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Enhancing inclusive teaching measurement: The development of the power-sharing practices checklist

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Abstract

Inclusive teaching has become one of the most frequently written-about topics in the scholarship of teaching, learning, and educational development. However, the field's advancement is limited by overreliance on faculty perspectives, affective student measurement, and a lack of measurement tools for specific instructor behaviors that promote inclusion. The present study took a multi-step, mixed-methods approach to the initial development of a power-sharing practices checklist. The authors created the initial items based on the examination of the literature and focus groups with both faculty and students. The checklist was administered to 276 students and 32 instructors. Results demonstrate initial reliability and validity of the checklist and its relationship to college persistence, university belonging, intrinsic motivation, and professor-student rapport. Students and faculty differed in their perceptions of power-sharing in the classroom, suggesting that faculty attitudes are not always translating to the student experience. Implications for educational developers working to support inclusive pedagogy are provided.

Keywords: power-sharing, inclusive education, student choice, student motivation

Inclusive teaching is generally defined as teaching practices that plan for and engage a diverse student body, aim to be equitable, and emphasize student belonging (Lawrie et al. 2017), though there are many terms utilized to describe similar ideas. More specifically, Dewsbury et al. (2022) describes inclusive teaching as a pedagogical approach that centers relationships and continuous dialogue with students, resulting in a learning environment where all students are valued, supported, and encouraged to be active members of the learning community. Emphasizing belonging, equity, and diversity in the classroom, inclusive teaching has received a great deal of scholarly and practical interest in the last ten years (Addy et al., 2021; Addy et al., 2022; Addy et al., 2024; Bifulco & Drue, 2023; Lawrie et al., 2017). However, despite enthusiasm in the literature and educational development spaces, this approach lacks measurement tools for specific instructor behaviors that promote inclusion. Therefore, the present study describes the development of a power-sharing practices checklist as a vehicle for assessing inclusive teaching.

There are two common rationales for inclusive teaching. Firstly, the current generation of college students is becoming increasingly diverse, with 47% non-white, 31% living in poverty, 45% being first-generation learners, 5% being international, and 20% identifying as having disabilities (Postsecondary National Policy Institute, 2022; U.S. Department of Education, 2019). The second rationale for inclusive teaching is not the changing student demographics but rather the acknowledgement that higher education has been built on a foundation of exclusion, and therefore, inclusive teaching is a social justice issue that must be addressed (Dewey, 1916; Dolmage, 2017; Freire, 2000; hooks, 1994). Therefore, inclusive teaching has become a popular topic in the literature on educational development and scholarship of teaching. Educational developers have been at the forefront of inclusive education efforts to increase student well-being and success (Addy et al., 2021; Addy et al., 2024; Bifulco & Drue, 2023; Cook-Sather et al., 2021; Erby et al., 2021; Lawrie et al., 2017).

One of the strengths of inclusive teaching as a pedagogy is its emphasis on acknowledging not only that students are different and deserving, but also that one method of building true inclusivity in education is to share power with them. Power-sharing is conceptualized as a continuum encompassing a range of opportunities provided by an instructor for students to exercise their voice and make choices within the classroom. This continuum spans from opportunities for students to express their opinions on various issues at one end to opportunities for students to select the focus of class sessions at the other end. For some instructors, allowing a choice of reading or how to participate is an intervention designed to give students more power through choice in the classroom. The extent of power-sharing within a classroom is influenced by multiple factors, including the instructor's pedagogical approach and identity factors, class size, academic discipline, institutional context, and the level of the course, among others. We intentionally chose this broad definition of power-sharing, as an instructor can easily move up (or down) on the continuum, rather than defining power-sharing in a fashion that is an ideal rarely reached in the typical college classroom. There have been numerous examples of innovative teaching methodologies building more power-sharing into the classroom (Danley & Williams, 2020; Owenz, 2023; Rideout, 2018) and several well-defined theories for doing so (i.e., Democratic Education; Trauma-Inclusive Pedagogy; Students-As-Partners, Universal Design for Learning; Cook-Sather et al., 2014; Lynch & Wojdak, 2023; Meyer et al., 2013; Stoddard, 2020). Self-Determination Theory (Ryan & Deci, 2000) provides a context for how power-sharing practices can improve student performance, while inclusive teaching research is beginning to outline practices that can be used to increase student motivation. Both theories are reviewed below.

Self-Determination Theory: Developing Student Autonomy, Competence, and Connectedness

The justification for power-sharing with students typically covers two broad areas: (1) eliciting student ownership for learning and thus

motivation and (2) creating socially just classrooms where students are welcome and respected. Self-Determination Theory (SDT), a psychological theory that explains motivation, can be used to contextualize our emphasis on student choice. SDT importantly separates extrinsic motivation, which comes from outside sources, like grades and the threat of failure, and intrinsic motivation, which is driven by the individual's desire and requires three key variables: autonomy, connectedness, and competence (Ryan & Deci, 2000). The central tenet of SDT is that humans are motivated to grow, which causes them to search for challenges (Ryan & Deci, 2009). SDT has been applied to higher education in theory and practice, as high-quality education experiences can be driven by intrinsic motivation when students connect with one another, have opportunities to (im)prove competence, and are given autonomy to direct their studies (Ryan & Deci, 2009). Higher education students are voluntarily in the class, suggesting they made the choice for further education and thus are capable of making additional choices within the classroom (Alsobaie, 2015). Adults in the college classroom are already increasingly autonomous in their lives, and their social-emotional development is targeted towards independence at this stage (Erikson, 1994); therefore, pedagogical approaches that respect their autonomy and competence are well-matched to their development (Alsobaie, 2015). Additionally, as students progress in their college career and reach upper-level classes, autonomy-supportive course structures may better prepare them to graduate, make significant life choices, and enter the workforce.

