Twelve Tips for Inclusive Teaching

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Abstract

Grounded in the literature and the authors’ experience running faculty development programs on inclusive teaching, we present twelve tips to ensure equitable access to learning for all students. Teaching inclusively begins with having an inclusive mindset and recognizing our biases. Faculty must embrace a growth mindset about their learners and themselves and accept that failure is a necessary part of learning. Providing structured learning that is multimodal and consistent with evidence from the cognitive sciences helps all learners. By fostering personal connections and offering regular feedback, faculty can ensure the success of all health professions students. Specific tips for teaching in the classroom, clinical, and online environments are provided.

Keywords: Equity; Bias; Educational Climate; Faculty Development

Introduction

Increased global attention to diversity, equity, and inclusion necessitates inclusive teaching in health professions education. As described by Dr. Marc Nivet, former Chief Diversity Officer of the Association of American Medical Colleges, diversity and inclusion must be prioritized to build the capacity of medical schools and teaching hospitals and improve the education of students (Nivet, 2011). The need for inclusive teaching is specifically concerned with and not limited to increasing enrollment, attendance, and completion; reducing repetition, drop-out, and push-out rates; and celebrating diversity and promoting cohesion (Schmid et al., 2016). For the purposes of this article, we determine inclusive teaching to be ensuring equitable access to learning for all students. From matriculation to graduation, inclusive teaching begins in the classroom and should be part of the clinical environment where students from diverse backgrounds will be working with colleagues and caring for patients.

Historically, students from underrepresented groups have found higher educational systems ineffective, unwelcoming, hostile and even threatening (Schmid et al., 2016). Inclusive teaching has a renewed sense of urgency in today’s climate as it is grounded in the belief that inclusive education is a prerequisite for equity and social justice (Shaeffer, 2019). Faculty development programs can increase the awareness and use of inclusive teaching practices (Schmid et al., 2016; Lupton and O'Sullivan, 2020). Here we present principles of inclusive teaching in health professions education under four themes: 1) General Principles of Inclusive Teaching, 2) Classroom and Didactic
Teaching, 3) Clinical Teaching, and 4) Online Teaching. These 12 Tips are largely grounded in literature from undergraduate education, with additional experience from three workshops ran by the author team and are summarized in the accompanying Figure 1.

Figure 1: Inclusive Teaching Themes Applied to Didactic, Clinical, and Virtual Teaching

| Purposeful Inclusion | Growth Mindset | Embrace Failure | Structure | Personal Connection | Multimodal Teaching & Assessment |
|----------------------|---------------|----------------|-----------|--------------------|-------------------------------|
| Didactic             |               |                |           |                    |                               |
|                      | Use microphone| Praise effort  | Detailed syllabi | Name tagging cards | Low-stakes quizzes            |
|                      | Repeat questions | Value progress | Organization  | Share stories      | Sample quizzes                |
|                      | Open body language | Encourage grit | Learning objectives | Share stories | Low-stakes quizzes            |
|                      |                | Holistic feedback | Clear instructions | Psychological safety | Share stories                |
|                      |                | Model the mindset | Study guides | Mindful feedback | Share pronouns                |
| Virtual              |               |                |           |                    |                               |
|                      | Low-bandwidth  | Pre-briefing   | Detailed syllabi | Sample questions | Anonymous polls              |
|                      | Asynchronous  | Clear expectations | Organization |          | Take-home quizzes            |
|                      | Closed Captioning |               | Learning objectives | Study guides | Skills observations          |
| Clinical             |               |                |           |                    | Presentations                |
|                      | Engage all learners | Pre-briefing | Clear expectations | Sample questions | Participation in care        |
|                      | Acknowledge bias |               |           |                    |                               |

Theme One: General principles of inclusive teaching

Teaching inclusively begins with having an inclusive mindset. The inclusive mindset has three main pillars (Sathy and Hogan, 2019): 1) consider which students may be excluded as a result of a given teaching strategy; 2) understand that skills are not innate or fixed, but are instead grown and developed over time; and 3) embrace, encourage, and explore failure. It is important to note that this inclusive mindset refers to both students and teachers.

