

Teaching Strategies to Support Neurodiverse Health Professional Learners

Lisa Meeks, PhD, MA

Clinical Professor , Department of Medical Education,
University of Illinois College of Medicine

Becca Güler, M.Ed., EdD

MedEd, Higher Ed, & Neurodiversity Learning Specialist

By the end of the session, participants will be able to:

- **Define** neurodiversity.
- **Identify** common barriers that neurodiverse learners face in clinical settings and articulate strategies to create more inclusive and supportive environments.
- **Determine** teaching strategies to support neurodiverse learners in acquiring clinical skills, maintaining patient safety, and demonstrating competency.

Time Together

Review Definition
and Population in
HPE

Group Scenarios and
Discussion about how
this shows up in HPE

Review thematic
scenarios at BCH and
how to address these

What is Neurodiversity?

Neurodiversity refers to the natural variation in human brains and how they process information, learn, and behave. It acknowledges that there are many ways to be human and that differences in brain function are not deficits, but rather unique strengths and perspectives. Neurodiversity encompasses both neurotypical and neurodivergent individuals.

Neurotypical is a term used to describe individuals who perceive and process input (ex. sensory, social, data) in a way that is typical (for people worldwide, or within one's own society).

Neurodivergent is a term used to describe individuals who consistently perceive or process at least some type of input in an atypical way.

Medicine Numbers

Table 1. Proportion of Allopathic Medical Students Disclosing Disabilities From 2015 to 2021

	Medical school sample, No. (%) [95% CI] ^a		
	2015 (n = 90 schools; n = 57 794 students) ^c	2019 (n = 82 schools; n = 51 263 students) ^c	2021 (n = 56 schools; n = 36 322 students) ^c
School-reported prevalence of disability types disclosed by full student body			
Overall ^d	1596 (2.8) [2.6-2.9]	2367 (4.6) [4.4-4.8]	2125 (5.9) [5.6-6.1]
ADHD	522 (0.9) [0.8-1.0]	697 (1.4) [1.3-1.5]	629 (1.7) [1.6-1.9]
Learning disabilities	358 (0.6) [0.6-0.7]	430 (0.8) [0.8-0.9]	277 (0.8) [0.7-0.9]
Psychological disabilities ^e	322 (0.6) [0.5-0.6]	734 (1.4) [1.3-1.5]	701 (1.9) [1.8-2.1]
Deaf or hard of hearing	35 (0.1) [0.0-0.1]	29 (0.1) [0.0-0.1]	39 (0.1) [0.1-0.2]
Visual disabilities	46 (0.1) [0.1-0.1]	54 (0.1) [0.1-0.1]	37 (0.1) [0.1-0.1]
Mobility disabilities	42 (0.1) [0.1-0.1]	84 (0.2) [0.1-0.2]	69 (0.2) [0.2-0.2]
Chronic health disabilities	209 (0.4) [0.3-0.4]	437 (0.9) [0.8-0.9]	386 (1.1) [1.0-1.2]
Other functional impairment ^f	62 (0.1) [0.1-0.1]	69 (0.1) [0.1-0.2]	52 (0.1) [0.1-0.2]

Pereira-Lima K, Plegue MA, Case B, et al. Prevalence of Disability and Use of Accommodation Among US Allopathic Medical School Students Before and During the COVID-19 Pandemic. *JAMA Netw Open*.2023;6(6):e2318310. doi:10.1001/jamanetworkopen.2023.18310

Nursing Numbers

Table. Characteristics of Students With Disabilities and School Profiles in US Traditional Bachelor of Science in Nursing Programs

Characteristic	Value	Weighted proportion, % (95% CI)
Student characteristics (N = 6416)		
Students with disabilities, No.	562	8.4 (6.4-10.9)
Type of disability, No.		
Psychological disability (eg, anxiety, depression, bipolar disorders)	224	2.9 (1.9-4.5)
Attention deficit/hyperactivity disorder	141	2.1 (1.7-2.8)
Chronic health condition (eg, lupus, arthritis, chronic back pain)	98	1.2 (0.8-1.9)
Learning disability	50	0.7 (0.4-1.1)
Deaf and hard of hearing	13	0.2 (0.1-0.4)
Other (Tourette syndrome, TBI, stuttering, narcolepsy, ASD)	10	0.1 (0-0.4)
Low vision	10	0.1 (0.1-0.4)
Mobility	6	0.1 (0-0.3)
ASD or autism (from “other”)	5	0.1 (0-0.3)
Acquired or TBI	5	0.1 (0-0.2)
Speech or other communication disability	0	0 (0-1.0)

Jackson BL, Cameron VK, Hodgens TM, et al. Disability and Accommodation Use in US Bachelor of Science in Nursing Programs. *JAMA Netw Open*. 2025;8(2):e2461038. doi:10.1001/jamanetworkopen.2024.61038

Executive Functions: The “Drivers” for Cognition



1. Initiation
2. Working memory
3. Self-monitoring
4. Inhibition
5. Cognitive Flexibility/Shifting
6. Organization
7. Planning
8. Attentional Control
9. Problem Solving

Scenario

A preceptor suggests to you—the supervisor/attending—that a student was unprofessional in the clinical context. You ask for specifics about the behavior or action and the preceptor says, “he was just odd—it made the patient uncomfortable.”