Previous research demonstrates a link between intrinsic motivation to learn and time spent studying, academic performance, persistence, deep processing, and lower burnout (Kusurkar et al., 2013; Vansteenkiste et al., 2004). In an environment like a college campus, rich with educational opportunities, once motivation is lit, learning is sure to follow. While intrinsic motivation in students has been well studied, the instructional practices that contribute to students' motivation have received less attention (Goldman et al., 2017; Stenalt & Lassesen, 2022). As autonomy is a particularly important component of

intrinsic motivation in the classroom, utility-value interventions in which students write about the personal relevance of course material show promise in improving motivation, grades, and belonging in the classroom (Canning & Harackiewicz, 2015; Harackiewicz et al., 2016). While utility-value interventions present one avenue of increasing intrinsic motivation, previous SDT research highlights the need for future research to identify more specific teaching practices instructors might use to promote self-determined behavior in their students (Goldman et al., 2017; Stenalt & Lassesen, 2022). The umbrella of inclusive teaching translates theory to practice by outlining classroom attitudes, practices, and policies that aim to establish socially just classrooms and increase student ownership of learning.

Power-Sharing as a Method of Inclusive Teaching

The groundwork for power-sharing in the classroom was laid in seminal writings on democratic education and critical pedagogy (hooks, 1994; Dewey, 1916; Freire, 2000), which apply the principles of social justice to the relationship between students and instructors. As an ideal, power-sharing is a process "where students and instructors decide together what is most important and how to learn it most effectively" and is, therefore, by nature, "dynamic, participatory, and respectful" (Tolman & Lee, 2013, p. 3). There are several pedagogical practices that fall under inclusive teaching and involve sharing power in various degrees with students, including Students-As-Partners (SAP), collaborative learning, learner-centered teaching, trauma-inclusive pedagogy, democratic education, and Universal Design for Learning (UDL). All these theories involve shifting more choice, autonomy, and power to the students (Meinking & Hall, 2020). Power-sharing as a classroom practice to increase inclusivity has been written about in various disciplines and is associated with improved motivation, confidence, and engagement (Bergmark & Westman, 2016); increased autonomy, self-regulation, and responsibility (Deeley & Bovill, 2017); and satisfaction and performance (Rideout, 2018). While less frequently discussed,

high-quality inclusive teaching, which is a significant portion of faculty members' time, can also improve *their* quality of life (Mahavongtrakul et al., 2021). This is not surprising since quality educational development can solve problems (i.e., grading issues) and give faculty tools to improve their relationships with students. For example, faculty in our focus groups reported that providing choice to students (i.e., around deadlines) provided them with several benefits, including less back-and-forth with students around extensions and late papers and better rapport with their students (Author & Author, in preparation). Additionally, identifying with inclusive teaching can link purpose and meaning to faculty members' key responsibilities, offering opportunities for autonomy in course design, competence in teaching, and connectedness with students in the classroom (Ryan & Deci, 2000).

A recent review of inclusive teaching in the United States was done by Addy et al. (2021) and found that while knowledge of inclusive teaching was high among the sample, barriers including lack of departmental and institutional support influenced its implementation. Power-sharing in the classroom is certainly affected by the instructional and institutional context, and the instructor's identity may impact their ability to power-share and how it is perceived. For example, in our focus group study, several instructors reported that a facilitator of power-sharing for them was job security, often in the form of tenure, that permitted them to engage in such activities with lessened fear of how it would be perceived by peers (Author & Author, in preparation). However, many of the inclusive teaching strategies measured in previous research are vague and ineffective, such as "implement instructional practices that promote equitable experiences" and "create learning environments that encourage equitable interactions between diverse students" (Addy et al., 2021). While scholars have been concerned with inclusive teaching, "as a broad approach that emphasizes equity," educational developers have been more focused on specific teaching strategies and behaviors, as these can be taught and measured (Mirakhur et al., 2022, p. 5). Participants in a previous study suggested

that educational development on inclusive teaching "should include tangible practices that were clear, practical, and easy to implement" (Bifulco & Drue, 2023, p. 145). Like the evolution in trauma-inclusive pedagogy from mere awareness of trauma impacts to a "concrete set of strategies" (Lynch & Wojdak, 2023, p. 156), we recognize that the dissemination and adoption of inclusive teaching practices may benefit from a set of concrete, measurable instructor behaviors.

Sharing power is one of the most effective tools to support the ethos of inclusive teaching by clearly signaling respect for student autonomy and competence and building connections between an instructor and students through this respect. A piece of the hidden curriculum that students are absorbing from faculty is how to treat others when one is in a position of power; therefore, part of a faculty member's work, if truly concerned with using teaching to "create a more just society," is to model how to give up power for equity, improved relationships, and a superior educational experience for all (Erby et al., 2021; Owenz, 2023). A faculty member in a previous educational development study reflected that inclusive pedagogy requires one to "forfeit some of the power and prestige" of a faculty member (Erby et al., 2021, p. 284). Much of the research on power-sharing with students includes individual classroom studies (Danley & Williams, 2020), an emphasis on professor over student perspectives (Addy et al., 2021), or is theoretical in nature (Alsobaie, 2015; see Addy et al., 2024 for an exception). Faculty perspectives of power-sharing (Addy et al., 2021; Bifulco & Drue, 2023) may or may not be experienced as true power-sharing by students.

Power-Sharing Measurement

There are several well-developed scales that measure student motivation and feelings, including belonging and positive feelings towards professors (Goldman et al., 2017; Slaten et al., 2018; Vallerand et al., 1992; Wilson et al., 2010). Additionally, there have also been some recent advancements in developing scales that measure higher

education faculty attitudes towards inclusive teaching (Addy et al., 2021; Emmers et al., 2020; Lombardi & Murray, 2011; Lynch & Wojdak, 2023) as well as protocols for observing inclusive teaching practices (Addy et al., 2022). While there appear to be a variety of measures that are loosely related to power-sharing practices, the field of inclusive teaching has several major limitations. The first limitation is the vast number of terms and theories, which include power-sharing with students. Universal Design for Learning (Meyer et al., 2013), democratic classrooms (Stoddard, 2020), Trauma-Inclusive Pedagogy (Lynch & Wojdak, 2023), and Students-As-Partners (Cook-Sather et al., 2014) are just a few theories that share a key practice: providing students voice and choice in the classroom (Lawrie et al., 2017). The second major limitation is that the ability to systematically measure power-sharing practices has been limited, as there is no scale designed to do so. Instead, research has relied on qualitative accounts, observational protocols (Addy et al., 2022), or single-use surveys designed within the study (Bifulco & Drue, 2023; Danley & Williams, 2020; Lynch & Wojdak, 2023). The third limitation of the scholarship on power-sharing with students is an overemphasis on affective outcomes (i.e., "I feel included" or "I feel my voice matters;" Addy et al., 2021) and a lack of attention paid to behavioral components of power-sharing. The feeling of inclusion can exist without the practices due to identity factors (i.e., identity matching among students or between students and faculty members) (Addy et al., 2022). Finally, the fourth limitation of power-sharing research has been an over-reliance on faculty perspectives (Addy et al., 2021), although recent research has highlighted the importance of student voices (Addy et al., 2024). Researchers have written about and studied faculty attitudes towards inclusion (Addy et al., 2021), faculty syllabus language (Tolman & Lee, 2013), and faculty power-sharing and inclusive theories (Alsobaei, 2015). In fact, Cook-Sather et al. (2021, p. 105) recently wrote, "Most educational development does not draw directly on the experiences and perspectives of students." Whether faculty attitudes and values translate to actual power-sharing practices that are recognized by students remains to be measured. As

