A Conceptual Approach for Teaching Students How to Evaluate the Credibility of Information Sources

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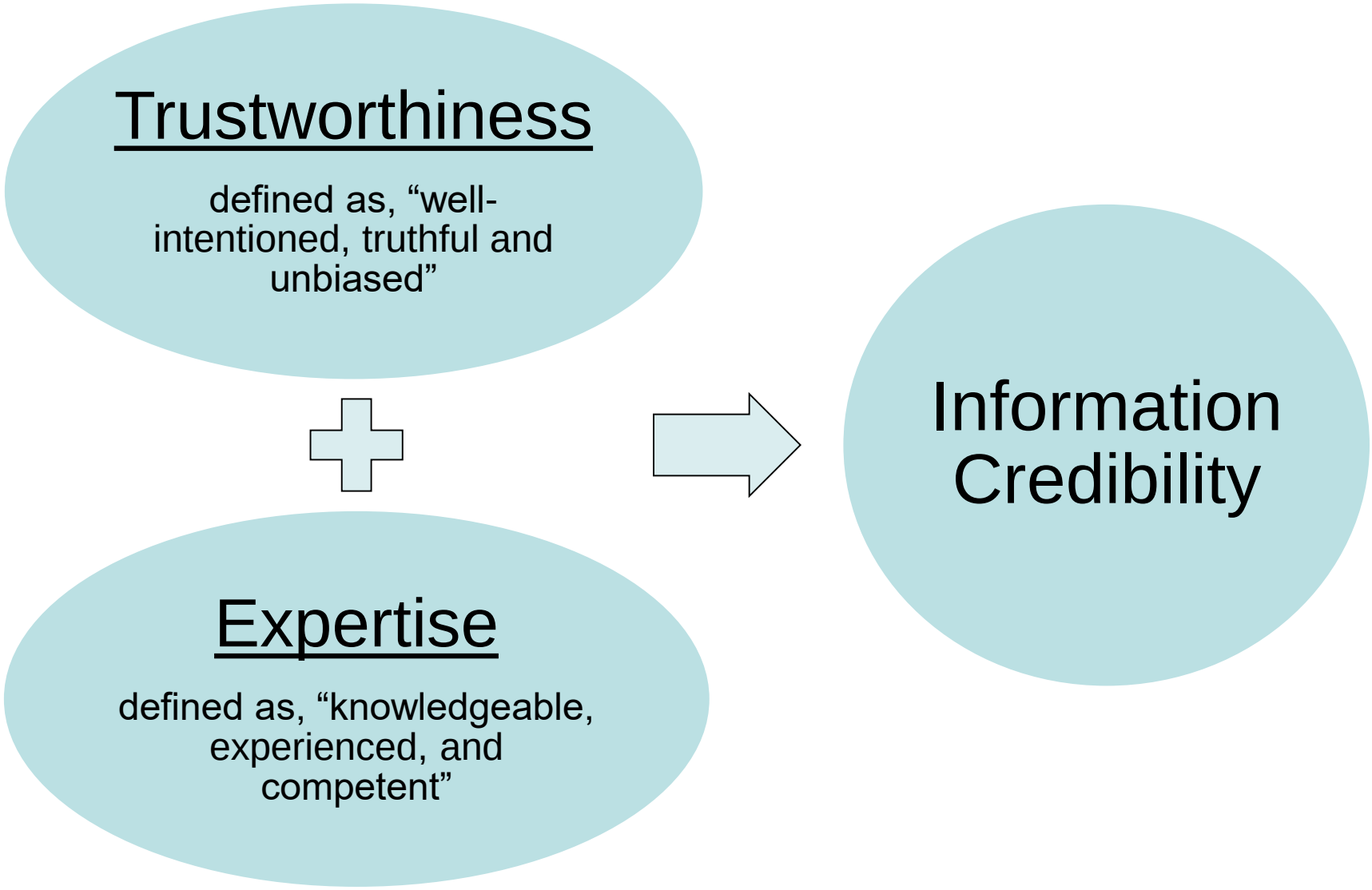
Many students have difficulties evaluating the credibility of information sources used for papers and presentations

