

Q-Test of Undergraduate Epistemology and Scientific Thought: Development and Testing of an Assessment of Scientific Epistemology

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Abstract : The QUEST is an assessment of scientific epistemic beliefs and was developed to measure students' intellectual development in regards to beliefs about knowledge and knowing. The QUEST utilizes Q-sort methodology, which requires participants to rate the degree to which statements describe them personally. As a measure of personal theories of knowledge, the QUEST instrument is described with the Q-sort distribution and scoring explained. A preliminary demonstration of the QUEST assessment is described with two samples of undergraduate students (novice/lower division compared to advanced/upper division students) being assessed and their average QUEST scores compared. The usefulness of an assessment of epistemology is discussed in terms of the principle that assessment tends to drive educational practice and university mission. The critical need for university and academic programs to focus on development of students' scientific epistemology is briefly discussed.

Keywords : scientific epistemology, critical thinking, Q-sort method, STEM undergraduates

Conference Title : ICPBCS 2016 : International Conference on Psychological, Behavioral and Cognitive Sciences

Conference Location : Paris, France

Conference Dates : May 16-17, 2016