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Indicators of Student Engagement in Fluid Mechanics[1] JEAN HERTZBERG[2], KATHERINE GOODMAN[3], University of Colorado Boulder — Many engineering programs require a fluids course. Standards such as ABET ensure that it is technically accurate. To keep students engaged, however, we need to ask: does this course present our discipline in its most salient and meaningful form? As part of an ongoing investigation of a technical elective called Flow Visualization, we compare student surveys from both Flow Vis and a required Fluid Mechanics course. Surveys going back to 2008-2012 found that Fluid Mechanics students in Mechanical Engineering at the University of Colorado Boulder tended to have a negative shift in affect. That is, they were less likely to believe studying fluids was important to them as engineers and to society in general by the end of the course. More recent surveys find that this has become neutral among our students: from the beginning to the end of the course, they do not report any change in the importance of fluids. The recent survey also reveals that they are now noticing fluids in everyday life significantly more often. This *expanded perception* is a hallmark of the Deweyan *transformative experience*, a framework to evaluate the motivational and affective aspects of a course. Suggestions of why these changes have taken place are drawn from open-response survey items and student interviews.

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