Image Source: Coffee photo created by drobotdean - www.freepik.com

Difficulties Evaluating Information Credibility

- **Students have difficulty evaluating the credibility of online information (e.g., Metzger, Flanagin, & Zwarun, 2003; Douglas et al., 2014; List, Grossnickle, & Alexander, 2016).**
- **Only 44% of international graduate business students were proficient based on an information literacy assessment (Michalak & Rysavy, 2016).**

What is Information Credibility?



Information Source: Fogg & Tseng, 1999: 80

The ability to evaluate credibility is important since it is a higher order skill needed for critical thinking

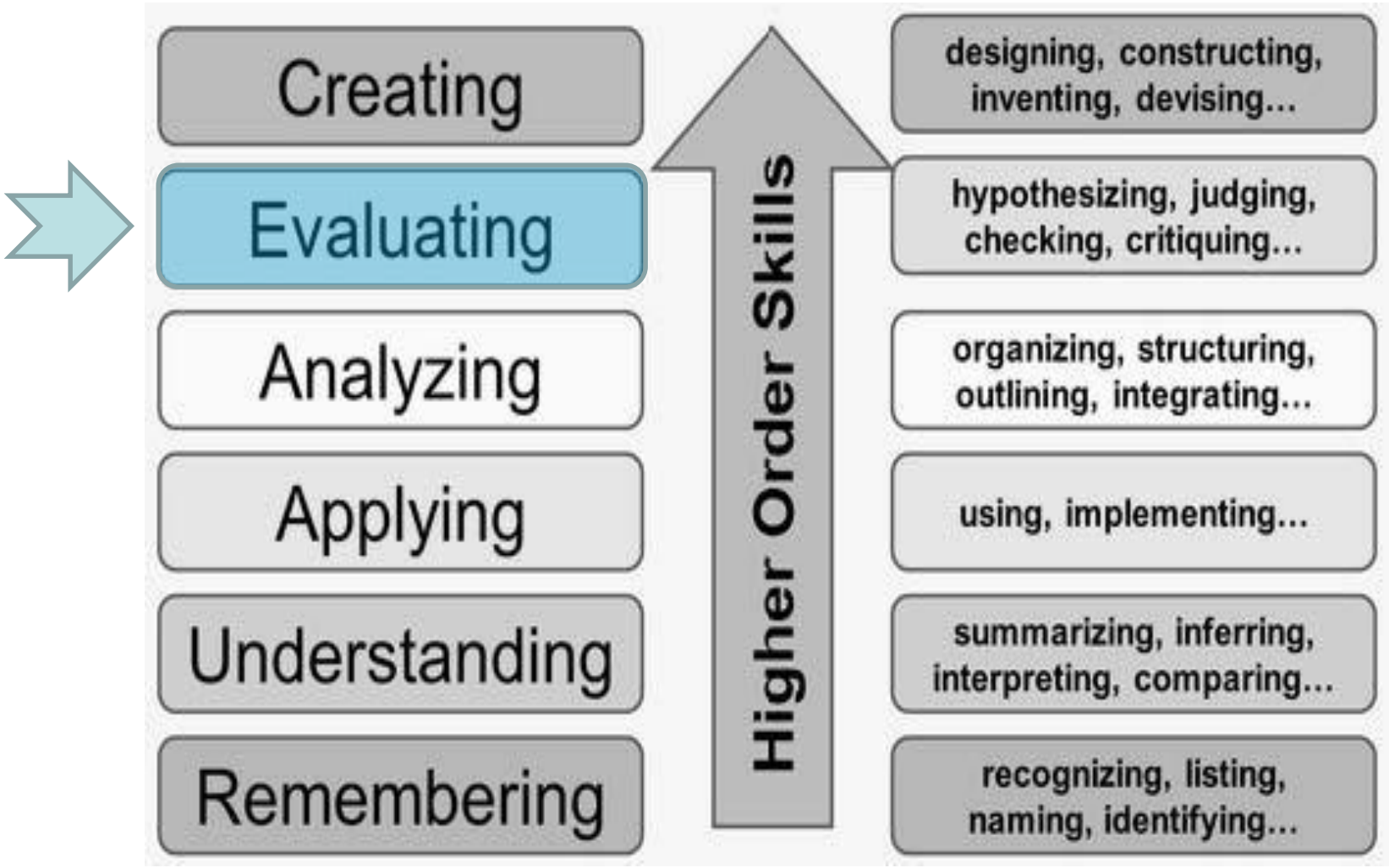


Image Source: https://stearnscenter.gmu.edu/knowledge-center/course-and-curriculum-redesign/blooms-taxonomy/

Important to prevent errors that can cause students to be misinformed or uninformed

