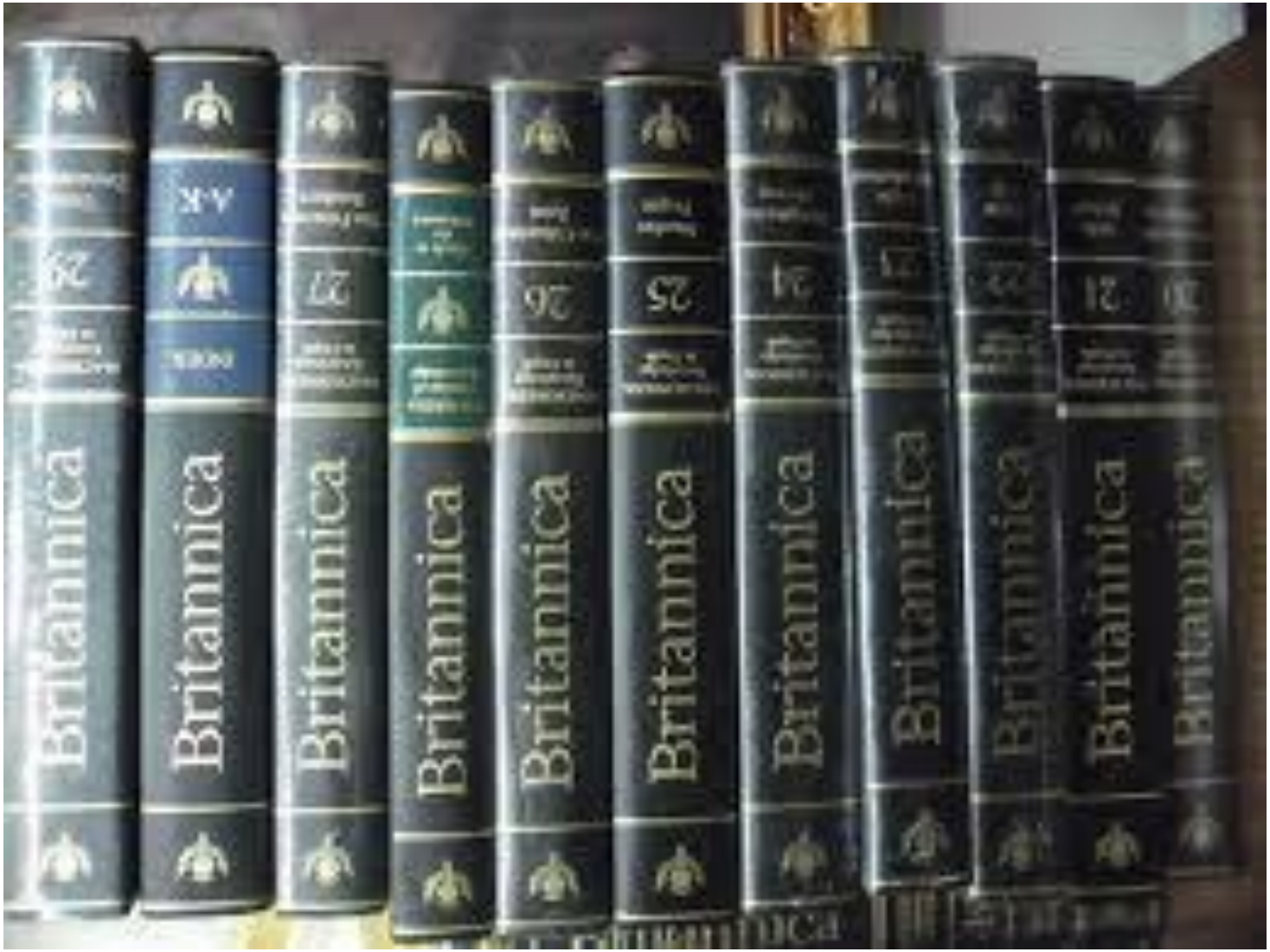
- Multimodality and openness leads to particular ethical issues
- The concepts of information, information literacy and information ethics inform and interact with each other
- Different types and levels of information ethics would be relevant in terms of open self-directed multimodal learning
- Issues specific to the context of South Africa and even the Global South or developing world must be considered

Conclusion

- Through this diffractive exercise the following issues are evident:
  - Self-directed learning has certain requirements
  - Openness and open pedagogy requires specific information ethics literacy
  - Demiurgic actions are central to open self-directed multimodal learning
  - Specific issues relate to resource selection, use and creation within a multimodal context

Conclusion

- Through teacher education promote learners becoming *metaliterarians* or *demiurgic empiricists*.



https://commons.wikimedia.org/wiki/File:Encyclopedia_Britannica_series.JPG

Thank you – Ke a leboga – Dankie

Jako Olivier
E-mail: jako.olivier@nwu.ac.za
Twitter: @jakoli4
Website: http://www.jako.nom.za