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Creating Definitions of Teaching Excellence Using Multi-Dimensional Scaling

ABSTRACT

This article explores efforts to define teaching excellence in higher education. We propose a flexible but structured concept-mapping process using multi-dimensional scaling (MDS). When used in collaboration with a group of institutional experts and recognized leaders in pedagogy, this concept-mapping approach can quickly delineate multiple categories that align with teaching excellence, localized to the institution and its stakeholders. Analysis included perspectives from tenure-track faculty, clinical/professional faculty, and students. Results indicate differences between students and faculty in their understanding of excellent teaching and significant alignment between different types of faculty instructors. This methodology could also be used with administrators, accreditors, and other higher education stakeholders to further understand and expand the definitions of teaching excellence.

KEYWORDS

teaching excellence, concept-mapping, competence in higher education, concept-mapping process, faculty development

INTRODUCTION

Definitions of teaching excellence are numerous, diverse, and often informal. Institutions of higher education have several incentives that encourage the development of statements of teaching excellence. They are often informed by criteria for effective teaching and expectations for what learning experiences should be like for students. Additionally, local and national teaching awards enumerate specific standards to compare and rank candidates (Benekos 2016; Chism 2006; Hammer et al. 2010, 2; Olsson and Roxå 2008). Promotion and tenure committees determine teaching effectiveness with standardized measures, even if they are as simple as a limited set of questions from student evaluations of teaching (Chism and Chism 2007; Emery, Kramer, and Tian 2003; Wattiaux, Moore, Rastani, and Crump 2010). And yet, even as these definitions of excellent teaching are ensconced in recognition and job performance systems, no widely accepted process for determining what constitutes “good teaching” exists. If one selects a book on the subject at random from the past two decades, they can easily generate a semester’s worth of debate and discussion over the priorities and value of different criteria (Bain 2004; Fanghanel 2007; French and O’Leary 2017; Skelton 2005; Stronge 2010). Localization dictates that expectations for excellent teaching should vary by geography, institutional type, and mission (D’Andrea, Rosa, Stensaker, and Westerheijden 2007; Gunn and Fisk 2013), as well as the institutional culture that informs the teaching and learning experience.

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Disciplinary cultures and priorities shape the particular lens through which institutions evaluate instructors.

Further, several scholars have offered strident critiques of a singular definition. Kathryn Allan questioned the reduction of teaching into a discrete set of performative action, or what she calls the "technical ideal of performance" that informs the use of "excellence" in teaching (Allan 2007). Such an approach, she suggests, leads to a zero-sum game that ultimately supports "relative merit of the elite," rather than a developmental approach for all instructors. Other scholars have examined the application of teaching excellence in specific educational environments, especially when used to determine recognition through teaching awards (Behari-Leak and McKenna 2017). These applications extend the competitive aspects of excellence by differentiating some individuals as superior and reinforce systems of dominance over historically marginalized populations (Saunders and Blanco-Ramirez 2017). Underlying this debate is a lack of clarity on the process of defining teaching excellence.

Until recently, institutional efforts to promulgate definitions of teaching excellence have lacked transparency, often failing to disclose the identities of decision makers or the used methods. Are these groups comprised of administrators, faculty, instructors, and/or staff who are drawing on their learned experience? If they are consulting published studies on teaching, which studies are they reviewing, and how are they determining which portions to utilize and prioritize? Is the student voice included in the process, and if so, to what degree? How are competing definitions and terms combined or synthesized? Are decisions made by a designated chair after input from various committee members? How do they minimize principles of persuasion, such as the advocacy and oral communication skills of individuals involved?

Several North American institutions have increasingly become more open when crafting comprehensive teaching quality frameworks (Simonson, Earl, and Frary 2022). These frameworks and the specific methods behind them vary, but they generally involve a protracted, multi-year process of information gathering and consensus building. For example, the University of Saskatchewan constructed a shared framework for teaching quality from 2015–2017, using the lens of prospective quality assurance (Biggs 2001). The team aggregated common departmental definitions of teaching quality, explored definitions from peer institutions, and consulted campus stakeholders (Willness and McDougall 2017). Faculty and staff at Boise State University synthesized some widely cited monographs and articles into four elements of optimized teaching methods (Simonson n.d.) These approaches are well-documented and substantial.