a good assessment is also intervention, a behavior-focused scale can assist educational developers by offering faculty examples of concrete behaviors to increase classroom inclusivity.

Power-Sharing Practices Checklist for College Students Item Development

We sought to develop and test a measure of power-sharing practices by drawing on the knowledge from theory, previous work on inclusion and student autonomy, and the research team's recent qualitative work. In order to "amplify student voices," as recommended in educational development literature (Cook-Sather et al., 2021), our study intentionally included students throughout, both as participants and through the involvement of a student researcher, with the goal outcome being a measure developed by students for students. A large body of work on scale development emphasizes utilizing the knowledge of those with lived experience to operationalize the construct through interviews, panels, or focus groups (Mallinckrodt et al., 2016). Firstly, as a part of a study on inclusive teaching practices (Author & Author, in preparation), focus groups were conducted with a national sample of 30 faculty members. Among other questions, faculty were asked about if and how they shared power with students in the classroom. Specifically, in line with our definition of power-sharing, faculty were asked questions about how they give "voice" and "choice" to students within their classrooms. In parallel, in another study by this team, focus groups were conducted with a sample of 30 college students where they were asked a similar set of questions about if/how faculty members have power-shared with them by giving them voice and choice in the classroom (Author & Author, in preparation). Because a previous challenge to the field has been a lack of student perspectives on inclusive practices (see Cook-Sather et al., 2021 for a critique and exception), our work centered students in the interview process for the development of the items. A faculty member and student-researcher team used thematic analysis to code the data from these two studies

(Terry et al., 2017). Items pertaining to power-sharing clustered around four sub-themes in both studies: activities, policies, assessments, and materials (Author and Author, in preparation; see Figure 1).

Students described these practices as critical to their sense of autonomy, belonging in the classroom, and competence (Ryan & Deci, 2000; Ryan & Deci, 2009). Faculty frequently described providing voice and choice to respect students' autonomy and competence and as a method of promoting connection in the classroom (Ryan & Deci, 2000; Ryan & Deci, 2009).

Two researchers (a faculty member and a student researcher) worked independently, utilizing the content of these four subthemes to create a pool of 46 possible items describing power-sharing practices. The two researchers worked together to review the items. We refined the items by asking the following questions: (1) Could the item be written such that professors or students could respond to the questions? (2) Is the item written at a sixth-grade reading level? (3) Is the

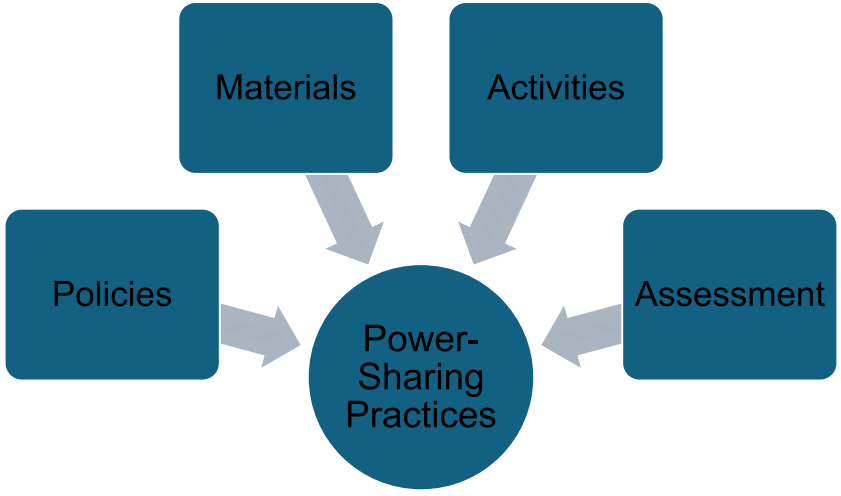

Figure 1. Power-Sharing Practices Model

Note. Figure illustrates the components of power-sharing practices based on qualitative focus group analysis with students and faculty. A central circle labeled "Power-Sharing Practices" is surrounded by four boxes (policies, materials, activities, and assessment), with arrows pointing toward the circle.

item representing a unique idea (not repetitive)? (4) Is the item directly reflecting an idea from the focus group participants? Original items were refined, reworded, and collapsed together based on these four questions. After culling and item review, we retained 31 items, which served as the Power-Sharing Practices Checklist for College Students in this present study.

Preliminary Psychometric Evaluation of the Power-Sharing Practices Checklist for College Students

The purpose of the study was to preliminarily evaluate the psychometric properties of the Power-Sharing Checklist for College Students. Firstly, we explored the checklist items using internal consistency measures and descriptive statistics. Secondly, we completed an exploratory factor analysis to understand the underlying structure of our checklist. Thirdly, we explored the relationship between the checklist and other variables related to college student flourishing to determine if it was conceptually related to the variables we expected. We expected it to be positively related to college persistence, university belonging, intrinsic academic motivation, and professor-student rapport. In contrast, we expected it to be negatively correlated with measures of student floundering, including feelings of burnout, extrinsic academic motivation, and amotivation. Fourthly, we examined whether college students and college faculty answer the checklist questions differently with inferential statistics.

