Faculty Development Mini-Modules on Evidence-Based Inclusive Teaching and Mentoring Practices in Engineering

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Abstract

This evidence-based practice paper describes the creation, implementation, and assessment of mini-modules that instruct faculty on inclusive teaching and mentoring methods. A Faculty Learning Community (FLC) comprised of College of Engineering (CoE) faculty members developed six 10-minute modules with theory or evidence from literature and concrete teaching and mentoring tips. These modules were disseminated by FLC members at sequential CoE department faculty meetings. This format reached a large population of the CoE faculty, including those who had received very little prior diversity or teaching training. Surveys were administered after the first (pre) and final (post) module to assess faculty confidence in the module learning objectives, culturally responsive classroom management, and teaching engineering. Matched pre- and post-workshop surveys revealed statistically significant and sizable effects on faculty self-confidence related to the core workshop learning objectives: ability to minimize harmful psychosocial effects in the classroom ($d=1.40$, $p=0.007$, $n=18$), to mitigate their own unconscious biases ($d=1.09$, $p=0.014$, $n=18$), and to promote positive student-student and faculty-student interactions ($d=1.00$ & 0.92, respectively; $p=0.049$ for both; $n=18$). Workshop participation had little to no effect on faculty members' self-efficacy related to culturally responsive classroom management and teaching engineering. Taken together, these results suggest that a faculty-led initiative of short, evidence-based mini-modules can increase faculty self-confidence in inclusive teaching and mentoring practices.

Introduction

Nationwide trends show that engineering undergraduate and graduate programs lack the gender and ethnic/racial diversity of the general population [1, 2]. Once on campus, students' satisfaction with college is significantly shaped by interactions with faculty [3], and instructor-student rapport is associated with student motivation, engagement, and sense of belonging [4, 5]. Faculty can positively or negatively influence a student's self-efficacy and academic performance [6]. A focus group study in our College of Engineering (CoE) identified that students had mixed reviews on instructional and mentoring practices, some faculty promote a chilly climate, and some students experience microaggressions by faculty [7]. A subsequent survey administered to CoE undergraduates found students' interactions with faculty differed based on student gender [8]. These results imply that faculty within our CoE can improve in their teaching and mentoring in order to promote a more inclusive environment.

Despite the fact that inclusive teaching and mentoring are widely researched fields, many faculty members are not trained in these practices. Furthermore, most do not have the workload or incentive to delve into this literature and extract the evidence-based practices that can be incorporated into their classroom, advising, and mentoring sessions. In addition, because this field is so vast, the information can be overwhelming. To address the issues identified through the CoE focus group study and survey [7, 8], we launched a Faculty Learning Community (FLC). This FLC synthesized relevant literature on inclusive teaching and mentoring practices.

Adoption of inclusive teaching practices is poor compared to active learning and other evidence-based practices. For example, Bathgate et al. [9] reported that of the 19 evidence-based teaching practices measured, the four practices directly related to inclusive teaching were among the least implemented strategies. Faculty's perception of supports, not barriers, most strongly relates to implementation of evidence-based teaching practices, and implementing new practices helps generate additional supports [9]. Examples of support include a department's culture and emphasis on teaching, faculty's desire for improved student outcomes, professional development training, access to active learning classrooms, and interaction with pedagogy specialists. The FLC members aimed to provide support to their CoE faculty colleagues by creating a series of evidence-based mini-modules on inclusive teaching and mentoring practices. **The purpose of this paper is to describe the creation, implementation, and assessment of these mini-modules.**

Goals

The goals of this project were to

1. Disseminate evidence-based, inclusive teaching and mentoring techniques to the majority of CoE faculty, including those who would not normally attend traditional diversity or teaching workshops.
2. Evaluate CoE faculty self-efficacy in teaching engineering and culturally responsive teaching.
3. Assess the impact of the mini-modules on faculty confidence in applying inclusive teaching practices.