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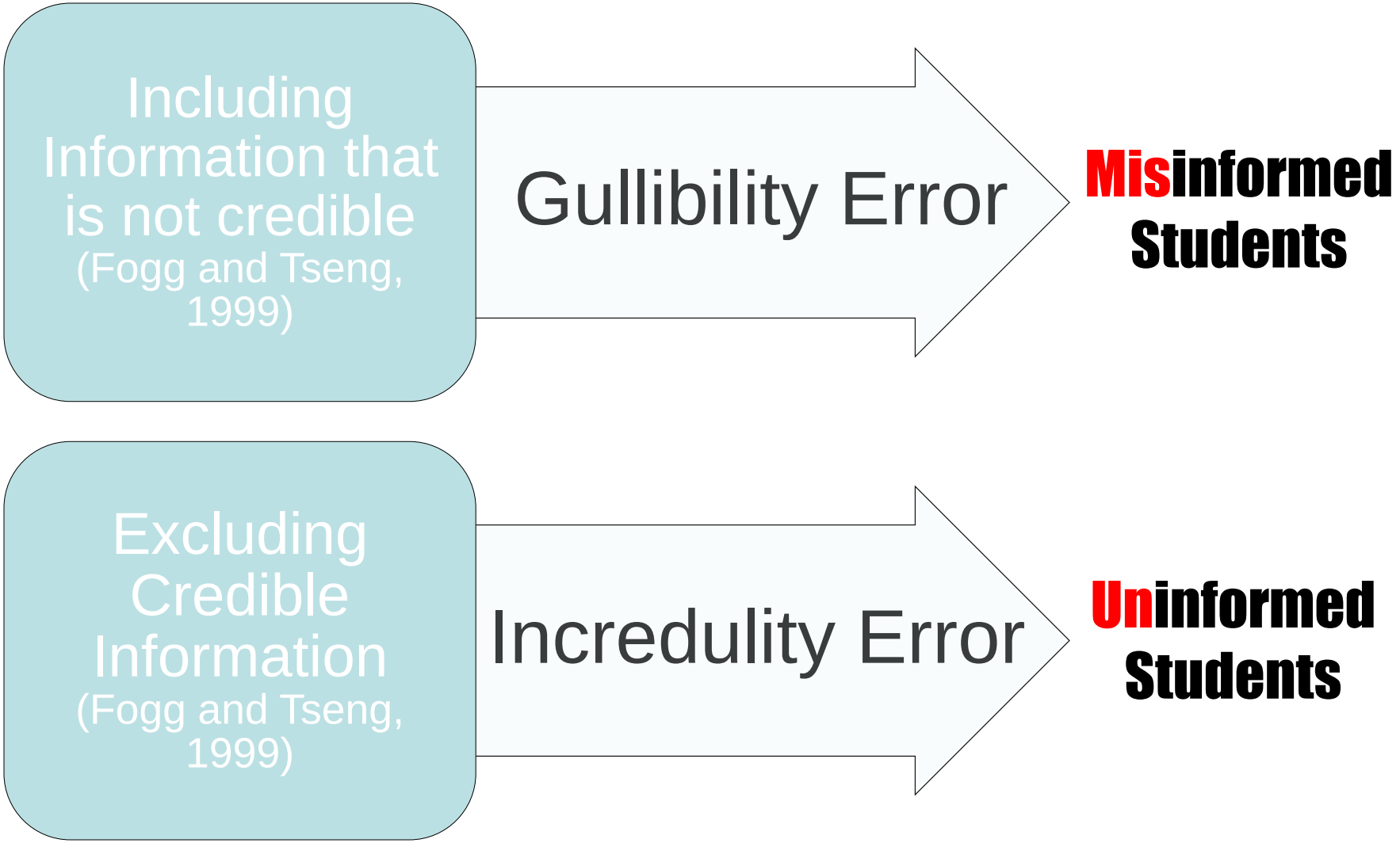
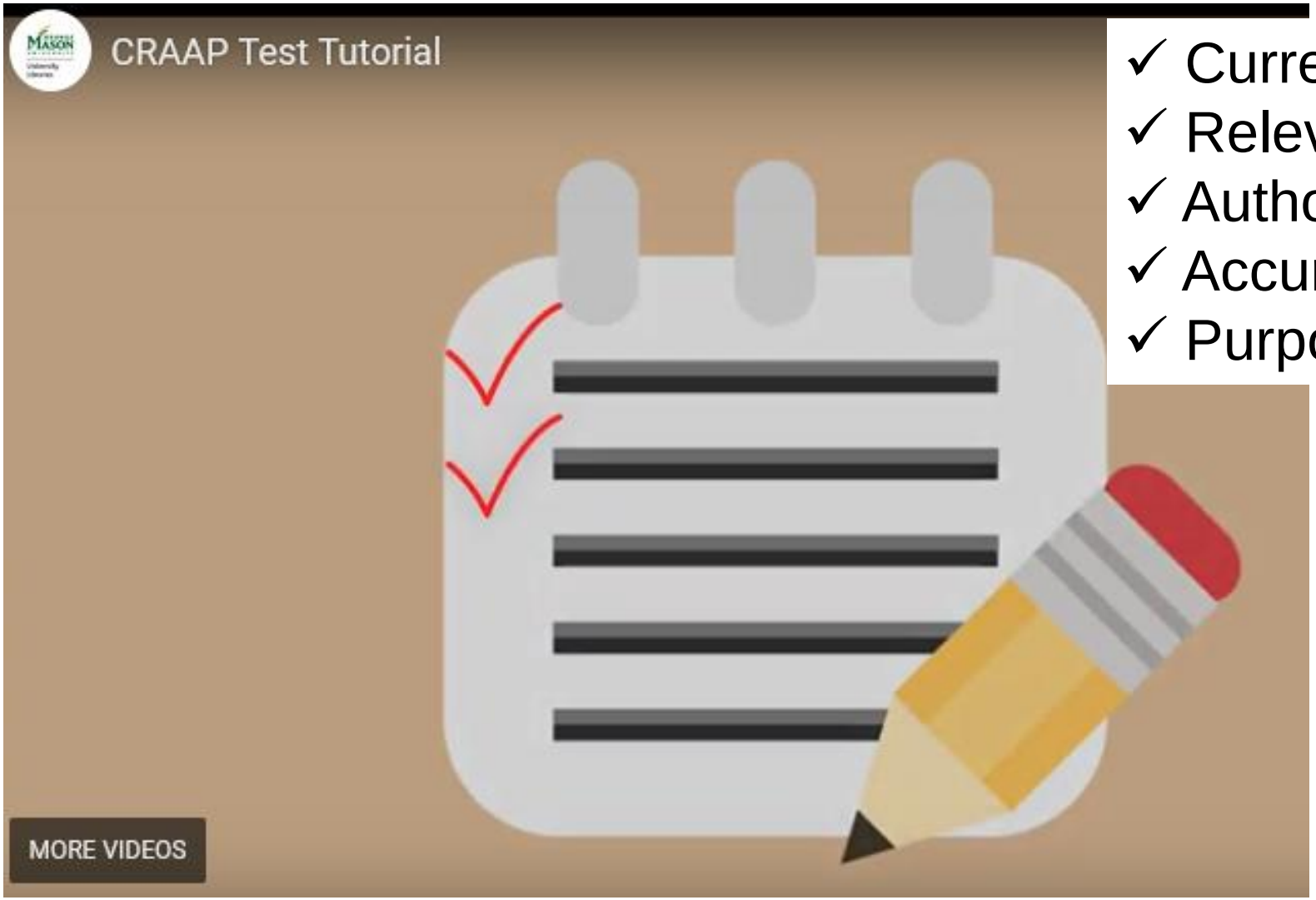