Method

Participants

The primary participants were 276 students enrolled at one of three institutions located in Pennsylvania: one small, private, liberal arts institution (n = 37), one public, medium-sized, primarily undergraduate

institution (n = 221), and one public, large doctoral-granting institution (n = 18) (Indiana University Center for Postsecondary Research, n.d.). The sample consisted primarily of traditional college-aged students (95%, 18–24 years). There were 193 female participants, 71 male participants, 8 non-binary participants, and 4 who declined to answer. The sample was majority White (69%), with 7% Asian or Pacific Islander, 6.3% Black or African American, 12% Hispanic or Latinx, 3.3% Multiracial, 0.3% Native American, and 1% who preferred not to answer. The students were representative of a variety of student subpopulations, with 20% being registered with disability services offices, 45% identifying as honor students, 3.3% identifying as primary caregivers, 29% identifying as student athletes, and 2% identifying as veterans. Student majors were primarily in the social and natural sciences (81%).

Another set of 32 participants was recruited from a US national sample of faculty at institutions of higher education. There were 25 female participants, 6 male participants, and 1 non-binary participant. The sample was primarily White (82%), followed by 9% Black or African American, 6% Asian or Pacific Islander, and 3% Hispanic or Latinx. Regarding rank and position, 39% of faculty were tenured associate professors, 8% were tenured full professors, 6.5% were assistant professors pre-tenure, 6.5% were associate professors pre-tenure, 9.7% were lecturers, and 3.2% were adjunct professors. The majority of the sample (90%) was employed full-time. While specific sub-disciplines varied, similar to the majors represented in the student sample, 100% of the sample were teaching in the social and natural sciences. The faculty came from a variety of institution types as classified by Carnegie (43% from doctoral-granting universities, 27% from baccalaureate colleges, 27% from master's colleges or universities and 3% unclassified) (Indian University Center for Postsecondary Research, n.d.).

Materials

The newly developed Power-Sharing Practices Checklist, along with five well-validated measures of academic engagement and disengagement,

was administered to survey participants. The measures utilized, including their purposes, reliability, and validity, are described below.

Power-Sharing Practices Checklist for College Students

We used the initial 31-item Power-Sharing Practices Checklist with a five-point frequency response set ranging from 1 = *never* to 5 = *always,* with higher scores indicating more power-sharing. The checklist was composed of four theoretical factors: Activities, Policies, Assessments, and Materials. For the student version, question stems began with "My professor…," and for the faculty version, question stems began with "I…." Sample questions include "My professor asks for our input in planning class topics" and "My professor provides choice in questions we answer for exams, discussions, or papers." Because of the different stems ("I" vs. "My professor(s)"), the student sample had the choice to respond with a specific professor or set of professors in mind. All checklist items, along with means and standard deviations, are in Table 1.

Table 1. ***Power-Sharing Practices Checklist for Students Items***

Instructions: Thinking back to the last academic year, how often did your professors do each of the following:

Domain	Question	Mean	Standard Deviation
Activities	My professor invites students to participate in discussions.	4.08	0.76
	My professor asks for our input in planning class topics.	2.63	1.14
	My professor asks for our input in planning class assignments.	2.42	1.07
	My professor allows us to choose our topics for presentations, papers, or projects.	3.43	0.95
	My professor offers different ways to participate in class (verbally, through software).	3.31	1.07
	My professor uses polls or chat features to hear feedback from students.	2.55	1.21
	My professor allows us to select our own groups or partners for classwork.	3.47	1.00
	My professor utilizes activities in class in which the students are active participants.	3.60	0.92

(Contd.)

Domain	Question	Mean	Standard Deviation
	My professor allows us to pick the class topics we will be learning about.	2.04	1.17
	My professor encourages student directed conversations or seminars as a learning activity.	3.21	1.04
Policies	My professor involves students in the grading process (determining grades, rubrics, etc.).	2.19	1.16
	My professor asks for feedback on how the class is running.	2.98	1.18
	My professors have their own course evaluations during the semester to check for student feedback.	2.93	1.33
	My professor adjusts their teaching based on questions students pose.	3.02	1.03
	My professor offers flexibility in assignment due dates.	3.14	0.99
	My professor offers choice in how we attend class (i.e., physically versus remotely).	2.00	1.15
	My professor offers multiple ways of communicating with them (i.e., via office hours, e-mail, chat platforms, phone).	4.11	0.95
	My professors allow us to "not participate" when the topic is personally uncomfortable.	3.43	1.20
Assessment	My professor invites us to teach sections of the class.	1.92	1.10
	My professor provides choices in questions we answer for exams, discussions, or papers.	2.67	1.11
	My professor uses students as partners in the classroom to provide feedback regarding teaching.	2.57	1.12
	My professor allows us to choose the methodology of projects, i.e., a presentation, a poster, or a podcast.	2.70	1.12
	My professor allows us to create our own exams.	1.66	1.07
	My professor allows us to discuss or provide rebuttals for how we believe we should be graded on particular assignments.	2.40	1.12
	My professor allows us to choose where and when we take our exams.	2.39	1.19
	My professor allows us to revise our submitted work.	2.75	1.07
	My professor allows us to build/contribute to rubrics or standards for how we will be graded.	2.05	1.10
	My professor uses self-assessment grading.	2.13	1.13
	My professor allows us to tailor assignments to our interests.	2.61	1.13
Materials	My professor allows us to choose what we read for a given topic.	2.48	1.12
	My professor allows choice in how we learn about a topic, i.e., by watching a video, listening to a podcast, or reading an article.	2.47	1.11

College Persistence Questionnaire

The College Persistence Questionnaire (CPQ) was developed to better predict retention in higher education (Davidson et al., 2009). It has 34 items that are scored on a five-point Likert scale with response sets including frequency, satisfaction, and agreement, which are converted into favorability scores ranging from 1 to 5, with higher scores indicating positive college experiences. The scale contains the following six subscales: Academic Integration, Social Integration, Support Services Satisfaction, Degree Commitment, Institutional Commitment, and Academic Conscientiousness. Following factor analysis, the validation study found that the Institutional Commitment, Academic Integration, and Academic Conscientiousness subscales were predictors of enrollment status after controlling for high school rankings and standardized test scores. Sample items included "How much do you believe that you will earn a degree from your current institution?" and "How much of a connection do you see between what you are learning here and your future career possibilities?" Alpha coefficients for the subscales in the original study ranged from 0.63 to 0.81 (Davidson et al., 2009). Subscale alphas ranged from 0.67 to 0.84, with a total scale alpha of 0.91 in this study.