Faculty Learning Community

A Faculty Learning Community (FLC) launched in summer 2018. Aligned with the principles of a successful FLC [10], the inclusive teaching team met for over six months, had voluntary membership, operated by consensus rather than majority, and engaged in complex problems. The six faculty members of the FLC represented the biomedical, chemical, civil & environmental, materials science, and mechanical engineering departments. The FLC convened both tenure- and non-tenure-track faculty, all ranks (assistant through full professor), those who focus more on engineering educational research and those who focus more on traditional engineering research, and gender parity. The common goal was to empower the faculty to implement practices that are proven effective in including diverse learners.

The FLC synthesized evidence-based practices from various sources to develop six, short presentation modules and handouts. By the end of summer 2018, the FLC had agreed on inclusive teaching topics, assigned leads, performed background research on each topic, and drafted handouts integrating the content. In fall 2018, handouts were refined, and drafts of the presentation slides were completed.

Mini-Modules

Each module in the six-part series consists of a 10-minute (max) presentation and corresponding summary handout. The content includes theory or evidence from literature and tangible teaching

and mentoring tips. Following the recommendations of Bathgate et al. [9], the faculty-led modules allow instructors to identify academic resources, peers who use inclusive teaching in their classrooms, and strategies to implement inclusive teaching practices.

Topics include
1) Background and motivation, including presentation of institution-specific demographic and student climate data;
2) Inclusivity 101, covering basic terms and definitions like stereotype threat, imposter syndrome, and growth mindset;
3) Implicit bias;
4) Mindset (self-efficacy);
5) Student teamwork; and
6) Student interactions with peers and faculty.

The learning objectives paired with each module are listed in **Table 1.**

Table 1. Learning objectives for each module

Module	Topic	Learning Objective
1	Background & Motivation	
2	Inclusivity 101	- An ability to minimize harmful psychosocial effects in the instructor's classroom- like stereotype threat and impostor syndrome- that may disproportionally affect underrepresented students
3	Implicit Bias	- An ability to mitigate one's own unconscious biases in their teaching and student assessment strategies - An ability to fairly assess subjective student deliverables, such as design and lab reports, physical prototypes, and projects
4	Mindset (Self-Efficacy)	- An ability to promote a growth mindset for students in the instructor's class
5	Student Teamwork	- An ability to fairly assess individual team members' performance on student teams - An ability to facilitate effective student group work
6	Student Interactions with Peers and Faculty	- An ability to promote positive student-student interactions - An ability to promote positive faculty-student interactions

The six modules contain concepts similar to those presented through other workshops, such as the National Academies Science Summer Institutes on Undergraduate Education, which covers inclusivity within curriculum content, the use of diverse teaching methods, inclusive classroom environments, and implicit biases [11].

The complete series (presentation recordings and handouts) can be found online at **https://resources.engr.udel.edu/inclusive-teaching/**.

Dissemination

In contrast to one-time workshops, the FLC disseminated these mini-modules through sequential departmental faculty meetings. Research suggests that successful dissemination of teaching strategies requires efforts extended over a time period [12]. The idea was pitched to the CoE department chairs at a meeting led by the Dean of Engineering in October 2018. Based on department chair feedback, each module lasted no more than 10 minutes, and we condensed to six modules. We gained buy-in from all seven CoE department chairs. The modules were presented at the department level, which is the level most easily changed by the faculty [12] and addresses department-specific climates [7]. Because a "top-down," policy-based approach to implement change is often unsuccessful in a university setting [12], these modules focused on developing individual faculty, with the hope that a shift in individual mentality would ultimately shift the college climate.