Tip 1: Recognize our biases in teaching and learning

The population of medical learners is increasingly diverse – not only with regard to race, ethnicity, gender, and sexual orientation, but also underrecognized traits like introversion/extroversion, organizational habits, preferred learning styles, and reading speed (Lupton and O'Sullivan, 2020; Roberts, 2020). Every teaching strategy has the potential to exclude learners, sometimes in ways that are not obvious. For example, the Socratic cold-calling strategy may exclude introverted students who prefer time to process information quietly. A free-form problem-based strategy may exclude students who require more organization. While neither of these strategies are inherently flawed, they show how any given teaching strategy has the potential to exclude learners and this must be taken into account when designing curricula. The effects of educator bias, positionality, and potentially exclusive teaching methods in health professions education can be blunted by creating an environment that is safe and nonthreatening for learners (Sukhera and Watling, 2018).

Tip 2: Embrace a growth mindset: skills are built, not born

The diverse body of medical learners bring with them a diverse set of dynamic strengths and areas for growth. A major barrier to the effortful learning necessary for successful growth is the fixed mindset, which asserts that skills are fixed, inherent and immutable (Dweck, 2006). As educators, we have a responsibility to counteract the fixed mindset in our students, ourselves, and our fellow educators. We must also actively identify and address our own implicit biases (Sukhera and Watling, 2018). For example, believing some students are “bad at math” based on their gender risks inaccurately characterizing student aptitude and ability and biasing our teaching.

In contrast to the fixed mindset, a growth mindset asserts that learners’ strengths can be developed through effortful
learning, feedback, and mentorship (Ramani et al., 2019). Maintaining and promoting a growth mindset allows us to better engage our learners and equip them to embrace challenges, persist through adversity, and seek out feedback. To continue the example above, we should both believe all students can improve their mathematics skills and foster that belief in our students. We have the opportunity to model a growth mindset for learners as we work to make our teaching environments more inclusive.

**Tip 3: Embrace failure**

Failure is a natural evolution to the solution of a problem; it is a core prerequisite to learning, success, and growth. Unfortunately, failure is heavily stigmatized in health professions education, preventing its benefits as a powerful learning tool from being fully recognized (Bynum and Artino, 2018). Inclusive teaching requires a psychologically safe learning environment where failure is both normalized and expected. Simple ways to foster psychological safety include sharing our own mistakes and lessons learned, identifying holistic factors leading to failure rather than placing blame, and encouraging inexperienced learners to offer new solutions and ideas (Tsuei et al., 2019).

**Tip 4: Create structure as it is good for everyone**

In science, technology, engineering, math (STEM) and medical learning environments, some educators conflate structure with hand-holding, citing that the difficulty that arises from low-structure teaching serves to separate the "weak" learners from the "strong" (Lupton and O'Sullivan, 2020). A growing body of research has shown that low structure leaves learners behind, some disproportionately (Supanc, Völlinger and Brunstein, 2017). For example, a student on a primary care rotation who is not oriented to the clinic, introduced to staff members, or given clear guidance on expectations may struggle to succeed for reasons unrelated to professional competency. Learners at every level benefit from more structure, and notably, more structure does not harm learners who do not need it (Krupat et al., 2016; Lupton and O'Sullivan, 2020).

High-structure teaching methods, such as thoughtfully crafted syllabi, emails summarizing learning points, study guides, and clinical pre-briefing, allow learners to shift their bandwidth from deciphering logistics and organization to understanding key concepts, gleaning tacit knowledge, and building schema consistent with intended learning objectives.

**Tip 5: Make the personal connection and honor individuals**

Inclusive educators allow people to bring their authentic selves to the learning environment. Learners come to the classroom or clinic with complex identities and unique personal stories; educators are equally unique. Successful learning environments are founded on personal connections made between teacher and learner. We can make personal connections by recognizing and validating the individual, mutually sharing personal experiences, values, or beliefs, and establishing trust.

