Changing Epistemological Beliefs: The Unexpected Impact of a Short-Term Intervention

Dorothe Kienhues*1, Rainer Bromme1, and Elmar Stahl2

1 Psychological Institute III, University of Muenster, Germany
2 University of Education, Freiburg, Germany

Abstract

Background. Previous research has shown that sophisticated epistemological beliefs exert a positive influence on students' learning strategies and learning outcomes. This gives a clear educational relevance to studies on the development of methods for promoting a change in epistemological beliefs and making them more sophisticated.

Aims. To investigate the potential for influencing domain-specific epistemological beliefs through a short instructional intervention.

Sample. 58 students at a German university (87.7% female) with a mean age of 21.86 years (SD = 2.88) were selected on the basis of their performance on a preliminary survey of epistemological beliefs. Half of them had more naive beliefs; the other half, more sophisticated ones.

Methods. Participants were randomly assigned to one of two groups: one whose epistemological beliefs were challenged through refutational epistemological instruction or
another receiving nonchallenging informational instruction. The treatment effect was assessed by comparing pre- and postinstructional scores on two instruments tapping different layers of epistemological beliefs (DEBQ and CAEB). Data were subjected to factor analyses and analyses of variance.

**Results.** According to the CAEB, the naive group receiving the refutational epistemological instruction changed toward a more sophisticated view, whereas the sophisticated students receiving the informational instruction changed toward an unintended, more naive standpoint. According to the DEBQ, all research groups except the naive refutational group revealed changes toward a more naive view.

**Conclusions.** The study indicates the possibility of changing domain-specific epistemological beliefs through a short-term intervention. However, it questions the stability and elaborateness of domain-specific epistemological beliefs, particularly when domain knowledge is shallow.