Existing approaches are not working for some students

Check List Approaches



- ✓ Currency
- ✓ Relevance
- ✓ Authority
- ✓ Accuracy
- ✓ Purpose

Image Source: https://library.gmu.edu/tutorials/craap_test

Limitations with Check List Approaches

- Checklist may not be developing higher order skills that are fundamental to critical thinking (Meola, 2004).
- Students using checklist approaches may not fully understand why they are making a decision to include or exclude information sources (Diekema, Holliday, & Leary, 2011).
- Checklists are also potentially confusing since they lump credibility together with other attributes like relevance and currency.

Information Restrictions

Image Source: Photo by Andy Lee on Unsplash

Don’t use Online Information

Only use University Library Databases

Only use Peer Reviewed Sources

There is a need for a conceptual approach to improve students' credibility evaluation skills

Research Questions

1. Which criteria should students consider when evaluating the credibility of information sources?
2. How can educators use an evaluation framework to help develop students' critical evaluation skills?

Research on Information Credibility

Reviewed studies about information credibility

- Communication, Information Science and Business studies
  - Checklist Frameworks (CRAAP- Blakeslee, 2004; RADAR- Mandalios, 2013)
  - Review Articles (Mercer, 2004; Rieh & Danielson, 2007; Hjørland, 2012; Choi and Stvilia, 2015)
  - Conceptual Studies (Fornaciari & Loffredo Roca, 1999; Fritch & Cromwell, 2001; Wathen & Burkell, 2002; Meola, 2004)
  - Empirical Studies (Hilligoss & Rieh, 2008; Metzger et al., 2010)

Evaluation Criteria:

1. Verification
2. Assurances
3. Reputation
4. Endorsement

Inclusion Criteria

5. Bias
6. Appearance

Exclusion Criteria

Conceptual Approach – 3 Step Process

Step 1

Show students how to use the inclusion and exclusion criteria to evaluate information credibility

Step 2

Ask students to use an enhanced bibliography (e.g., APA++) that shows the inclusion and exclusion criteria for each information source

Step 3

Provide students with feedback about which inclusion or exclusion criteria resulted in gullibility errors and incredulity errors

Inclusion Criteria (step 1)

Verification

- e.g., corroboration, fact checking sources…

Assurances

- e.g., peer review, editorial review process, audits…

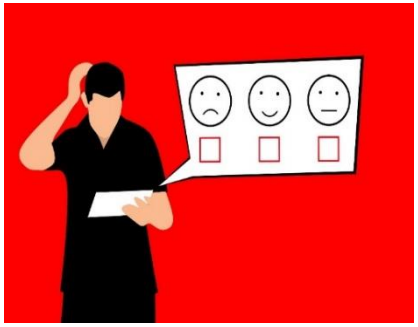
Inspection

Reputation

- e.g., author's qualifications, journal impact factor…

Endorsement

- e.g., recommendations from trusted 3rd parties…



Track Record

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Exclusion Criteria (step 1)

Insufficient evidence of inclusion criteria

- e.g., unable to establish credibility using verification, assurances, reputation or endorsements.

Bias

- e.g., tone of writing, tracing the influence of economic, political, and ideological interests...