We had three main goals for this approach. First, by presenting at department faculty meetings where attendance is generally expected, we hoped to reach the majority of faculty in the CoE, instead of only those who self-select to attend diversity and teaching seminars. Second, we aimed to cultivate a college-wide focus on inclusive teaching and mentoring practices. Prior work indicates that evidence-based teaching methods are easier to implement when multiple instructors apply these techniques, allowing exchange of teaching ideas between faculty and support from local role models [13]. The group setting during faculty meetings allows for this conversation and exchange of ideas. The engineering faculty-led modules, in contrast to workshops delivered by experts from outside of the CoE, allow for the cultivation of local, embedded role models and mentors [14]. Finally, we aspired to promote a continuous dialogue that extended throughout the year (instead of a single event), aligning with the "distributed practice" (or "spacing effect") learning principle [15]. Each module was assigned two FLC faculty presenters to facilitate easier scheduling. The six modules were presented to all seven CoE departments in spring and fall 2019. At the conclusion of all six modules, CoE faculty were encouraged to list participation in the series as one hour of professional development on their CV.

Assessment

Surveys were administered electronically (Qualtrics XM) to all faculty in the CoE after the first module (pre) and final module (post). The surveys were confidential, voluntary, and IRB-exempt with identifiers collected only for pre/post survey matching. The complete survey is presented in **Table 2**, and items were integrated from three sources. First, we developed eight Likert Scale survey items associated with the stated learning objectives (**Table 1**) in each of our five core workshop modules. These included reflective questions about classroom practices related to student mindset, unconscious bias, and fair assessment of student work. Second, instructor self-confidence with inclusive teaching practices was measured using a modified version of the Culturally Responsive Classroom Management Self-Efficacy Scale (CRCMSE, **Table 2**) [16]. CRCMSE is a validated instrument used primarily in K12 settings, and the survey was modified for this study by first running a pilot study with a subset of engineering instructors to determine which elements of the original CRCMSE survey were relevant in higher education settings. Several survey items related to student behavior were eliminated from the original survey, and

other items were rephrased slightly for clarity. The third and final element of the composite survey was taken from the Teaching Engineering Self-Efficacy Scale (TESS, **Table 2**) [17], which is a validated instrument developed for K12 engineering education. This survey is the first comprehensive evaluation of faculty members' perceptions of teaching in our College; therefore, although the CRCMSE and TESS instruments do not formally assess the learning objectives directly aligned with the workshop modules, these instruments were included in this baseline survey. In addition to the Likert Scale questions from TESS, CRCMSE, and workshop learning objectives, the surveys also included questions about what participants hoped to (pre-workshop) and did gain (post-workshop) from their workshop experience, which workshops they attended, and whether prior to these workshops they participated in professional development related to inclusive teaching.

The following methodology was used for statistical analysis of the data set using commercial statistics software (JMP Pro v14.0). First, the validity of mapping Likert Scale responses to a continuous scale was established by comparing outcomes for categorical (repeat measures Chi-Squared) versus continuous (Wilcoxon Signed-Rank) across a subset of survey items. Equivalent outcomes were found, and the entire data set was therefore treated as continuous for all further analyses. Second, pre- vs. post-workshop responses were compared on a per-subject basis first using non-parametric, one-way comparisons for each item (Wilcoxon Signed-Rank). These results were found to be consistent with parametric analyses (paired Student's t-test), and parametric interpretations are therefore presented for all items: mean, standard deviation, and effect size (Cohen's d) for each survey item. Post-hoc adjustment for multiple comparisons was not performed; therefore, p-values are presented for each survey item that achieve the $p \leq 0.05$ threshold for significance.

Free-response questions asked what participants hoped to gain (pre) or did gain (post) from participating in the inclusive teaching workshop modules. The responses from all survey respondents (not just matched) were manually coded by a single investigator to identify emergent themes, following the process outlined by Braun and Clarke [18]. The main goal of the thematic analysis was to determine whether respondents' goals for and takeaways from the modules aligned with the module learning objectives. Significant disconnect between individuals' goals and the learning objectives could indicate potential future module topics, and significant disconnect between individuals' takeaways and the learning objectives could indicate ineffective instructional techniques. A secondary goal of the thematic analysis was to consider any positive or negative feedback about the module content or dissemination methods. To provide the richest description of the full dataset, inductive analysis was performed [18]. To address the specific goals of the thematic analysis listed previously, the emergent themes were subsequently mapped to the relevant lesson objectives. Themes were identified at a semantic level [18]. A theme count was determined by the number of different individuals who articulated the theme in their written response.