*Recognizing and validating the individual:* In a faculty-led campus-wide discussion on inclusive learning environments, the requests from students were remarkably simple: be open, make eye contact, and learn names (Lupton and O'Sullivan, 2020). Simply greeting students by name can improve trust, engagement, and lengthen "time-on-task" in the classroom (Allday and Pakurar, 2007; Cooper et al., 2017). Ask your learners if they have a preferred name, which may vary from the name listed in the class roster. Verify that you are pronouncing their names correctly and ask for a phonetic spelling if needed. It may be helpful to ask students to use desktop name tents or nametags. Do not assume that just because you cannot learn the names of all of your learners you do not need to learn any of them (Lupton and O'Sullivan, 2020). In addition to learning names, be sure to learn and use
students’ preferred gender pronouns; consider modeling this behavior by sharing your own gender pronouns in your syllabi, email signature, or on social media.

*Sharing personal experiences, values, or beliefs:* Rather than exclusively discussing content, maintain the personal connection by sharing who you are with your learners. It need not be extensive or overly personal – simply sharing a favorite photo or a well-timed media reference is enough. Sharing pieces of ourselves invites students to feel safe sharing pieces of themselves; this is the space where personal and caring educational relationships, central to successful learning, are built (Birch and Ladd, 1997; Decker, Dona and Christenson, 2007; Pattison, Hale and Gowens, 2011).

*Trust:* Personal and caring relationships mean very little without trust. Teaching is not simply a process of transmitting content; it is also facilitating experimentation, failure, and recalibration. Trust is necessary for learners to feel safe experimenting and failing without undue judgement. Three simple ways to build trust with learners include: 1) Be honest about expectations and take ownership of your mistakes; 2) Admit when you do not know the answer and use these opportunities to model a growth mindset (see Tip 2); 3) In addition to rewarding achievement, be sure to reward effort, improvement and, sometimes, failure (see Tip 3).

**Tip 6: Provide multiple forms of teaching and methods of assessment**

Every teaching method has the potential to exclude learners on the basis of socio-demographic factors, prior experience, or traits like introversion/extroversion (see Tip 1) (Lupton and O'Sullivan, 2020). To mitigate exclusion, provide multiple ways of engagement with the learning material that are consistent with the cognitive science principles of retrieval practice, spaced practice, and dual coding (Gooding, Mann and Armstrong, 2017). Allow for anonymous participation in class by using polling/quizzing software like PollEverywhere, Socratic, Kahoot!, or the polling feature on Zoom. Assign self-paced learning activities that allow students to work through material on their own. In addition to the traditional textbook, provide learners with multimodal supplemental materials like articles, videos, podcasts, or virtual/in-person simulations.

More learners are included when we afford them multiple opportunities to demonstrate progress and competency. To this end, learners should also be given frequent, formative feedback – both directly and through low stakes testing that emphasizes the learning process as opposed to a letter grade (Gooding, Mann and Armstrong, 2017). Administer low-or-no-grade practice tests throughout the course and not only at exam time. Have students prepare and teach one another. If time and class size permit, structured feedback sessions, peer evaluations, and oral or written presentations provide different ways learners can demonstrate understanding.

Work to apply principles of inclusive education to evaluations and feedback sessions as well. Reflect on biases in when, how, how frequently, and to whom feedback is given, with careful consideration for power gradients that exist between educator and learner. Evaluate whether feedback would be better delivered in public or private settings, taking into account learner preferences, group dynamics, psychological safety, and sensitivity of the feedback content.

**Theme Two: Inclusive teaching principles specific to didactic teaching**

We commonly associate classroom teaching with the didactic approach, wherein the teacher is responsible for information presented to learners. Examples of didactic teaching include traditional lectures, case conference presentations and some small group teaching in clinical spaces. Didactic teachers have opportunities to enhance
inclusion through selection of materials, examples, and cases for presentation; the method and style of information
delivery; interactions with learners during the teaching activity; and in assessment of learning in these settings.

**Tip 7: Select inclusive teaching materials, techniques, and assessments**

Ensure that clinical case examples, images and other materials represent the spectrum of diversity among learners
and the patient population and do not contain stereotypical and potentially derogatory inferences. Insensitivity to
diversity, even when inadvertent, creates barriers to engagement with the material and teacher. It can be helpful to
ask another person to review course and presentation materials.