Appearance Issues

- e.g., unprofessional quality, errors…

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Conceptual Approach – 3 Step Process

Step 1

Show students how to use the inclusion and exclusion criteria to evaluate information credibility

Step 2

Ask students to use an enhanced bibliography (e.g., APA++) that shows the inclusion and exclusion criteria for each information source

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Provide students with feedback about which inclusion or exclusion criteria resulted in gullibility errors and incredulity errors

Enhanced Bibliography (e.g., APA++)

Create a regular bibliography

e.g., APA

+ add a new section for **“Sources considered but not used”**

+

+ add the **inclusion or exclusion criteria** used for the credibility evaluation after each source

+

Create Enhanced Bibliography (step 2)

Sources:

1. Hambrick, D. C. (2007). Upper Echelons Theory: An Update. *The Academy of Management Review*, 334-343.
   Inclusion Criteria: reputation, endorsements, assurances.
2. Hall, K. (September 2019). GM's new wave of leadership changes focus on bolstering customer experience. *The Detroit News*.
   Inclusion Criteria : reputation, assurances, verification.
3. General Motors. (2019). Historical Financial Information, 2014-2019. Retrieved from https://www.gmfinancial.com/en-us/investor-center/financial-information.html.
   Inclusion Criteria: assurances.

Sources considered but not used:

1. GM Upper Echelons Analysis. (2019, May 1). Retrieved from notcrediblessay.biz.
   Exclusion Criteria: appearance issues, bias, insufficient evidence of inclusion criteria
2. Doe, J. (2019, May 1). GM's future challenges [Blog Post]. Retrieved from autoindustryiqautoblog.blog.
   Exclusion Criteria: insufficient evidence of inclusion criteria.

Note: The two sources under the section "sources considered but not used" are fictional sources offered for illustrative purposes.

Conceptual Approach – 3 Step Process

Step 1

Show students how to use the inclusion and exclusion criteria to evaluate information credibility

Step 2

Ask students to use an enhanced bibliography (e.g., APA++) that shows the inclusion and exclusion criteria for each information source

Step 3

Provide students with feedback about which inclusion or exclusion criteria resulted in gullibility errors and incredulity errors

Provide students with feedback on evaluation errors to develop their evaluation skills (step 3)

Enhanced Bibliography

Sources:

- Inclusion Criteria:
  - Verification
  - Assurances
  - Reputation
  - Endorsements

Feedback

Gullibility Error: Including Information that is not credible (Fogg and Tseng, 1999)

Sources considered but not used:

- Exclusion Criteria:
  - Appearance Issues
  - Bias
  - Insufficient evidence of inclusion criteria

Feedback

Incredulity Error: Excluding Credible Information (Fogg and Tseng, 1999)

Intended Contributions

1. **Identifies the criteria that students can use to evaluate the credibility of information sources**
2. **Proposes an approach for implementing the credibility evaluation framework in coursework using an enhanced bibliography**

THANK YOU!

If you adopt this approach please send me an email and let me know how it works for your students (mtheeke@gmu.edu).

Appendix A
Inclusion Criteria

Verification

1. Checking facts and supporting information, and considering all views on a topic (Metzger & Flanagin, 2015)
2. Duplication (i.e., certain information is found on multiple websites.) (Choi & Stvilia, 2015)
3. Systematic review and replication (Briner & Walshe, 2015; Hjørland, 2012)
4. Comparison with the coverage of the same subject in ‘authoritative works’ in the field (Hjørland, 2012)
5. Examining the coverage of controversial issues (Hjørland, 2012)
6. Corroboration by verifying information against one or more different sources (Meola, 2004)

Assurances

1. Peer review (Meola, 2004; Hjørland, 2012)
2. Certifications from trusted third parties (Metzger & Flanagin, 2015)
3. Description of editorial review process or board (Metzger & Flanagin, 2015)
4. Posting policy on content (Choi & Stvilia, 2015)
5. Internal assurance by audit department or board of directors (Mercer, 2004)
6. External assurance by auditors, analysts or news organizations (Mercer, 2004)
7. Book reviews and book reviewing (Hjørland,2012)