Perhaps the greater challenge of the multi-year information gathering and consensus building process is that it requires significant resources, both in terms of time of the faculty and staff members involved and continued attention to the eventual output. There is also a period of continued refinement and agreement which usually requires a single minder or committee chair who must be highly invested in this work. The longer that period is, the more likely attention and dedication to the task will wane for those involved. The larger and more representative the committee, the more unwieldy the consensus-building becomes and the project then requires more time, resources, and negotiation. Conversely, a smaller committee that operates more nimbly may lack the necessary authority for widespread adoption, or worse, may foster active opposition to a framework.

Even faced with skepticism about the applicability of national or international definitions to institutional contexts, there remains a desire for localized definitions of teaching excellence with a minimal process. Some universities and colleges have undertaken substantive and time-intensive aggregation of local policies, peer institutional practices, and literature reviews (Willness et al. 2017). Grant-funded efforts at institutional change have fostered networks at some of these universities,

expanding on previous efforts to innovate teaching practices (Corbo, Reinholz, Dancy, Deetz, and Finkelstein 2016; Weaver, Austin, Greenhoot, and Finkelstein 2020). Yet, each of these approaches requires significant investment, both in faculty or staff resources and time. Few institutions completed these projects in under 12 months, with several requiring two to three years from start to finish. Can under-resourced institutions integrate multiple perspectives in a timelier manner?

CURRENT STUDY

Rather than offer yet another definition of teaching excellence, we propose a concept-mapping approach using multi-dimensional scaling (MDS) in order to analyze qualitative data from a diverse group of stakeholders and determine teaching excellence at a local level. Five fairly simple steps that can be easily replicated comprise this concept-mapping approach:

1. Participants are asked to generate lists of characteristics of excellence in teaching. The wording of this request can be modified depending on the context-specific goals of the institution.
2. Each participant is provided with the characteristics generated by all participants in their group and asked to sort them into groups based on whatever criteria they wish.
3. Researchers use multi-dimensional scaling (MDS) to create a two-dimensional map of the results to visually demonstrate how close the characteristics appear to each other.
4. Researchers use k-cluster analyses to identify clusters of characteristics that fall into specific groupings.
5. Researchers identify common themes within each grouping to name and classify the groupings.

Scholars in multiple fields use multi-dimensional scaling to analyze and visualize qualitative data (Brackenridge, Bishopp, Moussalli, and Tapp 2008; Jackson and Trochim 2002; Lim and Lawless 2005; Lopes, Andrade, and Machado 2016). This approach allows for the inclusion of multiple perspectives from different stakeholder groups and the organized synthesis of the results. It represents a low time investment, and any institution, college, or academic unit can apply it. This concept-mapping approach combines multiple perspectives into discrete clusters, minimizing placation and political negotiation that can accompany prolonged committee work. Furthermore, the MDS analysis provides a visual cluster map of the different characteristics that support a definition of excellent teaching and their proximate relationship to one another. Finally, unlike more laborious approaches, this concept-mapping approach using MDS can be repeated easily and quickly in response to changing conditions, allowing universities and colleges the freedom to refine their framework.

METHODS

This study took place at a large, residential, research-intensive university in the Midwest United States. The methodology involved multi-dimensional scaling (MDS) and k-cluster means analyses in order to analyze qualitative data from a diverse group of students and high-performing instructors. The next section explains our selection process for identifying instructors and students. This methodology is transferable, and a variety of different institutions could use it in order to identify characteristics of excellent teaching specific to each college or university.

Participants

Researchers compiled a potential pool of instructors from three different teaching ranks, with an effort to include disciplinary and demographic representation whenever possible. Since instructors with different teaching loads and expectations might view teaching excellence from distinct perspectives, we solicited participants from the tenured/tenure-track faculty rank, the clinical/professional faculty rank[1], and lecturers (although we were unable to complete data collection for this third group due to the COVID-19 pandemic). We divided up participants under the assumption that instructors from different academic ranks and teaching responsibilities might view teaching excellence differently. Additionally, we recruited a sample of students to compare their responses to those from different instructor ranks. At our institution, tenure-track faculty represent 71% of full-time instructors, with lecturers at 17% and clinical/professional faculty at 12%. Our criteria for expertise included at least three years of higher education teaching experience, which precluded much of the potential pool for graduate-student instructors or postdoctoral researchers who might also teach. We also targeted instructors with at least two of the following four criteria: 1) recognition of teaching achievement by the department, college or university, 2) demonstrated commitment to improving pedagogical knowledge, 3) experience with a variety of teaching mediums and levels (online and in-person, undergraduate and graduate), and 4) a record of scholarship of teaching and learning. Researchers chose these criteria for the initial project as they indicated individuals who had experience explaining and edifying the process of teaching. We did not include other criteria, such as student feedback on courses or evaluations, because our institution does not provide public access to that data.