Results

Survey response was fairly robust, with 50 respondents on the pre-workshop survey (29% total faculty in the college) and 34 respondents on the post-workshop survey (20% total faculty). A total of 18 faculty completed both pre- and post-workshop surveys, and these data were used

exclusively in repeat-measures analyses of module effects. 85% of faculty who completed the post-survey (29/34) currently teach undergraduate courses at a frequency of 2.1±1.7 courses per year (mean±stdev). Prior to this workshop series, 56% of faculty who completed the post-survey had never received professional development related to inclusive teaching, with an additional 12% having received minimal training (1-2 seminars). 62% of the faculty participants who completed the post-survey attended all six workshop sessions, with only 9% attending fewer than half of the sessions.

Workshop participation had a statistically significant and sizable effect on faculty self-confidence related to the core workshop learning objectives (**Table 2**). Specifically, faculty reported gains in confidence related to their ability to minimize harmful psychosocial effects in the classroom (d=1.40, p=0.007, n=18), to mitigate their own unconscious biases (d=1.09, p=0.014, n=18), and to promote positive student-student and faculty-student interactions (d=1.00 & 0.92, respectively; p=0.049 for both; n=18). Modest gains were also observed in promoting growth mindset and evaluating student work; however, these failed to reach statistical significance.

Workshop participation had little to no effect on faculty members' self-efficacy related to culturally responsive classroom management (CRCMSE) and engineering pedagogy (TESS). Faculty reported moderately high self-confidence on all CRCMSE measures (range: 2.06-2.50 on 0-3 pt Likert), and there were no statistically significant gains in these measures from pre- to post-workshop. Similarly, faculty also had moderately high self-confidence on TESS measures (range: 3.33-4.72 on 0-5 pt Likert); and pre- vs. post-workshop gains were reported for two of 15 survey items. Specifically, faculty reported gains in confidence related to their ability to guide students in the engineering design process or scientific method (d=1.15, p=0.009, n=18) and self-confidence in encouraging critical thinking (d=0.86, p=0.030, n=16). The former topic was not covered during the workshop, but the latter could loosely be connected to student mindset, which was a theme in the workshops.

Table 2. Survey items and pre vs. post-survey results analyzed using paired Students' T-Tests. N=18 pairs in all instances except those designated with * in which N=16 pairs.