Reputation

1. Author's qualifications, experience, name recognition and credentials (Fritch & Cromwell, 2001; Wathen & Burkell, 2002; Fogg et al., 2003; Hjørland, 2012; Choi & Stvilia, 2015; Mandolios, 2013; Metzger & Flanagin, 2015)
2. Author's affiliation and contact information (Fritch & Cromwell, 2001; Choi & Stvilia, 2015; Metzger & Flanagin, 2015)
3. Author’s biographies provided in books or in conference presentations (Hjørland, 2012)
4. Author’s bibliometric data (publications as well as citations) (Hjørland, 2012)
5. Author’s CV on his or her home page (Hjørland, 2012)
6. Accessibility of author’s online profile (Choi & Stvilia, 2015)
7. Author’s publications (Choi & Stvilia, 2015)
8. History of author’s activity (in social Q&A sites) (Choi & Stvilia, 2015)
9. Identity and certified qualifications of institution (Fritch & Cromwell, 2001)
10. Publisher reputation (Hjørland, 2012)
11. Search engine ranking (Choi & Stvilia, 2015)
12. Journal impact factor (Hjørland, 2012)

Endorsements

1. Recommendations from trusted third parties (Metzger & Flanagin, 2015)
2. Sponsorship by or links to reputable organizations (Metzger & Flanagin, 2015)
3. Citations by others (Hilligoss & Rieh, 2008; Metzger & Flanagin, 2015)
4. Book reviews and book reviewing (Hjørland,2012)
5. Affiliation with a known and trusted entity (Fogg et al., 2003; Choi & Stvilia, 2015; Metzger & Flanagin, 2015)
6. Web links to information source by another website (Hilligoss & Rieh, 2008; Metzger & Flanagin, 2015)
7. Social annotations and ratings from other people (Choi & Stvilia, 2015)

Appendix B
Exclusion Criteria

Bias

1. Sponsoring: tracing the influence of economic, political, and ideological interests (Hjørland, 2012; Choi & Stvilia, 2015)
2. Mixed stances of user feedback on an issue (both pros and cons are provided) (Choi & Stvilia, 2015)
3. Proportion of positive and negative comments in user-generated content (Choi & Stvilia, 2015)
4. Tone of writing and whether the author is serious or facetious (Fogg et al., 2003; Choi & Stvilia, 2015)
5. Links to outside materials and sources and competitors sites (Choi & Stvilia, 2015)
6. Advertising or commercial motive (Fogg et al., 2003; Metzger & Flanagin, 2015; Choi & Stvilia, 2015)
7. Type of URL (Rieh & Danielson, 2007; Choi & Stvilia, 2015)

Appearance

1. Professional-quality and clear writing (Fogg et al., 2003; Metzger & Flanagin, 2015)
2. Absence of errors and broken links (Metzger & Flanagin, 2015; Choi & Stvilia, 2015)
3. Tone of writing (Fogg et al., 2003)
4. Structure and organization of information (Fogg et al., 2003; Metzger & Flanagin, 2015)
5. Stability of the website (Choi & Stvilia, 2015)
6. Fast download speed (Metzger & Flanagin, 2015)
7. Size of the site (Choi & Stvilia, 2015)
8. Information breadth and depth (Fogg et al, 2003; Metzger & Flanagin, 2015)
9. Length of the content (Choi & Stvilia, 2015)
10. Provision of citations and references (Choi & Stvilia, 2015; Metzger & Flanagin, 2015)
11. Links to external authorities (Metzger & Flanagin, 2015)
12. Additional information posted by the author (Choi & Stvilia, 2015)
13. Amount of supporting information (Mercer, 2004)
14. Precision of disclosure (Mercer, 2004)
15. Supported by data or examples (Wathen & Burkell, 2002)
16. Internal validity/consistency (Wathen & Burkell, 2002)

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