

Recommended definition of rigor: a process of inquiry- and equity-based learning and interactions between students and students and faculty that which encourages students to achieve their full potential in both academic and broader development

Literature Synthesis:

Student and faculty perceptions are wildly divergent in terms of what “rigorous” means; faculty tend to be more mastery-focused (e.g., analyzing concepts and applying skills in practical ways to the world around them) while students – when they know the term – see “rigor” as workload, effort, and grades. This mismatch of expectations and goals should be addressed very early on in classes in ways that give students autonomy (rather than leaving them out of the discussion and demotivating them).

Part of an expanded definition of rigor is not only building in critical thinking skills at all levels of classroom (e.g., open-ended questions on exams in gen ed classes vs. original capstone research) but also developing and supporting metacognition (i.e., thinking about thinking and better understanding the scope of personal knowledge and the process of drawing their own conclusions), encouraging a growth mindset (intelligence isn’t fixed but grown through effort and learning), and incorporating student knowledge bases and experiences into the classroom.

Best practices in the classroom include: high impact practices such as project-based learning, inquiry-based learning, activities that encourage students to explore themselves and the world around them through the lens of the content material and authentic practices of the discipline, work that involves collaboration (especially collaborative writing) and constructing (and deconstructing) arguments and theories, scaffolding learning (start where the students are and move them up through each assessment), not only providing feedback to students but also discussing with students how to understand and use feedback, providing clear expectations from faculty of and creating environments that are productive for student-centered learning to encourage self-confidence in their academic abilities and motivate students to take ownership of their education. Faculty should also survey students to ascertain where the “challenge” of the course lies; essentially, do students see equivalent gains for the amount of work they are doing for the individual assignments and the course overall (e.g., outputs = inputs)?

Institutions should provide support for faculty to do this in the context of seminars/trainings and development support and monies as well as taking into account that most of these practices see a demonstrated effect *over time* rather than over a specific semester when using teaching evaluations are a form of faculty assessment.

Best practices:

1. *Discuss very early in courses expectations and definitions of rigor and lay out the differing expectations between students and faculty (Developing a Student Conception of Academic Rigor, Promoting Equity and Student Learning: Rigor in Undergraduate Academic Experiences)
2. Scaffold learning (Rigor and Equity by Design: Locating a Set of Core Teaching Practices for the Science Education Community)

3. *Allow for time for metacognition and student reflection on their performance, learning, and thinking that allows for student autonomy and ownership over their education (Creating Stimulating Learning and Thinking Using New Models of Activity-Based Learning and Metacognitive-Based Activities, Assessing the Integration of Embedded Metacognitive Strategies in College Subjects for Improved Learning Outcomes: A New Model of Learning Activity)
4. *Provide frequent feedback and discuss with students how feedback should be used (Promoting Equity and Student Learning: Rigor in Undergraduate Academic Experiences)
5. *Project-based and inquiry-based learning that encourages students to investigate the content (and world) through standard disciplinary practices (Promoting Equity and Student Learning: Rigor in Undergraduate Academic Experiences, Rigor and Equity by Design: Locating a Set of Core Teaching Practices for the Science Education Community)
6. Embed rigor in all levels of the curriculum