

# CIOS: What does the research say?

End-of-semester feedback from students can be a valuable source of information about our teaching effectiveness. While results are statistically noisy, tools like CIOS provide an estimate of teaching effectiveness, with comments shedding light on student experience.

Claim	What the Research Says
<b>Class Size</b> "Student ratings are affected by class size."	Student ratings have a curvilinear relationship with class size, where small and very large class sizes receive better ratings than medium or large class sizes. (Kuo, 2007)
<b>Difficulty Level</b> "Making the course easier will boost instructor ratings."	Students tend to value learning more highly in challenging courses requiring more commitment. (Hativa, 2013)
<b>Discipline</b> "My discipline has a harder/easier time getting good student ratings."	STEM disciplines have been found to have significantly lower student ratings than non-STEM disciplines. (Cashin, 1990; Kember & Leung, 2011)
<b>Gender</b> "There is gender bias in survey results."	Opinions vary as to the effect of gender on tools like CIOS, and the results of scholarly work on the issue have been mixed. Hativa (2013) reports that no substantive research evidence has been found relating instructor ratings to race, ethnicity, nationality, or other diversity issues.  Boring et al (2016) report the contrary: student evaluations of teaching are significantly correlated with instructor gender, with students regularly rating female instructors lower than male peers.  (See also Centra & Gaubatz, 2000; Huston, 2005; Huston, 2005-6; Mangan & Fleck, 2011)
<b>Grades</b> "High grades will result in better instructor ratings."	There is near-zero correlation between expected or actual grades, and student ratings of instructors. (Abrami et al, 1980; Centra, 2003)
<b>Instructor Popularity</b> "Student ratings are a popularity contest."	Popularity and instructor enthusiasm are moderately correlated with results on student ratings of instructors, but they have also been found to contribute to student learning. As a result, popularity may be a useful, albeit indirect measure of teaching effectiveness. (Aleamoni, 1999)
<b>Workload</b> "Lowering the course workload will improve instructor ratings."	Course difficulty and workload were found to be almost entirely unrelated to instructor ratings. (Hativa, 2013)

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