

Abstract for an Invited Paper  
for the TSS10 Meeting of  
The American Physical Society

**Seeing the Growth of Physical Theory in Students' Minds**

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Normally the conventional notion of physics teaching is to present the established canon of physics by accepted methods for the benefit of the deserving, that is, those who can get what is presented. More than 30 years now of physics education research reveals that if change in student understanding is the goal, this conventional notion of physics teaching is a *spectacular failure*. The same body of research reveals that the spectacular failure is a consequence of the pedagogy. The dismal results are not due to the difficult nature of physics or to inadequacies of students. In other words, the failure of conventional instruction is totally unnecessary. The examples of alternative pedagogies that are not failures have a few features in common. One of these is the necessity for the teacher to pay close attention to the students' conceptions of the phenomena being studied and how these may be changing. That is, the teacher needs to be able to see the growth of physical theory in students' minds. Examples of and strategies for ways of seeing this growth in the classroom will be shared.