Learners have different abilities to follow lectures and meet objectives. Wearing a microphone and restating
audience questions can help everyone hear effectively and may be essential if the class is recorded for later viewing.
Recording the session or allowing transcription allows learners to review more than once and at their own pace.
Avoid taxing attention spans; make material digestible by breaking up sessions using active learning techniques for
the key points (Theobald et al., 2020). Keep slides simple, easy to see and easy to interpret so that the key points are
not lost in distracting words or diagrams. If you have notes or an outline for the class, make those available to
learners.

**Tip 8: Promote input from all students**

The inherent gradient of authority between teacher and learner creates distance that some find hard to traverse.
Welcoming tone of voice and open body language can reduce that distance. To signal openness to all students and
perspectives, use open stances and gestures rather than crossed arms or hands in pockets. Face or look at the
audience as much as possible when using a white board, chart, or slides to maintain the feeling of eye contact and
personal connection. If possible, step from behind a podium and move about the room to maintain audience
attention and connection as equally as possible regardless of their location (Roediger et al., 2011); avoid pacing or
other distracting motions. Incorporate these tips while maintaining authenticity in your personal style and in the
situation (Hale et al., 2017).

Verbally, we tend to hear from learners who are most eager to demonstrate their knowledge, least tolerant of silence,
and less reserved than peers. We may also have patterns of how we call on learners to answer (a certain part of the
room, perceived eagerness of the student, etc.). A risky assumption on the teacher’s part is that the responses given
are a representative sample of the room. Recognize when some students dominate the discussion to the exclusion of
others and manage those who dominate through body language (walking away from the speaker towards others,
turning to the rest of the audience with an inquisitive look, etc.) or verbally ("I'm curious what the rest of you think",
"let's save that topic for after class so we can return to the question at hand", etc.) (Hale et al., 2017).

If learners are to be called upon in class, consider asking questions that seek not a right/wrong answer but rather an
explanation, interpretation or creative input. Use mechanisms to randomly select a student to respond and call the
student by name. Avoid embarrassing a student who gives a response other than what you hoped for. Consider ways
to allow all students to contribute responses. Audience response systems can be anonymous ways to judge if students
are learning what you expect or to solicit input that may be unpopular (see Tip 6). When asking a question, become
comfortable with silence and waiting that allows for responses from learners who need more time. Use
think/pair/share, which allows students to test their responses in a low-stakes setting, hear the perspectives of peers,
and self-correct by gaining new insight (Prahl, 2017).
Theme Three: Inclusive teaching in the clinical environment

Clinical teaching distinguishes education in health professions from other fields. In a review of the literature of what makes a good clinical teacher in medicine, Sutkin et al., characterized excellent teaching as inspiring, supporting, actively involving, and communicating with students (Sutkin et al., 2008). As we note the call for increasing physical examination teaching particularly in medical schools (Faustinella and Jacobs, 2018), and the 12 Tips recommending increased funding to help core faculty to teach and improve their clinical teaching skills (Ramani, 2008) we provide tips for focusing on inclusion during these efforts.

Tip 9: Orient the learner and patient to the clinical teaching environment

The clinical environment can be overwhelming, and inclusion begins by initially meeting one-to-one with new learners to personally connect with them. Welcome them to rounds or to the patient bedside by calling them by their name (Tip 5). Look at their student ID Badge and commit their name to memory. Introduce students to the interprofessional team and model respectful and inclusive language when working with other health professionals (Kassutto et al., 2020). Provide structure by setting clear expectations of what you would like the students to learn while they are on the clinical rotation generally and from each patient encounter specifically (Tip 4). In the spirit of inclusion, ask the learner how they learn best and acknowledge this. Set aside time for debriefing and feedback after the clinical encounter (Tip 6).

Pay attention to how you are including patients and families when teaching in the presence of patients; the existing 12 Tips to Improve Bedside Teaching provides an outstanding framework (Ramani, 2003). While the majority of patients surveyed indicate they enjoy participating in bedside teaching, in one study 37% noted they were not properly oriented to the process (Nair, Coughlan and Hensley, 1997). If possible, speak to patients in advance about their role in clinical teaching and ask their permission before proceeding. Introduce each member of the team to the patient and family, modeling preferred names and pronouns and including titles and roles. Allow learners to take the lead when possible, offering gentle corrective feedback while ensuring patient safety. Thank patients and families for their role as teachers of the next generation of health professionals.

