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A Study of **Critical Thinking** & **Metaliteracy Skills** of **Students on Facebook.** A Multiple Case Study in **Belgian, French** & **Québec Universities**

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SUMMARY

This research project aims to study what are the **students' critical thinking** (CT) **strategies** deployed **in a social Web activity** to evaluate **information**. It considers the issue of learners' relationship to CT as a factor influencing the evaluation of information on social networks. This research focuses on learners embarking on degree courses at university for the first time, in Québec, France and Belgium.

KEYWORDS

Critical Thinking (CT), Cross-Country Comparison, Evaluation, Information Literacy (IL), Metaliteracy, Monography, Multiple Case Study, Personal Learning Environment (PLE), Self-Efficacy, Sequential Mixed Methods Research Design, Social Cognitive Theory

1. Background

Many phenomena as conspiracy theories or Fake News suggest sociopolitical impacts that could harm democracy (Kauffmann, 2016).

Education community is permeable to these new realities: Internet and Social Media are part of learners' every day; e.g.: at least 75% of students occasionally use Wikipedia for their academic work (Head & Eisenberg, 2010).

The "Google-Wikipedia reflex" bypasses the important moment of presearch and questioning on the covered subject (Serres, 2008, 2010):

> **"Localizing, identifying, discerning, evaluating the origin, reliability, quality and relevance of information [has become] one of the most crucial school issues."** (Serres, 2007, p. 73)

But IL skills of Québecer, French and Belgian students seem weak or fragmentary, especially on information evaluation (Mittermeyer & Quirion, 2003; Thirion & Pochet, 2008; Ballarini-Santonocito & al., 2015).

And what about IL frameworks?

Metaliteracy takes into account different literacies, with emphasis on evaluation: metaliterate people "evaluate information with CT and analysis [strategies]" (Mackey & Jacobson, 2011).

Studying CT strategies with Metaliteracy perspective is meaningful: "CT is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information" (Scriven and Paul, 1987).

Our research will provide empirical knowledge on IL skills, in terms of evaluation of information, Metaliteracy and CT strategies.

2. Research Scopes & Objectives

Scientific scopes

- Empirically compare learners' measured and declared CT, with contextual and observable CT during online activities. It will provide data to extend reflection about CT contextualization in digital environments.
- Extend comparison work done in Francophonie (Québec, France, Belgium) in regards to the students' IL. It will intend to approach the subject with new methodological and conceptual perspectives.
- Provide input to the interdisciplinary discussion on radicalization phenomena. It will propose elements to better understand users' cognitive strategies on social Web.

Social scopes

- Take part in the discussion on digital citizenship and how digital environments change the way we look at ourselves, others and the world (Georges, 2009).
- Stimulate consideration of CT and evaluation in new digital and IL frameworks developed by many government and university institutions.

Research questions

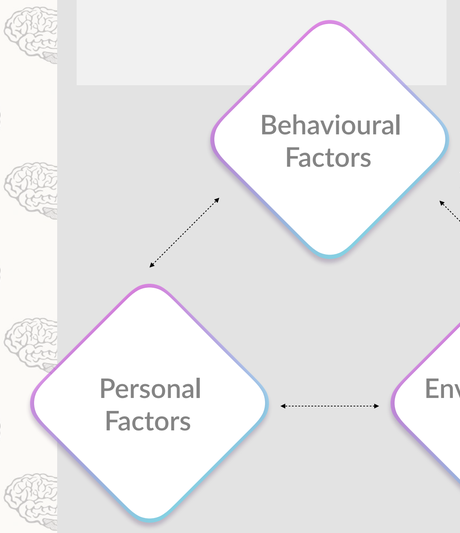
What are the strategies deployed by students in a social web activity to evaluate information? Can we consider that learners' relation to CT is a factor influencing information evaluation on social networks?

Interpret learners' critical thinking practices in a training activity on a social network such as Facebook

- **1st sub-objective:** Measure learners' CT skills especially with respect to their attitudes and beliefs about CT and IL.
- **2nd sub-objective:** Review and evaluate learners critical thinking strategies in relation to Metaliteracy skills mobilization.
- **3rd sub-objective:** Explain learners' perceptions of Facebook's used as a PLE.
- **4th sub-objective:** Identify cultural or academic factors in Metaliteracy and critical thinking practices.

3. Theoretical Framework

Facebook as **Personal Learning Environment**	*IL enriched by* **Metaliteracy**	*Information evaluation through the lens of* **Critical Thinking**
Hybrid environment mobilized by learners and reused in learning activities contexts. (Roland & Talbot, 2014)	Overarching framework that unifies multiple literacy types. Evaluating information should be done in a critical and dynamic way. (Jacobson & Mackey, 2013)	Using cognitive skills or strategies with conscious intent that increase the probability of a desirable outcome. It is purposeful, reasoned, and goal-directed. (Halpern, 1999)



Our study is part of **social cognitive theory** (Bandura, 1986): behavioural, personal and environmental factors interact with each another (Carré, 2004). This is relevant for examining links between our concepts.

e.g.: It has already been mobilized to study links between IL and PLE (Roland, 2015, 2017) or between digital literacies and self-efficacy (Prior, Mazanov, Meacheam, Heaslip & Hanson, 2016).

Self-efficacy, **metacognition** or **self-regulation** at the heart of social cognitive theory will especially be used to study such relationships.

Starting hypothesis

eg. As PLE does Facebook weaken learners' metacognition? As young people are (or are suspected to be) confident about their own social media skills, does it influence their own relationship to critical thinking?

4. Research Tools & Methodology

Sequential Mixed Methods Research Design

1st Phase — 2nd Phase

Quantitative Research

Sample (*n*) ≈200 people.

Combination of **3 tests**:

- **Halpern CT assessment** (HCTA) (2010): real-world outcomes of CT.
- **CT Toolkit (CriTT)** (Stupple & al., 2017): attitudes and beliefs about CT.
- **IL self-efficacy scale** (Kurbanoglu & al., 2006): self-efficacy for IL.

Cross-cultural test validation during tests translation into French (Vallerand, 1989).

Data supplied on a Web survey and processed with the use of *SPSS* software.

Qualitative Research

For each 3 university: arrow 5 students corresponding to standard profiles which have emerged during the quantitative phase (*n*≈3x5).

Context:

- **Facebook adaptation of activities developed by Gagnon** (2008).
- In a private group, create situations where learners are involved in argumentation processes.

Data collection instruments:

- Participant observation (screenshots, screen recordings, think-aloud protocol) and focus groups.

Data coded with Gagnon's grid (2011) and Metaliteracy goals & objectives (Mackey & Jacobson, 2018) and processed with the use of *IRaMuTeQ* & *NVivo* softwares.

3 fieldworks:

- Université de **Montréal** (**Québec**)
- Université **Bordeaux**-Montaigne (**France**)
- Université Libre de **Bruxelles** (**Belgium**)

Sampling criteria:

- Being a first-year student;
- Beginning a degree in history or geography;
- Being under 25 years old.

Online Bibliography

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