In order to minimize our own selection bias, we distributed these criteria to the administration of the 12 academic colleges on campus, asking them for names of individuals that would satisfy these criteria. We emphasized the need for a diverse pool of instructors from different populations, ideally at a rate that matched the demographic populations at our institution, where instructors are predominantly white males with degrees from US institutions. Once the colleges provided these names, we grouped them by their teaching rank and identified demographic characteristics that would allow us to promote a greater likelihood of inclusion of different populations. We prioritized four demographic criteria to approximate the demographics of our institution:

1) Representation from each college[2]
2) Equal gender identities when possible
3) Target 30% representation from minoritized[3] populations
4) Instructors with one or more postsecondary degrees outside the US and Canada[4]

We employed a random number selector to order our initial targets and then contacted each person via email, explaining the process and commitment before asking if they would participate. After a follow-up email, we moved to the next participant on the list until we had satisfied our criteria as closely as possible.

For our student group, we utilized an existing campus program that garnered feedback from an intentionally diverse set of students. These students were from different socio-economic, ethnic, gender, and scholastic backgrounds who had previously demonstrated a commitment to improving the educational mission. Starting with the initial panel of 75 students, we contacted small groups until we met our minimum required responses.

The institutional review board on the authors' campus reviewed and approved all research processes, including solicitation materials, interview protocols, and aggregation of data.

Measures

Participants received a survey asking them to list characteristics of excellence in teaching based on whatever criteria they believed applicable. The authors did not provide specifications, and responses to the survey varied greatly. The number of characteristics provided by participants ranged from two to nine (M = 6.46, SD = 3.39). We also included several demographic questions at the end of the survey, which covered gender, ethnicity, position, and number of semesters that the participant had taught (or attended for students) at the post-secondary level.

Procedures

We recruited participants via email to participate in the study. Participants who agreed to participate completed the online survey on characteristics of teaching excellence. Following the Jackson and Trochim process, we targeted 10 respondents in each population, both for logistical purposes and to limit the total number of characteristics in the sorting activity. A total of 34 participants completed the survey (11 tenure/tenure-track faculty, 10 clinical/practice faculty, and 13 students). Once all participants in a specified group (e.g., tenure-track faculty) had completed the online survey, we contacted participants in that group to schedule a time to complete a sorting task. During the sorting task, we provided participants with individual slips of paper that contained the characteristics of excellence in teaching, as provided in the survey by all the participants in their specified group. Participants then sorted the characteristics into piles and then gave each pile a name; we told them there could be as many or as few piles as they wanted and that the only limitation was that there could not be a "miscellaneous" pile.

The onset of the COVID-19 pandemic required variation in methodology between the different groups. The tenure-track faculty and the clinical/professional faculty followed the procedures as planned: completing both the initial survey and the characteristics-sorting task. The student group completed the initial survey but were unable to do the characteristic-sorting task following campus restrictions for in-person events. As we felt it important to include the data from the student group, we asked members of the university's teaching academy (a group of teachers nominated and elected by their peers) to complete the sorting task based on the characteristics provided by the students. Jackson et al. (2002) suggested this procedure as an alternative if the original group members were not available to complete the sorting task.

Following the sorting task, we asked each participant if they would be willing to complete a short, recorded debrief interview. Thirteen participants completed an interview and answered the following questions:

- What was your thought process when going through the card sorting task? How did you decide which cards went together?
- What was the most challenging part of the task for you?
- Do you feel like the categories you created adequately represented excellence in teaching? If not, why not? What was missing?
- Please feel free to share any other thoughts you have about this process.

RESULTS

We then analyzed the results for the three groups of participants: tenure-track faculty, clinical/professional faculty, and students.

MDS and k-means cluster

Using the methodology described in Jackson et al. (2002), we entered individual responses into binary square matrices and then aggregated them into a single, combined matrix for each group.

We ran MDS analyses on the aggregated matrices to create two-dimensional maps of the distances between the individual characteristics.

In order to sort individual characteristics into identifiable groups, we ran k-means cluster analyses ranging from two clusters to 15 clusters on each map. The total within-cluster sum of squares was calculated for each k-means cluster. For each group, the elbow method (noting where the cluster plot bends) provided a range of optimal numbers of clusters. At this point, the optimal number of clusters should be determined by human judgment of the provided groups of characteristics (Borg and Groenen 2005). Following identification of the final cluster sets, the authors first created their own labels individually and then discussed the labels as a group in order to make final decisions on each group label.

