

**GUEST EDITORIAL**

Inclusion requires a comprehensive understanding of justice

Educators wish to treat their students and colleagues justly, and equally important, they wish their students to treat one another justly. We believe that the field of justice research provides a strong foundation for promoting diversity and inclusion. In this editorial, we argue that undergraduate engineering teams should be taught how to measure justice, how to structure team processes to increase justice, and how to ameliorate injustice. These lessons can increase the level of inclusion within these teams and prepare students to be inclusive during their professional careers.

Most people would agree that ostracism, a form of exclusion, is the opposite of inclusion. One way to ostracize people is to unjustly deny them a fair share of a distribution, which entails injustice. In fact, when psychologists conduct laboratory research on exclusion, they induce ostracism by distributing resources and opportunities unjustly among group members (Williams & Jarvis, 2006; Williams & Sommer, 1997). Another way to exclude people is through disrespect, the failure to show them the consideration they are entitled to (D. T. Miller, 2001). This failure is also a manifestation of injustice. Thus, justice is a prerequisite for inclusion.

Many universities now have training programs to prevent the unjust treatment of marginalized students. Rather than directly focusing on justice, however, many programs focus on implicit biases or microaggressions (Lilienfeld, 2017a; Russell-Brown, 2018). These programs may have some benefits, but the science behind these topics is still murky (Blanton, Jaccard, Strauts, Mitchell, & Tetlock, 2015; Lilienfeld, 2017a, 2017b; Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013, 2015). In contrast, justice is central to inclusion, and yet most educators, in our experience, are not familiar with the five decades of justice research in sociology, psychology, and organizational behavior. Modern justice research by economists, sociologists, and psychologists dates to mid-20th-century work on social exchange theory, when researchers analyzed just and unjust exchanges of goods (Thibaut & Kelley, 1959). Developments since then have shifted the focus toward implementing fair procedures (D. T. Miller, 2001, pp. 528–530). The consensus today is that at least four dimensions of justice are salient for justice within organizations and teams: distributive justice, procedural justice, interpersonal (interactional) justice, and informational justice (Colquitt, 2001).

1 | DISTRIBUTIVE JUSTICE

Distributive justice is obtained when something is allocated according to the principle that people consider appropriate for the situation (Deutsch, 1975; Fiske, 1992). Often, the principle is equality. When you assign an exam to your class, each student gets the same set of questions; when you open a discussion, every student gets the opportunity to raise their hand; when you bake a cake for your class, each student gets an equal slice. A resource or outcome may also be distributed based on need, rank, or merit. Need-based allocation occurs with remedial coaching, where students who need more assistance get more help. Rank-based allocation between instructors and students occurs when instructors get more physical resources than students from the administration. Merit-based allocations occur with grades and awards. Outcomes are deemed fair if they ensue from a just procedure: an F is acceptable to students if the professor used a reasonable grading rubric consistently. We have supervised project teams in classes that we teach, and a common failure of distributive justice occurs when male students collectively assign the women members organizational or communication tasks, while denying them technical or building

tasks. Other researchers have documented these problems too (Meadows & Sekaquaptewa, 2013; van Dijk & van Engen, 2019).

2 | PROCEDURAL JUSTICE

Procedural justice is obtained when the processes that determine outcomes are unbiased across people and time, and when the creation and revision of these processes occurs after democratic dialogue (Hegtvedt, 2006). People must also have access to redressal if the procedure was deemed to be improperly applied. Students will likely perceive a class as procedurally just when the grading procedure is consistent across students and across exams, when the instructor explains the rationale behind the rubric, and when students can comment on the rubric's fairness. Clarifying whether students may come to the professor's office hours to redress grades is also a form of procedural justice. Absent such clarification, middle-class students may feel more entitled than working-class students to do so (Jack, 2016; Lareau, 2015). Procedural justice not only leads to fair outcomes but also promotes equal status among members.