Tip 10: Acknowledge bias in the clinical environment

As educators, we must acknowledge there is potential for bias in the clinical environment. There is a growing literature on unconscious bias in healthcare and its impact on clinical decision making (Dehon et al., 2017). It is our responsibility as educators to speak up if a learner experiences or witnesses bias either by their patients, their teachers, or their colleagues. Educators should be especially mindful of under-represented in medicine (URIM) students as they may personally experience bias from patients or their teachers. This can contribute to feelings of "being the only" and imposter syndrome, which may compel students who are URIM or who are introverts to fade into the background.

Theme Four: Inclusive teaching principles unique to online teaching

As blended or hybrid learning becomes more common, as we experienced with the SARS-CoV2 pandemic, many teachers will find themselves doing some or all of their teaching online (Sandars et al., 2020). All of the earlier principles of inclusive teaching apply when teaching online, and many will take on even greater importance when teachers and learners are not physically together. In a 2017 review, Don Passey identified five constructs to consider when developing inclusive online teaching and learning activities (Passey, 2018): attending to physical and spatial
barriers; understanding learners may experience conflicts with other roles when learning remotely; fostering social connections to classmates in the online environment; attending to emotional needs (Reilly, Gallagher-Lepak and Killion, 2012); and being mindful of the increased demands for self-sufficiency and organizational skills when learning online (Starcic and Niskala, 2010).

**Tip 11: Choose synchronous vs asynchronous activities thoughtfully**

While synchronous teaching has several advantages, including providing social connection to faculty and peers, it is not always the most inclusive option. Students may be living in a different time zone, have other personal and professional obligations that preclude being available at a designated time, or feel uncomfortable sharing specifics of their environment via video and audio feeds. We suggest faculty reserve live, synchronous sessions for highly interactive content that necessitates group problem solving (Sandars et al., 2020). Notify students in advance if video- and audio-feeds should be turned on to maximize collaborative learning, and provide alternative means of engagement such as the chat feature for students whose environment is not conducive to video or audio. Choose lower bandwidth, asynchronous options if learning objectives can be met this way (Stanford, 2020). This could include pre-recorded lectures or existing online tutorials, as well as asynchronous discussion boards (Sandars et al., 2020).

**Tip 12: Consider technological issues when designing for inclusion**

Survey students in advance to ask if they will be using a computer, tablet, or mobile phone to learn online. If students will be using mobile devices, optimize articles or slide sets for mobile viewing. Work collaboratively with the institution to ensure all students can use the learning management system; avoid choosing tools or material that are not supported by the institution or that require additional payment to access. Assist students needing free or low-cost internet service; provide backup methods of asynchronous engagement for students with low bandwidth or inconsistent internet access by recording all sessions for later viewing. Use closed captioning for those with hearing impairment, and create audio transcripts for those with visual impairment (Burgstahler, 2015). These strategies will also help learners for whom the instructor is teaching in a language other than their native one (Jung-Ivannikova, 2016). Invite students to upload a current picture and include their preferred name and pronouns in their online profile. Consider providing professional virtual backgrounds for students who are not comfortable sharing their physical workspace. Use breakout rooms to enhance engagement amongst students who may be less comfortable speaking up in front of the entire class (Hogan and Sathy, 2020).

**Conclusion**

Inclusive teaching is essential to the realization of our goals for the future of healthcare. The tips above are embedded in the science of learning and thus should advance the learning of all students, regardless of their background. By embracing the diversity in our learners and ourselves as teachers and ensuring each has the support necessary to assume their role in the workforce, we maximize the potential to alleviate suffering and advance health.

**Take Home Messages**

- Inclusive teaching requires a growth mind-set for teachers and learners
- Consider which students may be excluded by certain teaching strategies and work to use evidence-based strategies that improve learning for all
- Acknowledge the potential for bias, especially in the clinical learning environment
- More learners are included when we afford them multiple opportunities to demonstrate progress and
Inclusive educators allow people to bring their authentic selves to the learning environment.

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Figure 1. Source: the author Jeremy Amayo.
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Appendices

None.

**Declarations**

The author has declared that there are no conflicts of interest.

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**Ethics Statement**

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