Tenure-track faculty

The tenure-track faculty identified a total of 76 characteristics of excellence in teaching (with the possibility of duplicates). The tenure-track faculty considered either four or six as the optimal number of clusters (Figure 1). After examining the different cluster sets, the authors identified six clusters as the final solution for tenure-track faculty (Figure 2).

The six clusters identified for the tenure-track faculty were: (1) showing enthusiasm toward material and students, (2) communicating effectively with students, (3) demonstrating caring, (4) creating a welcoming environment, (5) acting as a reflective and inclusive expert, and (6) demonstrating clear organization and transparency. The "showing enthusiasm toward material and students" cluster comprised 13 characteristics, including "enthusiasm," "passion," and "inspiring." The "communicating effectively with students" cluster comprised eight characteristics, such as "excellent communication skills," "responsiveness," and "accessibility." The "demonstrating caring" cluster comprised six characteristics, including "friendly/approachable," "shows patience," and "unconditional positive regard." The "creating a welcoming environment" cluster comprised 10 characteristics such as "student-centered," "creating an environment that allows freedom and openness to address questions," and "acts as a mentor to students." The "acting as a reflective and inclusive expert" cluster comprised 13 characteristics, including "knowledgeable and confident," "continuous improvement," and "being grateful for our differences." Finally, the "demonstrating clear organization and transparency" cluster was the largest with 26 characteristics, such as "clear learning objectives," "quick feedback to students," and "well prepared/organized."

Clinical/professional faculty

The clinical/professional faculty identified a total of 60 characteristics of excellence in teaching (with the possibility of duplicates). They considered four clusters as the optimal number of clusters (based on the elbow method), though they also examined three and five clusters (Figure 3). The authors chose four clusters as the final solution for clinical/professional faculty (Figure 4).

The four clusters identified for the clinical/professional faculty were: (1) demonstrating content expertise, (2) showing enthusiasm toward material and students, (3) engaging students, and (4) demonstrating good communication and organization. The "demonstrating content expertise" cluster was the smallest, with only five characteristics, but showed good consistency with items such as "content knowledge," "content expertise," and "competent." The "showing enthusiasm toward material and students" cluster comprised 22 characteristics similar to those from the tenure-track category, including "passion for the content," "creates excitement in students," and "inspiring." The "engaging students" cluster comprised 14 characteristics, such as "promotes student engagement," "shows interest in students," and "intentional." The "demonstrating good communication and

organization" cluster essentially combined two of the tenure-track clusters; this cluster consisted of 19 characteristics, including "preparation," "be organized and prepared for class," and "feedback."

Students (sorted by teaching academy members)

The students identified a total of 60 characteristics of excellence in teaching (with the possibility of duplicates). The optimal number of clusters based on the elbow method was four or five clusters (Figure 5). The authors chose five clusters as the final solution for the student group (Figure 6).

The five clusters identified for the students were: (1) demonstrating clear organization, (2) showing enthusiasm and helpfulness, (3) demonstrating caring, (4) communicating effectively with students, and (5) demonstrating content expertise. These five clusters overlapped with many of the clusters from the tenure-track and clinical/professional faculty. The "demonstrating clear organization" cluster was composed of 11 characteristics, including "clear explanations," "logical flow," and "working to make things understandable." The "showing enthusiasm and helpfulness" cluster consisted of 18 characteristics, such as "excited," "available to help," and "understanding of the student perspective." The "demonstrating caring" cluster 11 characteristics, including "kind," "patience," and "compassion for students," made up the "demonstrating caring" cluster. The "communicating effectively with students" cluster consisted of seven characteristics, such as "told like a story," "conversational/includes students," and "interactive." The "demonstrating content expertise" cluster was comprised of six characteristics, including "knowledgeable," "smart," and "thorough with material."

Sorting task

Participant interviews following the sorting task highlighted different approaches to categorization, a belief in the efficacy of the process, and the challenge of how some terms can cross domains or categories. When asked about their thought process and decisions of grouping characteristics of excellent teaching, our interview subjects offered three different methodologies. First and most dominant, they tried to organize like-minded terms. In the words of one participant:

> Initially I didn't know what they were going to be, I just started putting terms that would be in the same family and after a while it started to come out itself. I only went through them once and sorted the first time, moving only a couple and divided into these three and then a small group.