University Belonging Scale

The University Belonging Questionnaire (UBQ) is a three-factor, 24-item measure with a five-point Likert response set ranging from *strongly disagree* to *strongly agree*, with higher scores indicating greater belonging (Slaten et al., 2018). The items are organized into three factors, confirmed in two large samples of university students: university affiliation, university support and acceptance, and faculty and staff relations. The UBQ has good convergent and incremental validity and is associated with measures of social support, belonging in general, and connectedness. Sample items include "I believe that a faculty/staff member at my university cares about me" and "I have

found it easy to establish relationships at my university." Alpha coefficients for the subscales in the original validation study ranged from 0.88 to 0.92 (Slaten et al., 2018). Subscale alphas ranged from 0.90 to 0.92, with a full-scale alpha of 0.94 in this study.

Single-Item Burnout

The single-item burnout measure was developed to be a non-proprietary measure similar to the licensed Maslach Burnout Inventory, for which it was found to be a valid and reliable substitute with a correlation of 0.79 and a sensitivity of 83.2% (Dolan et al., 2015). The item has five possible responses, ranging from "I enjoy my work. I have no symptoms of burnout" to "I feel completely burnout out and wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help," and therefore, a higher score indicates greater burnout.

Academic Motivation Scale

The Academic Motivation Scale (AMS) was theoretically developed based on self-determination theory, originally validated in France and cross-culturally validated in the United States (Vallerand et al., 1992). Confirmatory factor analysis confirmed a seven-factor structure: three types of extrinsic motivation, three types of intrinsic motivation, and amotivation. In response to the prompt, "Why do you go to college?," sample items include "Because I experience pleasure and satisfaction while learning new things" (intrinsic), "Because I think that a college education will help me better prepare for the career I have chosen" (extrinsic), and "Honestly, I don't know; I really feel that I am wasting my time in school" (amotivation). In the present study, items were scored on a five-point Likert response set ranging from *Does not apply to me* to *Perfectly applies to me*. Subscale alphas ranged from 0.76 to 0.90, with a full-scale alpha of 0.93 in this study.

Professor-Student Rapport Scale

The Professor-Student Rapport Scale (Wilson et al., 2010) was originally developed through student-generated descriptions of rapport with professors. The scale has a single-factor structure with originally-generated 44-item scores on a five-point Likert scale ranging from *strongly disagree* to *strongly agree*, with higher scores indicating a positive relationship between professor and student. Previous research has found the scale to be correlated with measures of student motivation, student attitudes towards course and instructor, and perceptions of learning (Wilson et al., 2010). The scale has high internal consistency ($\alpha = .89$) and high test-retest reliability ($r = .72$, $p < .001$) (Wilson et al., 2010). Sample items include "My professor and I get along" and "My professor encourages questions and comments from students." This scale had an alpha of 0.97 in this study.

Procedure

Following approval by the Institutional Review Board (Protocol #: IRB07112022), the student sample was recruited through outreach (e-mail and social media solicitation, flyers, and course and club announcements) at three universities located in Pennsylvania. Inclusion criteria included a requirement to be a current college student and at least 18 years of age. Respondents completed measures on a web-based survey platform (Qualtrics) and were compensated $10 for their participation. A total of 323 students completed the first page of the survey; however, 47 of those participants were excluded from analysis due to having missing data in greater than 10% of the items (Mallinckrodt et al., 2016). The faculty sample was similarly recruited through faculty listservs and announcements. For all remaining missing data, available item analysis was used to increase accuracy of results, and no data was imputed.

Results

Reliability and Distribution of the Checklist

Reliability analyses found that each of the four theoretical subscales of the Power-Sharing Practices Checklist (PSP) has good internal consistency (PSP Activities α = 0.82; PSP Assessment α = 0.89; PSP Materials α = 0.74; PSP Policies α = 0.77). Items are scored from 1 to 5, with higher scores indicating a greater degree of power-sharing. The item mean for each subscale was calculated (Activities *M* = 3.08, *SD* = 0.65; Assessment *M* = 2.35, *SD* = 0.78; Materials *M* = 2.48, *SD* = 0.99; and Policies *M* = 2.97, *SD* = 0.70). For all checklist item means and standard deviations, see Table 1. While the subscale means suggest mid-range levels of power-sharing, they are sensitive to extreme data. Several items were highly skewed (less than –1 or greater than +1; Bulmer, 1979), which may have affected factor analysis results (see below). Skewness and Kurtosis values of the Power-Sharing Practices Checklist items are located in Table 2.

Table 2. Skewness and Kurtosis Values for PSP Items

PSP Item	*Skewness*	*Standard Error*	$Z_{Skewness}$	*Kurtosis*	*Standard Error*	$Z_{Kurtosis}$
Activities1	–0.69	0.15	–4.72	1.00	0.29	3.41
Activities2	0.43	0.15	2.90	–0.56	0.29	–1.93
Activities3	0.57	0.15	3.91	–0.09	0.29	–0.31
Activities4	–0.39	0.15	–2.64	0.01	0.29	0.05
Activities5	–0.22	0.15	–1.51	–0.65	0.29	–2.24
Activities6	0.35	0.15	2.42	–0.81	0.29	–2.79
Activities7	–0.51	0.15	–3.46	0.09	0.29	0.32
Activities8	–0.45	0.15	–3.09	0.02	0.29	0.08
Activities9	1.04	0.15	7.11	0.16	0.29	0.56
Activities10	–0.21	0.15	–1.40	–0.44	0.29	–1.51
Policies1	0.73	0.15	4.98	–0.35	0.29	–1.21
Policies2	0.08	0.15	0.56	–0.85	0.29	–2.87
Policies3	0.02	0.15	0.12	–1.11	0.29	–3.81

(Contd.)