	Pre-Workshop Mean (St.Dev)	**Post-Workshop** Mean (St.Dev)	**Cohen's d** (p value)
Inclusive Teaching Workshop Learing Objectives			
How much confidence do you have in your ability to accomplish the following in your classroom? *[3] A lot of confidence, [2] Some confidence, [1] Little confidence, [0] No confidence at all*			
-Promote a growth mindset for students in my class.	2.00 (0.69)	2.22 (0.55)	
-Minimize harmful psychosocial effects in my classroom	1.94 (0.64)	2.39 (0.50)	1.40 (0.007)
-Mitigate my own unconscious biases in my teaching and student assessment strategies.	2.00 (0.84)	2.56 (0.51)	1.09 (0.014)
-Fairly assess subjective student deliverables, such as design and lab reports, physical prototypes, and projects.	2.50 (0.62)	2.61 (0.50)	
-Fairly assess individual team members' performance on student teams.	2.06 (0.64)	2.00 (0.59)	
-Facilitate effective student group work	2.00 (0.59)	2.22 (0.55)	
-Promote positive student-student interactions	1.94 (0.54)	2.33 (0.59)	1.00 (0.049)
-Promote positive faculty-student interactions	2.39 (0.61)	2.78 (0.43)	0.92 (0.049)
Culturally Responsive Classroom Management Self-Efficacy Scale (CRCMSE)			
How much confidence do you have in your ability to accomplish the following in your classroom? *[3] A lot of confidence, [2] Some confidence, [1] Little confidence, [0] No confidence at all*			
- Create a learning environment that conveys respect for the cultures of all students in my classroom.	2.39 (0.61)	2.56 (0.62)	
- Establish high behavioral expectations that encourage students to produce high-quality work.	2.50 (0.51)	2.44 (0.51)	
- Structure the learning environment so that all students feel like a valued member of the learning community.	2.39 (0.61)	2.44 (0.62)	
- Design the classroom in a way that communicates respect for diversity.	2.06 (0.64)	2.06 (0.73)	
- Use strategies that will hold students accountable for producing high quality work.	2.33 (0.69)	2.28 (0.46)	
- Design activities that require students to work together toward a common academic goal.	2.44 (0.62)	2.39 (0.70)	
- Teach students how to work together.	2.33 (0.69)	2.17 (0.79)	
Teaching Engineering Self-Efficacy Scale (TESS)			
Please indicate the degree to which you agree or disagree with each statement below about your teaching practice. *[5] Strongly Agree, [4] Moderately Agree, [3] Agree Slightly More Than Disagree, [2] Disagree Slightly More Than Agree, [1] Moderately Disagree, [0] Strongly Disagree*, [-] Not Applicable			
- I can discuss how given constraints (e.g., technical, budgetary, timeline) may affect the outcome of a science or engineering project.	4.11 (0.83)	4.53 (0.62)	
- I can explain science or engineering concepts well enough to be effective in teaching them.	4.67 (0.77)	4.78 (0.55)	
- I can assess my students' science or engineering products.	4.53 (0.72)	4.67 (0.49)	
- I can craft good questions about science and engineering for my students.	4.50 (0.71)	4.44 (0.62)	
- I can employ science and engineering activities in my classroom effectively.	4.28 (0.75)	4.39 (0.61)	
- I can discuss how science or engineering is connected to my daily life.	4.72 (0.46)	4.67 (0.59)	
- I can recognize and appreciate the science or engineering concepts in all subject areas.	4.33 (0.77)	4.44 (0.70)	
- I can guide my students' solution development with the engineering design process or the scientific method.	3.67 (1.19)	4.61 (0.61)	1.15 (0.009)
- I can motivate students who show low interest in learning science or engineering.	3.33 (1.19)	3.56 (0.98)	
- I can gauge student comprehension of the science or engineering materials that I have taught.	3.67 (1.33)	4.00 (0.69)	
- I can promote a positive attitude toward science or engineering learning in my students.	4.39 (0.61)	4.67 (0.59)	
- I can encourage my students to think creatively during science or engineering activities and lessons.	4.17 (0.71)	4.33 (0.59)	
- I can encourage my students to think critically when practicing science or engineering.	4.47 (0.62)	4.83 (0.38)	0.86 (0.030)*
- I can encourage my students to interact with each other when participating in science or engineering activities.	4.17 (1.04)	4.44 (0.62)	
- My effectiveness in science or engineering teaching can influence the achievement of students with low motivation.	3.89 (0.9)	4.06 (0.94)	

25 individuals responded to the open-ended pre-survey question, "What do you hope to gain from participating in the UD COE Inclusive Teaching Workshop Modules?" Emergent themes included learning how to motivate and engage students, create an inclusive environment, assess student learning, mitigate implicit bias, implement new teaching strategies, connect with students, and promote effective student teamwork **(Table 3)**.

Table 3. Emergent themes in pre-survey responses (N=25) to "What do you hope to gain from participating in the UD COE Inclusive Teaching Workshop Modules?"