Failure of procedural justice is often a source of conflict on engineering student teams, and engineering faculty find themselves mediating these conflicts. In one of our problem-based learning courses, for instance, teams of eight students need to create three technical documents over a semester based on research conducted by individual students. Often, for the first document, the team has no procedures for managing this complex task, resulting in a poor grade and disgruntled team members. The team members who put in the most work can feel unjustly treated. However, this is a learning opportunity for the teams. We have found that most teams, prior to writing their next document, collectively develop a set of rules and expectations that help ensure procedural justice. Empirical research suggests that the failure of procedural justice remains a common source of conflict in student teams (Haller, Gallagher, Weldon, & Felder, 2000; Oakley, Felder, Brent, & Elhaji, 2004).

3 | INTERPERSONAL OR INTERACTIONAL JUSTICE

Interpersonal justice (also termed interactional justice) is obtained when people feel trusted and respected, rather than neglected and disrespected (Greenberg, 1993). It is impossible to demarcate where procedural justice ends and interpersonal justice begins. However, interpersonal justice encompasses what most people would consider politeness and decency. For instance, when students are not invited to evaluate a new grading rubric, there is procedural injustice, whereas when students are invited to evaluate the rubric at an inconvenient time, there is interpersonal injustice. Even though the procedure is now fair, its execution is inconsiderate. Instances of interpersonal injustice on student teams marginalize and demotivate team members, but they are all too common. In student teams that we have personally supervised, we have witnessed occasions when the questions and contributions of a Black man were continually devalued or when men repeatedly talked over and silenced women, actions that cascaded into experiences of injustice for the disrespected team members. Other research also suggests that these experiences are common for women and Black men (Davis et al., 2004; Hirshfield & Koretsky, 2017; McGee & Martin, 2011).

4 | INFORMATIONAL JUSTICE

Informational justice is obtained when communications are clear, thorough, and timely (Greenberg, 1993). It does not require that all information be communicated to everyone, but it does require that people promptly get all the information pertinent to them. People feel mistreated when they are kept in the dark about information that matters to them or when such information is delivered in a manner they find incomprehensible. When administrators fail to promptly inform students about prerequisites or when a team forgets to debrief a temporarily ill team member, there is a failure of informational justice. Informational injustice on student teams is common when the team fails to anticipate and set up procedures for communicating among team members. A member misses a meeting because it was not broadcast and is then blamed for being a poor team member. This member then feels treated unjustly.

5 | APPLICATIONS IN STUDENT TEAMS

Instructors can explain these four justice facets to students using our examples or examples from their own institutions. They can also give students examples of how previous teams have created procedures that everyone on the team perceives as fair and legitimate. They can give students examples of how equality, merit, need, and rank can be used as the basis for distributive decisions within student teams, and they can give students examples of how ostensibly good procedures can fail at the interpersonal or informational level.

Instructors can also distribute copies of the justice questionnaire in the Appendix, which contains questions we adapted for use in an educational setting. For details on the original measure, its validity, and its reliability, see Colquitt and Rodell (2015). After asking students to review the questions, professors can ask students to decide, in advance, how they will share opportunities and duties to ensure justice, and how they will handle disputes about perceived injustice. Instructors can then evaluate students' decisions and point out problems they have overlooked. Instructors may add or remove questions from this questionnaire to fit their context. For formal research, instructors should check the validity and reliability of their modified scale before using it.

If an instructor suspects that a specific bias, such as racial bias, is salient to their class, they may use these questions in pre- and posttests to verify that curriculum changes around the topic of justice are successful. Such changes should increase perceptions of justice among students from racial minority groups.

6 | APPLICATIONS IN INSTRUCTION

Although our primary goal is to explain how to enhance inclusion through increased justice among teammates, instructors may also focus on whether they treat students justly. To begin, instructors could measure each facet of justice in course evaluations using the same questionnaire described above. Distributions are considered fair when they *ensue* from just procedures, so instructors should consider attending to procedural justice before distributive justice.