PSP Item	*Skewness*	*Standard Error*	$Z_{Skewness}$	*Kurtosis*	*Standard Error*	$Z_{Kurtosis}$
Policies4	–0.08	0.15	–0.57	–0.44	0.29	–1.49
Policies5	0.04	0.15	0.26	–0.28	0.29	–0.95
Policies6	1.07	0.15	7.32	0.31	0.29	1.05
Policies7	–1.00	0.15	–6.79	0.56	0.29	1.92
Policies8	–0.31	0.15	–2.09	–0.80	0.29	–2.74
Assessment1	1.05	0.15	7.18	0.30	0.29	1.04
Assessment2	0.21	0.15	1.42	–0.58	0.29	–1.98
Assessment3	0.27	0.15	1.84	–0.56	0.29	–1.92
Assessment4	0.06	0.15	0.38	–0.70	0.29	–2.41
Assessment5	1.57	0.15	10.72	1.58	0.29	5.40
Assessment6	0.39	0.15	2.68	–0.62	0.29	–2.12
Assessment7	0.45	0.15	3.08	–0.78	0.29	–2.66
Assessment8	–0.04	0.15	–0.27	–0.54	0.29	–1.85
Assessment9	0.78	0.15	5.30	–0.30	0.29	–1.03
Assessment10	0.83	0.15	5.68	–0.04	0.29	–0.13
Assessment11	0.17	0.15	1.16	–0.70	0.29	–2.38
Materials1	0.37	0.15	2.52	–0.57	0.29	–1.97
Materials2	0.40	0.15	2.75	–0.52	0.29	–1.79

Structure of Power-Sharing Practices Checklist

An exploratory factor analysis was completed to validate the survey structure and in anticipation of a confirmatory factor analysis in a later study. The Kaiser-Meyer-Okin (KMO) test was utilized to calculate a measure of sampling adequacy (MSA) and see if the data was appropriate for factor analysis. The test resulted in an overall MSA value of 0.93, indicating that the data was a good fit for factor analysis (n = 276). Factors were extracted using principal axis factoring with an oblique-rotation method (direct oblimin) in R, as the data represents latent variables. A scree plot indicated that two to three factors were sufficient because the slope of the scree plot flattened significantly after the second factor (Kahn, 2006; Worthington & Whittaker, 2006). Following the recommendations of Worthington and Whittaker

(2006), an item was retained if its loading was greater than .32 on a factor and did not load within an absolute value at or above .15 on any other factor. The checklist was refined through an iterative process of deleting items that failed to adequately load onto a factor and conducting a new factor analysis with the remaining items (Kahn, 2006). After several iterations and looking at two- and three-factor model combinations, it was concluded that no result had favorable statistical results and comprehensible factors. From the statistical perspective, no model could explain more than 42% of the variance in the data, even after refinement and using different rotation techniques. The exploratory factor analysis also significantly reduced the number of scaled items and had unintuitive groupings. Closer inspection found that the variables that were consistently included in the factors were also the items that had skewness in their distribution, indicating that these questions could be skewing the model overall. As a test, these outlying variables were temporarily excluded before redoing the exploratory factor analysis again, which produced more unfavorable results. While the exploratory factor analysis did not validate the survey statistically, it does support the idea that power-sharing inherently has increased variance that may be better suited for a checklist assessment structure.

Validity of Power-Sharing Practices Checklist

Correlations between the PSP and other scales of interest were calculated to explore the validity of the checklist. As expected, the PSP was significantly positively related to important variables of college student flourishing, including college persistence, university belonging, intrinsic motivation, and professor-student rapport. The PSP was not significantly negatively or positively correlated with extrinsic motivation or burnout, as predicted. All correlations are located in Table 3.

Table 3. Descriptive Statistics and Correlations for Study Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8
1. PSP	276	85.25	19.90	—							
2. CPQ	276	129.73	17.19	0.25**	—						
3. UBQ	276	92.53	16.86	0.35**	0.74**	—					
4. Burnout	276	2.69	0.95	–0.06	–0.29**	–0.25**	—				
5. Amot	276	6.67	3.95	0.20**	–0.48**	–0.19**	0.25**	—			
6. Extr	276	47.10	8.84	0.08	0.45**	0.35**	0.02	–0.36**	—		
7. Intr	276	40.01	10.41	0.35**	0.53**	0.50**	–0.19**	–0.23**	0.62**	—	
8. PS Rap	276	176.41	28.48	0.24**	0.65**	0.43**	–0.10	–0.42**	0.44**	0.41**	—

Note. PSP = Power-Sharing Practices Checklist; CPQ = College Persistence Questionnaire; UBQ = University Belonging Questionnaire; Burnout = Single-Item Burnout Scale; Amot= Academic Motivation Scale Amotivation Subscale; Extr = Academic Motivation Scale Extrinsic Motivation Subscales; Intr = Academic Motivation Scale Intrinsic Motivation Subscales; PS Rap = Professor Student Rapport Scale

*$p < .05$. **$p < .01$.

Differences Between Faculty and Student Scores

Independent samples *t*-tests were performed to determine differences between the faculty and student sample, and Cohen's *d* was used to interpret effect sizes with anchors of small ($d = .2$), medium ($d = .5$), and large ($d > .8$) (Cohen, 1988). There was a significant difference between faculty and students on all four scales of PSP. On the activities subscale, faculty ($M = 37.75$, $SD = 5.33$) scored higher than students ($M = 30.75$, $SD = 6.50$), $t(306) = –5.86$, $p < .001$, $d = 1.17$. On the materials subscale, faculty ($M = 6.31$, $SD = 1.94$) scored higher than students ($M = 4.95$, $SD = 1.99$), $t(306) = –3.67$, $p < .001$, $d = 0.69$. On the assessment subscale, faculty ($M = 33.09$, $SD = 7.21$) scored higher than students ($M = 25.80$, $SD = 8.57$), $t(306) = –4.62$, $p < .001$, $d = 0.92$. On the policies subscale, faculty ($M = 30.28$, $SD = 4.13$) scored higher than students ($M = 23.75$, $SD = 5.59$), $t(306) = –6.41$, $p < .001$, $d = 1.32$. However, there was no significant difference for faculty and students on other measures of interest, including professor-student rapport $t(306) = –0.29$, $p = 0.77$, university belonging $t(306) = 0.34$, $p = 0.73$, or burnout $t(306) = 0.00$, $p = 1.00$. All *t*-test results can be found in Table 4.

