

The Nature of Science > Scientific Theories

Research on Student Learning

Although most students believe that scientific knowledge changes, they typically think changes occur mainly in facts and mostly through the invention of improved technology for observation and measurement. They do not recognize that changed theories sometimes suggest new observations or reinterpretation of previous observations. ^[1]

Students of all ages find it difficult to distinguish between a theory and the evidence for it, or between description of evidence and interpretation of evidence. ^[2] Some research suggests students can start understanding the distinction between theory and evidence after adequate instruction, as early as middle school. ^[3]

References

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[3] Roseberry, A., Warren, B., Conant, F. (1992). *Appropriating scientific discourse: Findings from language minority classrooms*.