Because procedural justice is important, instructors may also find it useful to reevaluate current practices. As already noted, an ostensibly fair procedure for calling on students may be biased toward the most extroverted students. A better alternative, though certainly not the only one, is to ask every student to write a brief answer to a discussion question. Then the instructor can call on random students to share answers or ask all students to submit answers through an online system. Blind grading—grading without knowledge of the student's identity—is an exemplary method for enhancing procedural justice and trust (Hanna & Linden, 2012).

Instructors who find this approach helpful can learn about other topics in the psychology and philosophy of justice. A good psychological review is Tyler's (2015) "Social Justice" in the *APA Handbook of Personality and Social Psychology*. A good philosophical review is Miller's (2017) entry on justice in the *Stanford Encyclopedia of Philosophy*. For instructors who are unsure about which subtopics to explore, we have two suggestions. First, if an institution has a high level of economic inequality among students, instructors may look up the veil-of-ignorance thought experiment, which pertains to policies that are just for all members of an otherwise unequal society (Rawls, 1973, 2001). Second, if an institution needs to differentiate between instructors' and students' obligations, instructors may look up the distinction between justice climate and peer justice climate (Li, Cropanzano, & Bagger, 2013). These are merely two entry points—the rest of the literature is equally relevant. We invite all educators to become familiar with this rich literature as they revise their curricula to address inclusion.

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APPENDIX: AN ADAPTATION OF COLQUITT AND RODELL'S (2015) ORGANIZATIONAL JUSTICE MEASURE FOR CLASSROOM USE

Distributive justice

The questions below refer to the outcomes [you receive from your instructor and teaching assistants, such as grades, evaluation, assignments, and penalties]/[you receive from your team, such as peer evaluation, workload assignment, credit for work accomplished, penalties, etc.]. To what extent:

1. Do those outcomes reflect the effort you have put into your work?
2. Are those outcomes appropriate for the work you have completed?
3. Do those outcomes reflect what you have contributed to your work?
4. Are those outcomes justified, given your performance?

Procedural justice

The questions below refer to the procedures [your instructor uses to make decisions about grades, evaluations, assignments, penalties, etc.]/[your team uses to make decisions about work allocation, credit for work you do, peer evaluations, penalties, etc.]. To what extent:

5. Are you able to express your views during those procedures?
6. Can you influence the decisions arrived at by those procedures?
7. Are those procedures applied consistently?
8. Are those procedures free of bias?
9. Are those procedures based on accurate information?
10. Are you able to appeal the decisions arrived at by those procedures?
11. Do those procedures uphold ethical and moral standards?

Interactional justice

The questions below refer to the conversations and e-mail exchanges you have about [your instructor's decisions about grades, evaluations, assignments, penalties, etc.]/[your team's decisions about work allocation, credit for work you do, peer evaluations, penalties, etc.]. To what extent:

12. Have they treated you in a polite manner?
13. Have they treated you with dignity?
14. Have they treated you with respect?
15. Have they refrained from improper remarks or comments?

Informational justice

The questions below refer to explanations your instructor/team offers you as decision-making procedures about [grades, evaluations, assignments, penalties, etc.]/[work allocation, credit for work you do, peer evaluations, penalties, etc.] are implemented. To what extent:

16. Is [your instructor/team] candid when communicating with you?
17. Does [your instructor/team] explain decision-making procedures thoroughly?

18. Are their explanations regarding procedures reasonable?
19. Do they communicate details in a timely manner?
20. Do they tailor communications to meet individual needs?

Note. All items use a five-point scale, where 1 = To a very small extent; 2 = To a small extent; 3 = To a moderate extent; 4 = To a large extent; and 5 = To a very large extent.

Instructors should modify these questions further to fit the size and activities of teams under examination. The reliability of these scales will vary depending on how the questions are modified. If instructors use this measure for research, they should measure the psychometric properties of their modified versions. Because the last three facets are all associated with processes, they may have high intercorrelations. For details on the original scale, see Colquitt and Rodell (2015).