What is the issue with this reporting?

How does this help the student? Or not?

What actions would you take next?

Scenario

A student is struggling to turn in their assignment and is continuously asking for an extension. They seem very upset/anxious as each deadline draws near. You, as the faculty, are concerned about a pattern and provide feedback to the learner stating that they will be written up if the work continues to be late, that being “on-time” is part of being a responsible HCP.

How might this interaction impact the student?

What are alternative ways to address this scenario?

Your Questions and Scenarios- 3 Themes

**Socially
Oriented
Challenges**

**Professionalism
Challenges**

**Learning and
Organization
Challenges**

Socially-oriented challenges

- All examples clinical

Learners who don't modulate volume of voice. Awkward when coming into a hospital room where the child is sleeping or may be overheard by other patients.

How to tell if learner is self-stimming and understanding content OR not listening, how can we ask if they comprehend information without offending them?

Clinician learners who struggle with patient-centered communication that puts families at ease (difficulty reading emotions/family needs)

Speaking volume- utilize a Decibel meter app to practice. Many smartwatches have one built in; free options for cell phones.

Key 1: color code, designate targets

Key 2: confirm no recording



Fidgeting/drawing/stimming in listening- Assess comprehension like others (exams, class Q&A). If context allows (1-on-1 or survey class), ask how they focus when listening

Communication-

Active: must be specific on every aspect of issue:

- Tone? How to adjust (model it!)
- Vocab? What words or phrases substitutes
- Eye contact? # seconds longer/shorter

Passive (reading emotions, picking up on tone): **MUST BE LONGER, INDIVIDUAL INTERVENTION**

Professionalism-A: Navigating the system/ professionalism

- All examples clinical
- Hyperfixation on making mistakes that will "get them fired" but overconfident and not utilizing policies/procedures.
- Opinion shopping, don't stop until find agreement.
- Focus on completing their eval, even in a certain way, when limited time to work with them.

(resident) Not completing tasks, avoidance behaviors, lack of communication with team.

Young students in trainee roles with limited to no professional exp., can't incorporate feedback.

Learners unwilling to look up or do anything outside of work, as new grads and no experience

First 3- may be from anxiety or OC disorders, possibly ASD. Likely due to limited professional experience, don't know what's appropriate/tolerated

- 1) Very clear, direct explanation of what's OK and what's not, with consequences.
- 2) Inquire if they did these things because they're feeling lost or worried, reassure and refer.

Not doing job- Depressed? Family or personal crisis?

No prof. exp- new world. Teach class then 1-on-1 HOW to incorporate feedback, what the correct version LOOKS LIKE, and WHEN you must see it.

Unwilling to develop professionally outside work- This is the norm in this field and if not doing, likely poor performance and *extended* training.

Professionalism-B: Multi-step/Prioritizing Multiple “in-the-moment” clinical tasks

Multi-step procedure overwhelmed the learner,
freezing and displaying anxiety.

Difficulty prioritizing tasks/ communications in
managing complex treatment

In critical care, struggle with prioritization or triage
of clinical events, and presenting clearly, time

Intern struggling with task management whom I
huddled with to help make a priority list of tasks

United theme here:

New context means procedural knowledge is limited or
awkward= cognitively demanding.

Help them make a flow chart/decision tree. Can be a
general one or specific ones for separate procedures.
Can do something similar for prepping to present.

Give clear “rules” for prioritization (think “Rock, Paper,
Scissors”).

Talk about your own experience learning to do this, how it
was a big transition! Share what helped YOU!

The goal is to do this independently, so teach the
PRINCIPAL/PROCESS, have them do WITH you, then
on their own.

Learning & Organization-A: Organization/Time & Task Management Undergrad – clinical

**Time management, Difficulty with organization
(follow-through, schedules, communication,
details)**

Spend too much or too little time managing tasks.

**Learners active in student org leaders but struggle
with time management and prioritization.**

**A challenging time looking in advance at the
schedule for the day.**

**Team member gets things done right, but serious
procrastinator and always starts/finishes late.**

Time management and organization- (instructor) set up large projects in steps with progressive due dates and grades! Help with backward planning- start at due date, then work backwards to ID key points they should be at x step (meet with you? Submit?

Too much/little time- demonstrate balance, recommend amount of time for tasks (can try, adjust)

Leaders have obvious roles, orgs have procedures, (study more ambiguous). Student should set/publish “office hours” for student org tasks/communication.

Next day sched- Why? Overwhelmed by length- teach to segment and prep. Forgets? Set alarm.

Kindly, CLEARLY explain how their lateness affects you and/or team. Set a “Stuck? Get help” date.