Roughly half of the participants took this approach. The remaining participants either grouped based on how they themselves taught or felt about the characteristics or based on whether they viewed the characteristics as internal to the instructor or external to the course. For example, one participant noted:

> I wasn't really sure what people put in, I knew what I put in. So I went through the first ten before I thought about piles, then I started to group. Are these characteristics of the students or faculty? So I made piles about instructor traits, there were not enough about student traits. Excellence in instruction does not technically require the students to be a certain way. You shouldn't be a great teacher because you have great students. Three broad areas: things about instructors, things instructors would do, things about the environment of course, curriculum, program.

Another participant summarized:

> Seemed that some of the cards were really really specific to student-focused things, other ones seemed to be more qualities that are personality traits, another on skills that can be acquired like pedagogical knowledge, content expertise, etc.

Other groupings were based more on how they compared to the individual sorter. In the words of one participant:

> I grouped them first by common words, then synonyms. Then I did a kind of a gut check for how I grouped certain clusters as behaviors or personality traits of my own. Some things stood alone that couldn't be combined. Thought about how the words might function together in how I organize the class or organize content. How I think about instruction.

Independent of the implemented organization style, participants were very supportive of the process. Even though this was a self-selected group who volunteered to provide and sort their answers, committing to approximately 90 minutes of work, 11 of the 13 interview participants believed that the categories represented effective teaching, and seven participants indicated their outright appreciation for having completed the exercise. Only one interview participant expressed reservations about the process, expressing some concerns that this would not translate across delivery mediums, like online courses. When asked about the challenges of the exercise, only two participants thought there were no challenges. One mentioned the raw number of characteristics as a challenge, and another mentioned the struggle to group "outliers." Five participants noted that grouping was challenging because some characteristics could span two or more of the categories they had created.

DISCUSSION

Multi-dimensional scaling provides a flexible, inclusive, localized, and relatively rapid approach for defining elements of teaching. The process can include varying numbers of stakeholder groups while providing consistency and visualization of the resulting clusters. It allows for representation by different populations, teaching responsibilities, and disciplinary expectations and norms, all within specific local contexts. Higher education institutions can apply the technique at different points without significant time investment or the logistical challenges of coordinating individual schedules.

Utilizing multi-dimensional scaling and a cluster approach also offers transparency. Individual institutions can make their selection process overt while still protecting the anonymity of the respondents. The individual characteristics, the sorting process, the clustering, and the naming of clusters can all be made public, so that faculty, students, and staff can view the collected characteristics of teaching excellence and respond. This approach removes elements of politicking, or hidden decision-making, from the process. It also removes overly persuasive voices or individuals who may have exerted disproportionate influence over a committee because of their position or reputation. Finally, this approach allows for easy and rapid re-examination of the process using the original data if the final conclusions were deemed problematic. Institutions can easily repeat the

number and naming of clusters as the need arises, unlike the final product of multi-year committee work.

This approach does not presume a specific output or endpoint for students when considering what teaching excellence looks like. If the belief and value system of a particular university, college, or department prioritizes the student as a global citizen or as an active participant in creating their own learning process, then their framework can incorporate those priorities. If an institution prepares students for specific vocational or professional outcomes, then their teaching framework can reflect the values of that industry. This concept-mapping approach using MDS analyses allows for the local context and culture of a specific geographic region. Since cultural values and practices can vary across and within national borders, we would do well to adopt a process that affords local value, while still being easily replicable regardless of institutional resources.

When considering implementation, we recommend carefully considering the criteria for inclusion in the generative and sorting tasks. Not only do clear guidelines for soliciting participants reduce subjectivity in the process, but they also support broader applicability with a transparent rationale. Additionally, while the elbow method can provide suggested numbers of clusters, the labeling of these clusters is both important for communication purposes and subjective. For example, one of our clusters from student participant data was “demonstrating caring.” We specifically included the gerund verb “demonstrating” to reinforce the notion that care cannot be implicit, and student responses indicated the need for explicit realization of any care the instructor feels toward their students.

Group comparison

The responses from our three stakeholder groups included many common definitions of teaching excellence, and some notable distinctions. The student participants prioritized affective skills, like care and enthusiasm, over specific pedagogical approaches or organizational course elements. Multiple terms around engagement, affability, and connection populated the initial student responses and relative strength of the two representative clusters. Comparatively, student descriptions of “classroom management” tended toward transparency and communication, rather than specific teaching techniques that might foster a collegial sense of belonging. Student responses indicate that the learning environment strongly influenced their individual experience, and they placed less emphasis on the practical steps of facilitating a class and connecting students to one another.