Theme	Mapped Module	Sample Quote	% Responses (#)
Motivate and engage students	4- Mindset	*"an ability to motivate all of my students to do their best and enjoy what they're doing"*	28% (7)
Create an inclusive environment	all	*"Strategies to further improve classroom environment"*	20% (5)
Assess student learning	3- Implicit Bias 5- Student Teamwork	*"Get resources to learn more about* […] *fair assessments."*	16% (4)
Mitigate implicit bias	3- Implicit Bias	*"I hope to learn to recognize bias in and outside of my classroom and strategies for mitigating its effects"*	16% (4)
Learn new teaching strategies	all	*"I hope to gain insight into potential impact of practices of which I am not aware, and learn something new that will help improve my teaching."*	16% (4)
Connect with students	6- Student Interactions with Peers and Faculty	*"Anything that I can do to better connect with the students would be great."*	12% (3)
Promote effective student teamwork	5- Student Teamwork	*"Practical insight into how to assess effective team work and how to help students improve in their interactions as team members."*	12% (3)

21 individuals responded to the open-ended post-survey question, "What did you gain from participating in the UD COE Inclusive Teaching Workshop Modules?" Emergent themes included implementing inclusive teaching strategies, refreshing or gaining support for what they already know or do, self-reflection on current practices, mitigating implicit bias, discussion with colleagues, understanding the student perspective and barriers to success, and the body of research supporting inclusive teaching practices **(Table 4)**. Overall, 90% (19 responses) were positive, indicating that they learned or gained something, and only 5% (1 response) stated that they did not find the modules helpful.

Table 4. Emergent themes in post-survey responses (N=21) to "What did you gain from participating in the UD COE Inclusive Teaching Workshop Modules?"

Theme	Mapped Module	Sample Quote	% Responses (#)
Implementing inclusive teaching strategies	all	*"simple things that can be implemented in daily practice, to ensure no student feels excluded"*	29% (6)
Refreshing what they already know or do		*"Some of the suggestions the instructors provided are ones I learned to incorporate over the years, but some were new and interesting."*	19% (4)
Self-reflection		*"Made me think about how I could improve reaching out ot* [sic] *URM in my classes."*	19% (4)
Mitigating implicit bias	3- Implicit Bias	*"implicit bias mitigation"*	19% (4)
Discussion with colleagues	all	*"It was also helpful to get insight to how my colleagues view this material."*	14% (3)
Understanding the student perspective	all, significant focus in 1- Background & Motivation 2- Inclusivity 101	*"They were a success in teaching about different issues that students face, all of which may have large impacts on their classroom performance. I was unaware of many of these topics and was not sure how to address them before the workshop."*	14% (3)
Inclusive teaching research	all	*"appreciation for body of literature to support inclusive teaching"*	14% (3)

Discussion

Our Faculty Learning Community created, implemented, and assessed a series of six mini-modules on inclusive teaching and mentoring practices. In support of Goal 1, we reached a large population of the CoE faculty, including those who would not normally attend traditional diversity or teaching workshops. Specifically, 68% of respondents had minimal or no prior professional development related to inclusive teaching. The modules were disseminated via departmental faculty meetings by fellow CoE faculty. A few participants indicated in the post-survey that one of the benefits of this format is that it allowed discussion among faculty peers. Peer discussion promotes the social aspect of effective professional development [19]. The series spread through 1 year (March-December 2019), supporting a continuous dialogue and the extended learning necessary for successful professional development [19]. The post-survey responses indicated two additional, unexpected positive outcomes of the modules: self-reflection and awareness of the research on inclusive teaching practices.

In support of Goal 2, we collected data on CoE faculty self-efficacy in teaching engineering and culturally responsive teaching. Overall, the faculty averaged between "some" to "a lot of" confidence in their abilities to manage their classrooms in a culturally responsive manner. They also demonstrated moderate self-efficacy in teaching engineering. Pre- and post-survey comparisons revealed little impact to these self-perceived measures.

