

Flow, Student Engagement, Deep Learning, and the Role of Culture: Findings from the Last 25 Years of Working with Csikszentmihalyi and Colleagues

In this presentation, I will highlight some of the major areas of investigation and research findings in working with Mihaly Csikszentmihalyi and colleagues on topics including flow, student engagement, deep learning, and cultural differences over the last 25 years.

Csikszentmihalyi's (1990) concept of flow refers to a state of intense concentration and enjoyment that occurs when people are fully immersed in an activity. In the educational context, students are most likely to experience flow and become highly engaged in learning when they find tasks to be challenging but achievable, when they receive timely feedback, and when they have opportunities for action and self-direction. These conditions occur more commonly, for example, during individual and group work formats (e.g., science labs) compared to teacher lectures, watching videos, and taking tests. Increased flow and student engagement are, in turn, associated with better learning outcomes and continuing motivation.

Promoting flow in classrooms and other learning environments is also key to *deep learning*—a type of learning characterized by active engagement and high levels of performance leading to valued achievements. Deep learning involves more sustained effort, more complete understanding, better retention, and the ability to transfer learning to multiple contexts. Deep learning was demonstrated in studies of educational video games. For example, students were found to be more deeply engaged in undergraduate mechanical engineering courses when using a video game to solve complex problems instead of traditional labs and homework assignments. Learning via the video game is characterized by heightened immersion and flow.

What constitutes engaging and meaningful learning can be influenced by culture. On the one hand, flow has been recognized and described in similar phenomenological terms in every culture where it has been studied. On the other, research has consistently found cultural differences in pathways to experiencing flow. For example, schoolwork is the primary context for flow in Eastern Cultures, while sports and leisure activities are the primary contexts for flow in Western Cultures. How parents socialize children is frequently situated in culturally-laden *ethnotheories* (Super & Harkness, 1986), which can include theories of how learning becomes enjoyable.

A number of implications for educators have emerged from research on flow and student engagement. Educators foster optimally engaging learning environments not only by creating conditions for flow and intrinsic motivation (e.g., clear goals, optimal challenge, real-life relevance), but also by fostering positive relations and appreciation for the uniqueness of students including their cultural differences. I will share examples of how the Rutgers Center for Mathematics, Science, and Computer Education has worked to create optimally engaging environments through project-based learning and the solving of real-life problems.