Learning & Organization-B: ADHD/Issues with Focus

**How to best support trainees with ADHD;
ADHD and related issues**

Learning Disabilities and Learning Supports/Teaching Strategies

- **Balance of keeping neurodiverse learners engaged and interested but not overwhelmed.**
- **Cultivating group-friendly learning environments and facilitating social acceptance. Neurodiversity in zoom learning environments.**

When a learner is not able to "connect the dots" or lacks critical thinking

Supporting a trainee who has dyslexia learning to both read and document notes from providers.

ADHD- Set course projects in segmented deadlines; Consider a 1-time-only (for all) late work extension WITH penalty; no other extended deadlines allowed.

All learners- set a predictable pattern for content organization, present up to 15 min content then interaction (written, spoken, polling) (1-2 min). This is doable in a Zoom environment, as well. They can submit Qs for these interactions as daily assignment.

Critical thinking- work through a needed situation with them, prompting with a question, they note the Qs. Guide them in making a prompt list to prompt themselves through similar tasks later.

Dyslexia- screen reader (listen). Point out common phrases and their order. For documenting, make sure spellcheck available or extra time if graded & timed. Allow and teach using stored templates in HER.

RESOURCE:
Executive Function-Specific Prompts

RESOURCE: Prompts for Discussions to Determine Executive Function Strategies

Prompts for Initiation Issues:

- Do you start but quickly hit a wall, or are you not actually reaching a start?
- What do you find yourself doing INSTEAD of the thing you're supposed to?
- Is there any sense of overwhelm regarding HOW to get started (too hard to choose WHAT should go first, or a method to go about it)?
- Do you perhaps fear that the sooner you start, the sooner you could fail it?
- Do you have perfectionist/completionist tendencies?

Include questions from Focus sections, and if relevant, Organization/Planning sections.

Prompts for Working Memory:

- Do you find yourself frequently having to reread/repeat recording, not because distracted but just lost the ideas?
- How long do you work with input (reading, audio, video) before pausing and using?
- How do you engage/interact with the material? Notes, summary out loud, mind mapping, etc.

Prompts for Problem Solving:

- Do you experience getting stuck when you hit a snag (resource missing, something didn't work, instructions unclear)?
- What campus resources do you use (tutoring, coaching, mentoring, writing or math center, etc.)?

RESOURCE: Prompts for Discussions to Determine Executive Function Strategies

Prompts for Inhibition Issues:

- Do you sometimes find yourself having spent a long time on something and later realize it was off-task or off-topic, or not done according to instructions?
- Do you frequently find yourself “losing time” as you work on tasks and surprised when you see a clock? Any trouble determining what you actually did in that time?

Prompts to Determine Assignment Scope (avoid rabbit holes, support Inhibition)

- Who is my audience? What do they already know? What do they NEED me to tell them (orient to context, or new information they likely won't have)?
- Is this information necessary for the reader to understand *another* key topic?
- What did the assignment instructions say and/or model show? (= how far to go)

Prompts for Flexibility/Shifting

- Are you able to stop one task, but find it confusing to try to switch to a new one?
- Do you find it difficult or frustrating to try a new way to do something?
- Do you feel a sense of loss (time, effort) when abandoning an idea or failed task?

RESOURCE: Prompts for Discussions to Determine Executive Function Strategies

Prompts to Create Focus (also support Initiation)

- What time of day are you generally most alert?
- Where do you usually work/study? Does anyone or anything tend to distract you there? Can you control those things?
- How long do you try to work in one sitting? How often do you have breaks?
- Do you tend to fidget or move while reading/listening/writing?
- What actions can you take while working on a task (walking around, dancing in place, fiddling with a fidget cube or jewelry)?
- Who (if anyone) needs to be able to reach you at all times? Saved as favorite contact? Do you know how to adjust your Do Not Disturb settings?

Prompts for Self-Monitoring in a Project/Presentation/Writing

- Does the writing/speaking sound professional? Unbiased?
- Is there evidentiary support for the ideas presented? Did I cite each source (or leave a note)?
- Is this on-topic? Does my audience need more (or less)?
- Does this contribute to the project goal (or is it on-task for the assignment)?
- Am I following standards (i.e. format, order of presentation, etc.) for the field (or course)?

RESOURCE: Prompts for Discussions to Determine Executive Function Strategies

Prompts for Developing an Organization System

- Do you generally do better with digital reminders like calendar alerts or physical/analog ones like a planner or journal?
- What DOESN'T work about your current system (do you leave planner? Distracted by other apps or texts coming in?)
- What items have to be physically with you? What needs to be (or could be) kept digitally?
- What function does each action in the system serve? I.e. Why are we color-coding; does it serve a purpose or mostly just look nice?
- What daily maintenance would the system require? Is it realistic?

Prompts for Planning

- What task seems most appealing today? How urgent (time-sensitive) is it?
- Is there a task that is more urgent (time-sensitive)?
- What would happen if I didn't do this task now (ask for each task)?
- Is someone waiting for me to complete x task so they can do their part?
- What resources do I need to accomplish these tasks? Can I get them myself or do I have to request and wait for the resources?

Contact Information

Lisa Meeks, PhD, MA.
lmeeks@uic.edu

Becca Güler, EdD
gulerbecca@outlook.com



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