Table 4. ***Results of T-Tests Between Faculty and Students***

Scale & Sub-Scales	Faculty		Students		*t*(306)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Total PSP	107.44	16.56	82.25	19.90	–6.06	<.001	1.21
Activities Subscale	37.35	5.33	30.75	6.50	–5.86	<.001	1.17
Assessment Subscale	33.09	7.21	25.80	8.57	–4.62	<.001	0.92
Materials Subscale	6.31	1.94	4.95	1.99	–3.67	<.001	0.69
Policies Subscale	30.28	4.13	23.75	5.59	–6.41	<.001	1.32
University Belonging	91.44	18.18	92.53	16.86	0.34	0.73	0.06
Burnout	2.69	1.20	2.69	0.95	0.00	1.00	0.00
Professor-Student Rapport	177.91	13.45	176.41	28.48	–0.29	0.77	0.06

Discussion

The purpose of this study was to develop a measure of power-sharing instructional practices that emphasizes student perspectives of actual instructor behaviors and could be used across various theoretical approaches to inclusive teaching (i.e., Universal Design for Learning, Students-as-Partners, Learner-Centered Teaching, and Trauma-Inclusive Pedagogy). Results suggest the created Power-Sharing Practices Checklist (PSP) is an internally consistent and valid measure for assessing these instructional practices. The newly created measure was meaningfully related to other variables that are associated with college student success, including persistence, belonging, motivation, and professor-student rapport. The results are consistent with previous work, which suggests classroom practices that promote a sense of autonomy, competency, and connectedness (Ryan & Deci, 2009) are related to student success and motivation (Kusurkar et al., 2013; Rideout, 2018; Vansteenkiste et al., 2004). While power-sharing may be particularly important for certain groups of students (those who have experienced trauma, those who have a disability, or those whose identities have been traditionally marginalized in higher education), previous research on Universal Design for Learning and Trauma-Inclusive

Pedagogy suggests voice and choice benefit *all* students (Lynch & Wojdak, 2023; Meyer et al., 2013).

There was no significant relationship between the scale and measures of student floundering, including extrinsic motivation and burnout. Additionally, we hypothesized the scale would be negatively correlated with amotivation, and instead, it was positively correlated. Regarding the two variables of student floundering, which the scale did not have a relationship with as predicted (extrinsic motivation and burnout), we interpret this null finding to mean that there may be many more factors than whether an instructor power-shares in the classroom that would come together to predict burnout and extrinsic academic motivation. Previous research highlights that more stable factors, like personality and cynicism, are strong predictors of burnout (Jacobs & Dodd, 2003; Wang et al., 2024). Similarly, academic motivation has been found to have several correlates, including teacher interactions, participation in extracurriculars, and identity factors, suggesting it is multidetermined (Trolian et al., 2023). It is perhaps not surprising that a positive classroom like power-sharing would be correlated with indicators of student flourishing (college persistence, belonging, intrinsic motivation, and professor-student rapport), but the absence of power-sharing is a common experience and therefore not sufficient to correlate with indicators of student floundering. While autonomy, connectedness, and competence in the classroom might be protective against burnout or exclusively extrinsic motivation, their absence does not appear sufficient to predict those multifaceted variables. Regarding amotivation, we do not have a theoretical or practical rationale for the significant finding. Prior to interpreting this unexpected finding, we would like to replicate it in another sample.

We used diverse focus groups of faculty and students, in addition to theory, to help us develop the checklist items. This step allowed us to be successful in our goal of creating a checklist that was grounded in and represents many forms of power-sharing that may be present in a classroom based on various pedagogical theories the instructors may subscribe to (i.e., Students-As-Partners, Universal Design for

Learning). Students experience power-sharing, not particular instructor pedagogical theories. In addition to providing initial evidence of a reliable, valid checklist that is broadly applicable in inclusive higher education, the interpretation of our results supports two uses of the scale: (1) using the scale as a checklist, which accounts for class context and varied power-sharing goals, and (2) using the checklist within one class or program to check for alignment between faculty goals and perceptions of power-sharing practices and the student experience.

Use of All Items as a Checklist Accounting for Class Context

The EFA did not produce meaningful factors because the initial model identified only one factor and favored scale items that were skewed. Therefore, the typical purpose of factor analysis, which is to narrow down questionnaire items to those that are most predictive, was not successful in this study. Upon examination of the factor analysis results, we chose to maintain the full range of items, suggesting it may be used as a checklist, which accents more variability in class type and context. We favor this use of the full questionnaire as a checklist because power-sharing is not domain specific; different items on the scale may be more meaningful in different disciplines or levels of higher education. Additionally, faculty and students may endorse different behavioral practices. In light of the expected variance on this measure, we interpreted the factor-analysis results as support to not pare down items but instead keep the entire list of options for power-sharing, as different items may be more meaningful in different samples. For illustration purposes, drawing on discussions from our focus groups, perhaps in a nursing class with very strict curriculum guidelines, the instructor is unable to power-share the planning for class topics due to licensing and board requirements. However, the instructor may be able to power-share with students by inviting them to collaboratively determine their grades based on a rubric for skill demonstration. In an opposing scenario, perhaps a psychology professor can power-share around planning class topics in an introductory course but cannot

power-share around the grading process due to departmental or university guidelines. Therefore, we believe eliminating items would not permit enough variance for the varied class and university contexts. In support of the use of the full scale as a checklist, it was meaningfully related to other variables of interest and had strong internal consistency. Therefore, we had a strong theoretical and data-based rationale to maintain the full range of items.

In contrast to the current fervor of work on inclusive teaching and educational development (Addy et al., 2021; Bifulco & Drue, 2023; Cook-Sather et al., 2021; Erby et al., 2021), our work found that power-sharing practices are less frequently experienced by students. The skewness of the data suggests a polarity for several practices: students have either experienced it or have not. Following the standard practice of removing variables with high skewness would remove the natural variance that exists in power sharing. However, power-sharing need not be a dichotomy. Instead, the context of the class (large vs. small, upper-level vs. introductory, topics with one vs. many solutions), the program, the university, and the instructor's identity are critical in determining the appropriate degree of power-sharing, not whether it occurs or not (Tolman & Lee, 2013). Instructors cannot share power that they do not have (because of program rules, university policies, or instructor identity), and therefore, maintaining all items on the checklist permits greater variance in the definition and measurement of power-sharing. The checklist may also provide programs and faculty ideas for increasing power-sharing, if that is a current goal. There has been an increase in studies that evaluate student choice practices in assessment (Deeley & Bovill, 2017; Rideout, 2018) and activities (Danley & Williams, 2020); the checklist centralizes these ideas into one measure, increasing faculty awareness of potential opportunities for power-sharing within classes.