Our faculty responses highlight the multiple dimensions of instructor effectiveness, affording relatively equal weight to the learning environment, disciplinary expertise, pedagogical technique and assessment, and student assignment feedback. While we anticipated some differences between our tenure-track and clinical/professional faculty, the alignment of priorities was markedly similar. Both groups prioritized clear communication, organization, and transparency around course objectives. There were some mentions of subject matter expertise and confidence among both groups. They also focused on caring and enthusiasm, though the clinical/professional faculty emphasized these much more than their tenure-track peers. The only notable distinctions between our two faculty populations were the specificity with which tenure-track responses included course management, course materials, and course topics in their definitions, as well as explicit mentions of reflective improvement in the teaching process. We do not have any suggestions as to why this difference arose.

Limitations and future directions

One major challenge for this study was the COVID-19 pandemic. During the first semester in 2020, the university moved to remote instruction, and we couldn't complete data collection for our final group of participants (lecturers) or have our student group complete the sorting task, which was, at the time, an in-person procedure. Partly, we intended this halt to keep the process consistent, but we also faced significant logistical and administrative resource hurdles to transitioning to an online format. Everyone had far too much work during the 2020 calendar year. In future studies or uses of this process, the sorting task could be completed online to minimize disruption and allow for a more streamlined process. One additional limitation was the subjective process for choosing the cluster labels. One potential workaround could be to use additional statistical analyses to determine which of the participants' cluster labels was closest to the characteristics chosen for that cluster rather than creating new labels once we have finished the process. Cluster analyses can also approximate degrees of distance and separation. Finally, we chose our participants based on traditional metrics of teaching achievement, which may have skewed toward those already recognized within the university's teaching excellence frameworks. However, we believe that the power of this methodology is that it could be used by any group of individuals based on the purpose and values of an institution.

Admittedly, this approach does leave some room for interpretation and may be differently informed with a clear directive that participants consult scholarship on teaching excellence to inform their perspectives. Since this was an exploratory study to demonstrate the approach, we did not want to add directions that might have unduly influenced the outcome. While our process does address several of the existing drawbacks to institutional efforts to define teaching excellence, the integration of scholarly literature is a challenge for future studies.

Conclusions and implications

As teaching becomes increasingly valued at large, research-intensive institutions, it is important to have a process for creating a localized and data-driven definition of excellence in teaching. There are many potential uses for these definitions. They can be a supplement to existing course evaluation processes, informing the questions asked of students. Similarly, external accreditors would benefit from the nuance and specificity around departmental, collegial, or institutional priorities. Teaching centers and professional organizations for teaching and learning can be valuable resources for implementing this type of process with minimal investment from staff and faculty. One important consideration in carrying out this process is the selection of contributors, as it is vital to have representation from different perspectives. We suggest having a clear procedure in place for determining who will be involved and why. While there is more effort to involve instructors and faculty who are not already regularly engaged with teaching and learning efforts at an institution, the value of soliciting diverse viewpoints will be reflected in a stronger final product. We also encourage you to engage with any framework regularly. Revisit your results so that they do not become static and instead reflect the dynamic and evolving priorities of teaching and learning.

DISCLOSURE

The authors did not use Generative AI software to create or modify text in this article. The listed authors solely wrote this document. The authors used automatic grammar and spellchecking functionality of Microsoft Word during composition.

ETHICS

The authors' Institutional Review Board approved this research and data collection under IRB #1906022277.x

NOTES

1. Clinical/professional faculty focus principally on excellence in instruction and engagement. In addition to their instructional responsibilities on campus, clinical/professional faculty also may be professionals in a practice site and provide clinical supervision of students; collaborate and develop professional relationships with industry and governmental agencies; and/or supervise internships, co-ops, service learning, and other student activities outside the classroom.
2. We chose to limit our final groups to 10 instructors, partly to preserve the method outlined in Jackson et al. (2002), but also to avoid an excess of characteristics and terms for our participants to sort. As a result, we combined the two professional schools into one college and did likewise with the two non-degree granting undergrad colleges in order to reduce 12 colleges to 10.
3. As defined by the university
4. We have a sizable population of international students and scholars, and we added this variable to ensure greater representation of our institution's demographics.

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