



# Are sophisticated students always better? The role of topic-specific personal epistemology in the understanding of multiple expository texts

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## Abstract

In a sample of 135 Norwegian education undergraduates, we examined the effects of topic-specific epistemic beliefs concerning the simplicity and source of knowledge on deep-level understanding of multiple expository texts about the same topic—climate change. The results showed that students holding sophisticated simplicity beliefs, viewing knowledge about climate change as complex, gained better multiple-text understanding than did students holding naïve simplicity beliefs, viewing knowledge about climate change as simple. However, students holding sophisticated source beliefs, viewing knowledge about climate change as personal construction, performed poorer than did students holding naïve source beliefs, viewing knowledge about climate change as transmitted from experts. Moreover, students believing knowledge to be complex and, simultaneously, relying on expert authors were at a particular advantage with respect to multiple-text understanding. Thus, in this complex reading-task context, source beliefs usually located at the sophisticated ends of epistemic belief continuums turned out to be maladaptive, presumably because they distracted from the building of a high-quality representation of author and text meaning.

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## 1. Introduction

The aim of this study was to examine how reader differences in topic-specific personal epistemology might affect the understanding of multiple texts about the same topic—climate change. Additionally, we wanted to examine whether readers characterized by different combinations of epistemic beliefs might differ in their multiple-text understanding, focusing especially on combinations of beliefs concerning the simplicity of knowledge about climate change and beliefs concerning the source of knowledge about climate change. By doing this, we hoped to challenge the notion that beliefs usually termed sophisticated are always productive and provide new evidence to the effect that naivety is sometimes the wiser strategy.

## 2. Dimensions of personal epistemology

Personal epistemology refers to beliefs or theories that individuals hold about knowledge and the process of knowing, that is, about the epistemic (Hofer & Pintrich, 1997; Kitchener, 2002). Educational psychologists who currently use quantitative methodology to research personal epistemology owe much to Schommer (1990), who departed from the developmental paradigmatic approach (cf. Hofer, 2004a) and introduced quantitative assessment in the form of a 63-item questionnaire to explore the dimensionality of epistemic beliefs. Schommer and associates (e.g., Schommer, 1990; Schommer, Crouse, & Rhodes, 1992) reported that factor-analytic research with this questionnaire yielded two factors concerning beliefs about the nature of knowledge (certain knowledge and simple knowledge), as well as two factors concerning beliefs about learning (quick learning) and intelligence (fixed ability). It should be noted, however, that this factor structure has not been consistently replicated by other researchers using the questionnaire (Bråten & Strømsø, 2005; Hofer, 2000; Qian & Alvermann, 1995; Schraw, Bendixen, & Dunkle, 2002).

In a landmark review of personal epistemology research, Hofer and Pintrich (1997) tried to clean up the construct by placing beliefs about learning and intelligence outside the realm of personal epistemology, suggesting that personal epistemology consists of two dimensions concerning the nature of knowledge (what one believes knowledge is) and two dimensions concerning the nature or process of knowing (how one comes to know). Within the area of nature of knowledge, the dimension *certainty of knowledge* ranges from the belief that knowledge is absolute and unchanging to the belief that knowledge is tentative and evolving, and the dimension *simplicity of knowledge* ranges from the belief that knowledge consists of an accumulation of more or less isolated facts to the belief that knowledge consists of highly interrelated concepts. Within the area of nature of knowing, the dimension *source of knowledge* ranges from the conception that knowledge originates outside the self and resides in external authority, from which it may be transmitted, to the conception that knowledge is actively constructed by the person in interaction with others, and the dimension *justification for knowing* ranges from justification of knowledge claims through observation and authority, or on the basis of what feels right, to the use of rules of inquiry and the evaluation and integration of different sources. It should be noted that these conceptually derived dimensions have also not been unequivocally empirically verified through factor analysis of questionnaire data (Hofer, 2000). However, use of qualitative methodologies such as observations and interviews (Hofer,

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