Because higher education professors often rely on expert power, meaning instructors have influence because of their specialized knowledge or skills, teaching is, in and of itself, a "transfer of expert power from teacher to student" (Alsobaie, 2015, p. 159). Therefore, it logically follows that more advanced students would themselves have more

expert power and therefore may be ready for more choice (autonomy) within the classroom. We are not suggesting that a complete transfer of power from faculty to students is superior, but rather that depending upon the goals and context of the class, the PSP Checklist offers one way of assessing whether the professor's practices are consistent with their power-sharing goals.

Faculty and Student Samples Had Different Perceptions on Power-Sharing Practices

In this study, students and faculty had significantly different results on the PSP. It is important to note that our faculty and student samples were independent; therefore, their different scores on the PSP may be due to truly different classroom experiences. Additionally, our faculty and student samples are context-specific, as most taught or were majoring in the social and natural sciences and self-selected into a study of power-sharing practices in the classroom, suggesting it may have been important to them (particularly for faculty). However, it is interesting that while students and faculty had significantly different results on the PSP, these independent samples did not have significantly different results on several other closely related measures, including university belonging, burnout, and professor-student rapport. Professor-student rapport is another measure that specifically measures instructor behavior and interactions between students and faculty. Interestingly, even though our faculty and student samples were independent, their scores on the Professor-Student Rapport were not significantly different, suggesting their overall experiences of relationship rapport were similar. However, their experiences of power-sharing were significantly different, and those differences were large in magnitude on the four subscales: activities, assessments, materials, and policies. Our results suggest that for this particular sample of students and faculty, the student perspective was distinctly different from the faculty when it comes to the perceived prevalence and practices of power-sharing in the classroom. This may be due to differences in teaching context, including class type

and institutional culture, or it may point to different perceptions by these two groups. Additionally, faculty responded to the items using the prompt "I…," while students used the prompt "My professor…" These different prompts may have caused faculty to endorse an item when they have done it once, while students may have more globally responded to general professor behavior. Future research with faculty and students from the same context would be needed to determine whether faculty and students truly perceive power-sharing differently.

Previous research in the area of inclusive teaching suggests the findings from this study should be explored further with larger samples evaluating the same course experiences. Student voices have been largely ignored in inclusive teaching educational development research (see Cook-Sather et al., 2021 for a critique and exception), and the large significant differences between faculty and student responses represent an additional rationale to maintain the full range of items on the PSP and utilize it as a checklist. Because students and faculty answer the items differently, a reduction in the range of items may make it less likely to see the differences between faculty and students. While the faculty and student samples in this research study were not related (i.e., they were not in a course together), their perceptions of how frequently these practices are occurring in higher education are still of particular interest. Previous research and measurement on inclusive teaching has overemphasized faculty beliefs (Addy et al., 2021). There are frequent discrepancies between faculty philosophy and the student experience. For example, faculty may endorse the idea of allowing students to revise work; however, this may only occur for a select group of students socialized to the workings of higher education who visit office hours and explicitly request this opportunity. Therefore, student perceptions of faculty behavior are key to assess. In fact, Addy et al. (2021) explain in their review of inclusive teaching that there needs to be a demonstration of the relationship between the philosophy and "actual implementation of inclusive teaching" (p. 21).

Because faculty often point to power-sharing practices that are relatively low-impact, such as allowing students to choose reading A or

B, both of which are about topic Y, theorists have discussed the need to move "towards true collaboration by sharing real power with students" (Tolman & Lee, 2013, p. 2). Faculty may describe these activities as "choice" or "power-sharing," but students may not experience it as such. In future research, the PSP could be used by professors and students in the same class to see if students are perceiving the choice that faculty believe they are providing.

Implications

The initial development of the PSP checklist carries with it several implications for educational developers and faculty working to promote inclusive pedagogy. Firstly, good assessment is also an intervention (Bifulco & Drue, 2023). As such, the PSP checklist could be hosted by teaching centers for faculty to self-assess and identify areas for increased power-sharing in their classrooms. Secondly, the PSP checklist could be used by teaching and learning centers to identify "expert teachers" who could partner with centers to scale educational development (Bifulco & Drue, 2023). Thirdly, while there is a focus on training instructors in inclusive education, these programs rarely "have their outcomes assessed in a data-driven manner" (Mahavongtrakul et al., 2021, p. 1). Previous research suggests (Bifulco & Drue, 2023; Erby et al., 2021) inclusive teaching educational development works; however, to justify the importance and associated benefits of such educational development, we must be able to assess faculty practice prior to and after interventions. Finally, as noted in the discussion, because faculty can espouse inclusive pedagogy without accompanying classroom behaviors, the PSP checklist can be used by faculty and students within a class to help faculty assess whether their beliefs are translating to student perception of their practices, particularly at earlier points in the semester to avoid the trap of only seeking student feedback at the end of the term (Cook-Sather et al., 2021).

Limitations and Future Directions

Results regarding the Power-Sharing Practices Checklist should be interpreted with an understanding of various limitations in its development. Sample size and skewness of the data were two factors that affected our factor analysis within this study. While we did not predict this result, in hindsight, we recognize that large variance in the PSP is expected, given it is context-specific and practices will vary widely. Another major limitation is the generalizability of our findings due to unique factors in our samples. Student data collection took place at institutions in Pennsylvania. The results may vary in a more geographically diverse sample. Additionally, both our student and faculty samples were over-representative of the natural and social sciences (81% of students were majoring in these fields, and 100% of faculty were teaching in these fields). Self-selection bias likely operated in the faculty who chose to participate in a study on power-sharing practices in the classroom (for example, these faculty may have believed in the importance of these practices). Additionally, while the items were the same, faculty stems began with "I…," and student stems began with "My professor…," and we do not know how respondents interpreted this (for example, were students thinking of a particular course or professor?). Finally, the student and faculty samples were not meaningfully related (i.e., in the same class or program); therefore, significant differences in perceptions could be due to context. Future research with a larger and more diverse sample may permit these analyses and further refine and validate the scale. Future research in which the checklist is administered to faculty and students within the same class, program, or college would further elucidate the relationship between faculty beliefs and the student experience of power-sharing.

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Conflict of Interest Statement

The authors have no conflict of interest.

Ethics Statement

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