

Self-Efficacy and Critical Thinking of Future Teachers: a Research conducted in Wallonia, France, and Quebec

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Summary

Only 8.7% of students in OECD countries scored at level 5 or 6 on the PISA reading test, which includes the ability to distinguish facts and opinions (OCDE, 2019c). In Canada, approximately 15% of students were classified at this level 5 or 6 (OCDE, 2019a) compared to 9.2% in France (OCDE, 2019b) and 6.7% in the Wallonia-Brussels Federation (Lafontaine et al., 2019). Beyond PISA tests, many studies have looked at students' proficiency levels in information technology, media, or digital literacy, using conceptual frameworks related to a diversity of "literacies." The overall finding is rather nuanced: despite a certain diversification of skills, they remain limited. These statistics are particularly relevant in our contemporary information environment, sometimes referred to fake news or the "post-truth" era.

Considering how ICT are changing the way people are related to information, several frameworks offer a different approach to new media in the school context, all over the world. For example, in Europe (Carretero et al., 2017), Ontario (Ministère de l'Ontario, 2016) and Quebec (Ministère de l'Éducation et de l'Enseignement supérieur, 2019), these documents are based on a renewed conceptualization of literacies. Many conceptual frameworks bring these literacies together. For instance, metaliteracy is an overarching and self-referential framework that integrates emerging technologies and unifies literacies (Mackey & Jacobson, 2011), while emphasizing the importance of developing critical thinking skills to address the challenges exacerbated by fake news. First, the metaliteracy framework explicitly pushes critical thinking enhancements and collaboration in social media and web contexts. Then, it consolidates the diversity of literacies, by going beyond traditional information literacy skills.

Since the educational world is the center of these mechanisms, it was appropriate to draw a portrait of future teachers' critical thinking and metaliteracy skills in the context of social networks. To take account of this global trend, we conducted our research in three French-speaking countries (Wallonia, France, and Quebec) to question the influence of teacher training, in a collective case study (Stake, 1995). Our sample consisted of 245 students ($N=245$) from five higher education institutions.

This communication focuses on two research sub-objectives: a) to develop and analyze the psychometric quality of French adapted tools to quantify the level of critical thinking,

as well as self-efficacy in critical thinking and metaliteracy, particularly in the context of a preliminary collection phase; 2) to explain the level of critical thinking of the learners by setting up a dialogue between their self-efficacy in critical thinking and their metaliteracy.

Firstly, we will present the procedure for validating the French-language versions of the psychometric tests. The reduced 10-item version of the Halpern Critical Thinking Assessment (Halpern, 2016) translated into French reveals consistent internal reliability with the 20-item version ($\omega_t = .78$, *IC* 95% [.75; .97]; $\alpha = .66$, *IC* 95% [.59; .87]). We also created a critical thinking self-efficacy scale based on Stupple and al. (2017) works: the 16-item scale showed very high reliability ($\omega_t = .92$, *IC* 95% [.86; .93]; $\alpha = .92$, *IC* 95% [.83; .92]). Finally, we developed a metaliteracy self-efficacy scale based on metaliteracy goals and objectives (Mackey & Jacobson, 2018), with high reliability values ($\omega_t = .92$, *IC* 95% [.88 ; .95] ; $\alpha = .92$, *IC* 95% [.87; .95]).

We will then report on the discrepancies existing between these three countries. Means and medians in critical thinking score are better for students from Quebec ($\bar{X} = 34.55$, *Mdn* = 34.56) than Belgian ($\bar{X} = 31.82$, *Mdn* = 31.52) or French students ($\bar{X} = 30.77$, *Mdn* = 31.52). This is also true for CT self-efficacy and Metaliterate assessment self-efficacy. Finally, we will present a model to predict CT score: this model is significant ($F[11,233] = 3.80$, $p < .001$, $1-\beta = .99$), but only explains 15.2% of the variance ($R^2_{\text{adjusted}} = .152$).

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