Finally, in support of Goal 3, we measured pre- and post-survey responses to questions specific to the learning objectives of the mini-modules. Positive gains in confidence were detected for minimizing harmful psychosocial effects, mitigating unconscious bias, and promoting positive student-student and faculty-student interactions. The effect sizes ($d = 0.9$ to 1.4) indicate large to very large gains, in addition to statistical significance. The responses to the open-ended questions indicated that participants' goals for and takeaways from the modules aligned with the learning objectives. Interestingly, the most common emergent theme of the respondents' goals in the pre-survey (motivate and engage students) did not emerge in the post-survey. Enhanced student motivation is an outcome of successful implementation of the principles discussed in the modules, and in particular of growth mindset; however, the lack of congruency between pre- and post-responses suggests greater emphasis could be placed on student motivation and engagement either within the existing modules or as an additional module.

This study is not without limitations. The pre- and post-surveys collected self-reported data. We did not directly measure faculty adoption of inclusive teaching practices. Furthermore, prior work has revealed that faculty ideology (colorblindness or multiculturalism), which was not measured in this study, correlates with endorsement and adoption of inclusive teaching practices [11]. In addition, to reduce survey fatigue, we intentionally administered a single post-survey rather than surveys after each of the six modules; however, this design limits the data we could collect and could bias participant responses to reflect more on the modules at the end than at the beginning. Lastly, the TESS and CRCSME instruments were designed for K12 settings [16, 17], and, while we did modify item phrasing for college instructors, these instruments have not been externally validated. The reported pre vs. post workshop gains on TESS survey items that were not covered directly in the workshops suggest that this instrument may need further refinement and revalidation to accurately determine whether our workshop had pedagogical gains.

Effective professional development is an intentional, ongoing, systemic process [20]. Our series addressed these key components by intentionally centering on the student experience in the classroom; suggesting small, evidence-based practices that could be immediately implemented; and using a year-long series framework with administrative buy-in. Other models of professional development [19] highlight the need for authentic, active practice, which was not included in these modules and would be a worthwhile next step. Guskey [20] recommends evaluating five outcomes of professional development programs: participants' reactions, participants' learning, organizational support and change, participants' use of new knowledge and skills, and student learning outcomes. In this study, we evaluated participants' reactions via post-surveys and affective learning via pre- and post- self-efficacy assessments. Future work could directly evaluate participant learning and use of new knowledge, organizational change, and student perspectives.

Transferability

For those seeking to adopt a similar practice at their own institution, we recommend, based on our experiences, four components:
1) Gather the right team. Our team was successful due to its shared commitment to inclusive teaching, ability to devote effort to the project, and its diverse composition.
2) Maintain organization and structure. Develop a team timeline and delegate roles and responsibilities among team members. Document meetings. Ensure that one person on the team oversees the project management.
3) Gain administrative buy-in. Asking to speak at 42 departmental faculty meetings (6 consecutive meetings in 7 different departments) is a big ask, so buy-in from the dean and department chairs was critical. Listen to and implement feedback from administrative leaders.
4) Disseminate information through faculty peers. Peer instruction allows the content to be directly relevant since the instructor has had experiences similar to the participants. Furthermore, peer faculty have already built rapport and trust with their colleagues.

Conclusion

In this paper, we have demonstrated a process to develop and disseminate mini-modules on inclusive teaching and mentoring practices. We believe that establishing a Faculty Learning Community with engaged members working towards a common goal facilitated success of this program. Additionally, administrative support, dissemination at the department-level via faculty meetings, and instruction from CoE faculty colleagues were paramount in reaching a large population of the CoE faculty. Results show statistically significant and practical gains in faculty confidence as a result of these modules. Taken together, these results indicate that a faculty-led initiative of short, evidence-based mini-modules can increase faculty self-confidence in inclusive teaching and mentoring practices.

Acknowledgements

This project was funded by a University of Delaware (UD) Center for Teaching and Assessment of Learning (CTAL) Instructional Improvement Grant. The authors thank Dr. Rose Muravchick and Dr. Kevin Guidry from CTAL for guidance on relevant resources. The UD College of Engineering Working Group on Undergraduate Diversity supported this project. The authors thank Dr. Rachel Davidson for her leadership. Finally, the authors thank Dr. Gail Headley from the UD Center for Research in Education and Social Policy for guidance on statistical analyses.

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