

# UNIVERSITY OF TWENTE.



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ATTACHMENT(S)

SUBJECT

Dear professor Trlifaj

It was a great pleasure to read the Habilitation Thesis of dr. Cyrill Brom. After processing the thesis my conclusion is that I warmly recommend awarding the applicant, dr. Brom, the degree of Associate Professor. The sections below summarize the main aspects that led me to this conclusion.

The overall aim of the thesis is to discover empirically validated principles for instructional design that increase positive affect, and subsequently enhance learning. This is an important objective that is not easily achieved. The obstacles that this research encounters include the need to: (a) build or refine a theoretical framework (e.g. expand CATLM), (b) provide clear definitions and operationalizations of key constructs (e.g., select the type of affect and its measurement), and (c) ensure that the research is conducted rigorously (e.g., make the proper selection of experimental and control conditions). In my opinion, the thesis presents solid work regarding its embedding in theory, and provides even stronger contributions to research on the latter aspects.

All the empirical studies reported in the thesis are informed by, and based on *theory*. In this sense there is good grounding. The chosen framework, CATLM, is suitable for the studies that are reported. However, in view of the overall aim of the research, I admit to have anticipated a slightly deeper and more expansive discussion on the linkage between affect and motivation. To specify this even further, I would have liked to see a more prominent place taken up by self-efficacy development and/or the role of relatively stable motivational constructs. Furthermore, I expected to have encountered a more extensive discussion of existing design theories for affect and/or motivation, such as the ARCS-model of Keller and the FEASP-model of Astleitner. I understand that the empirical studies do not provide the best place for such a discussion. However, the commentary, although informative in itself, might have touched upon these issues.

All the empirical studies have a *solid framing of key concepts and insights*. I particularly liked that the authors started with meta-studies as point of departure and then delved deeper into distinct studies to highlight finer theoretical points of key constructs, different possible accounts for reported findings, and boundary conditions (studied or not studied). The conclusions advanced in most of the presented papers in the thesis provide ample ideas for future research.

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In all empirical studies great care is taken to *create ecologically valid conditions*. This is not trivial matter and neither is it self-evident because a considerable proportion of multimedia studies is conducted (one might be tempted to use the term 'plagued') with interventions that last for only a few minutes. The studies of Brom are exemplary illustrations of how it can be done in a manner that addresses more directly the relevance of research for practice. That is, one finds students being properly prepared before an experimental treatment (e.g., with a preceding lecture), carefully constructed conditions that concentrate on trying to vary only the main feature under study (an extremely difficult matter in this type of experimentation), and retention and transfer tests that are administered both immediately after training and weeks or even months later. One might argue that there is not a sufficient degree of control over conditions as in 'pure' experiments. However, that is a matter of research question(s) and choice. Personally, I favor the authors' perspective and I greatly value the care with which the studies have been designed. Their evident aim is to achieve as much control as is feasible while staying close to what is practically meaningful (as illustrated in the construction of control conditions, among other things).

Finally, an aspect that might go unnoticed, but one that I think should be mentioned and valued, is that the authors have created, almost in passing, pertinent instructional materials that can serve students and researchers alike. Most notably, I am thinking of the micro-game *Orbis Pictus Bestialis* (OPB) that, to my knowledge, is not available in an English version. This is a pity with so much care that has gone into its construction.

In short, I find that the research conducted by the applicant, dr Brom, is based on solid theoretical grounds, is systematic and sound in its methodology (with lots of valuable, detailed descriptions that afford replication) and with a particularly keen eye on the validity of the research for educational practice. The findings from these studies provided a significant advance over our existing knowledge on designing for affect and learning. I congratulate the author with his work.

Kind regards,



Dr. Hans van der Meij