



# Neurodiversity in Pharmacy: Challenges and Opportunities

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# Disclosure

I have no financial disclosure or conflicts of interest with the presented material in this presentation.

# Learning Objectives

- Describe common learning differences that are incorporated under the neurodiversity umbrella.
- Identify challenges neurodiverse pharmacy students and technicians and pharmacists encounter in pharmacy education and the pharmacy workplace.
- Discuss how neurodiverse thinking can benefit the pharmacy profession.

# What is Neurodiversity?

## Medical Model

The person is disabled – focuses on “impairments”

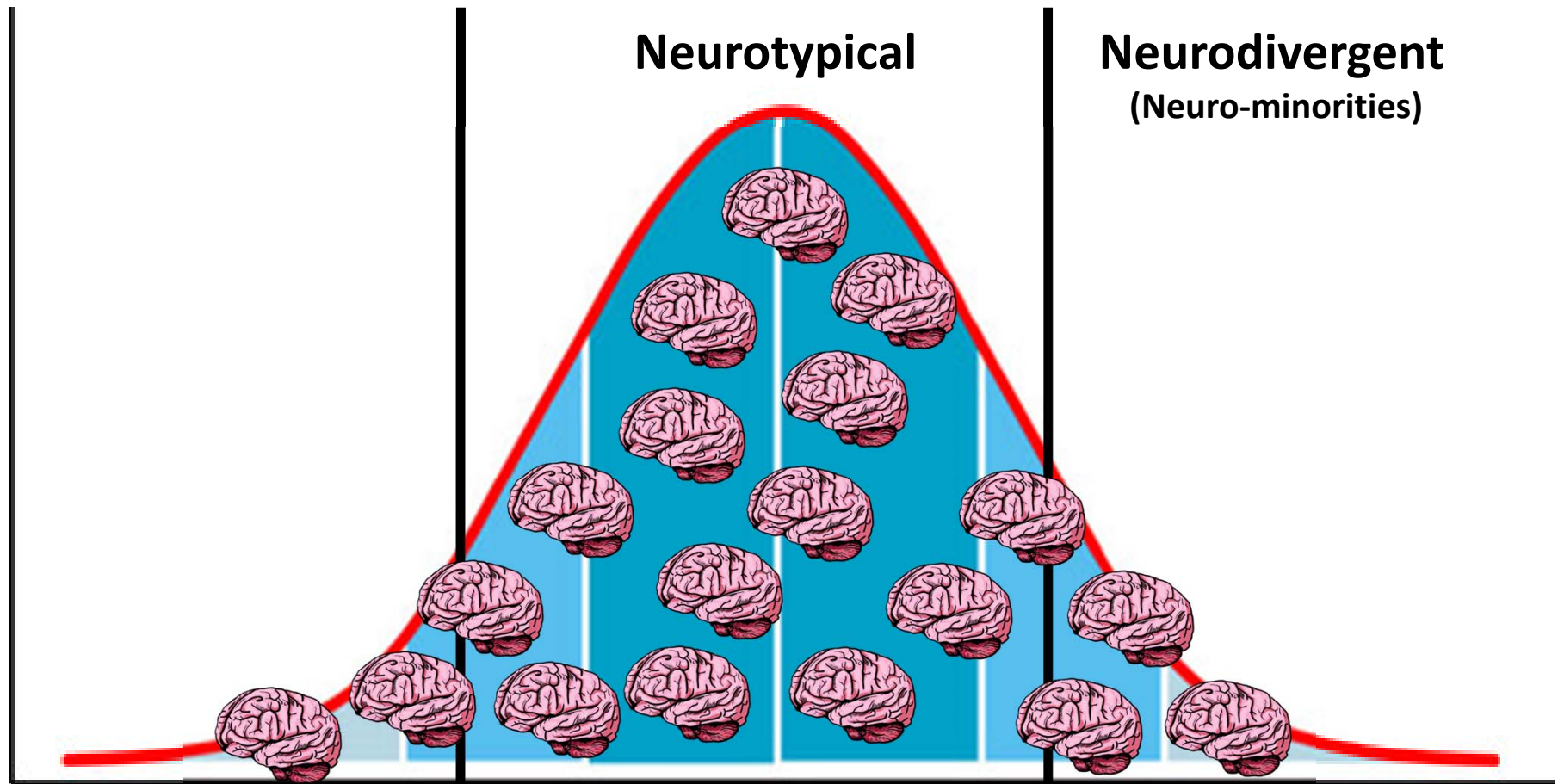
## Social Model

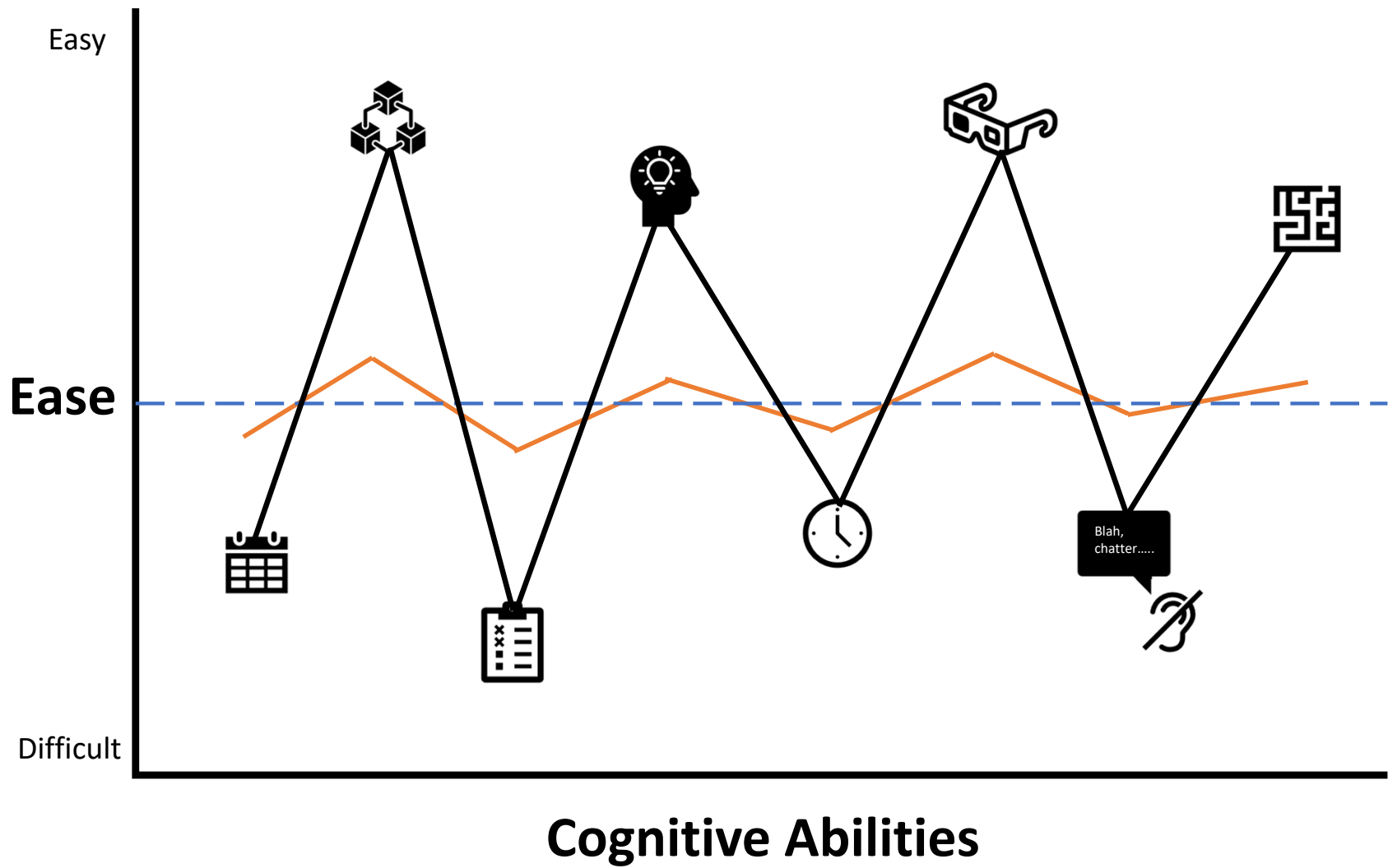
The environment disables a person – focuses on “fit” into environment

## Biopsychosocial model



# Across the Population





**Developmental – Applied**

- Dyslexia
- Dysgraphia
- Dyscalculia



**Developmental – Clinical**

- ADHD
- ASD
- Down Syndrome

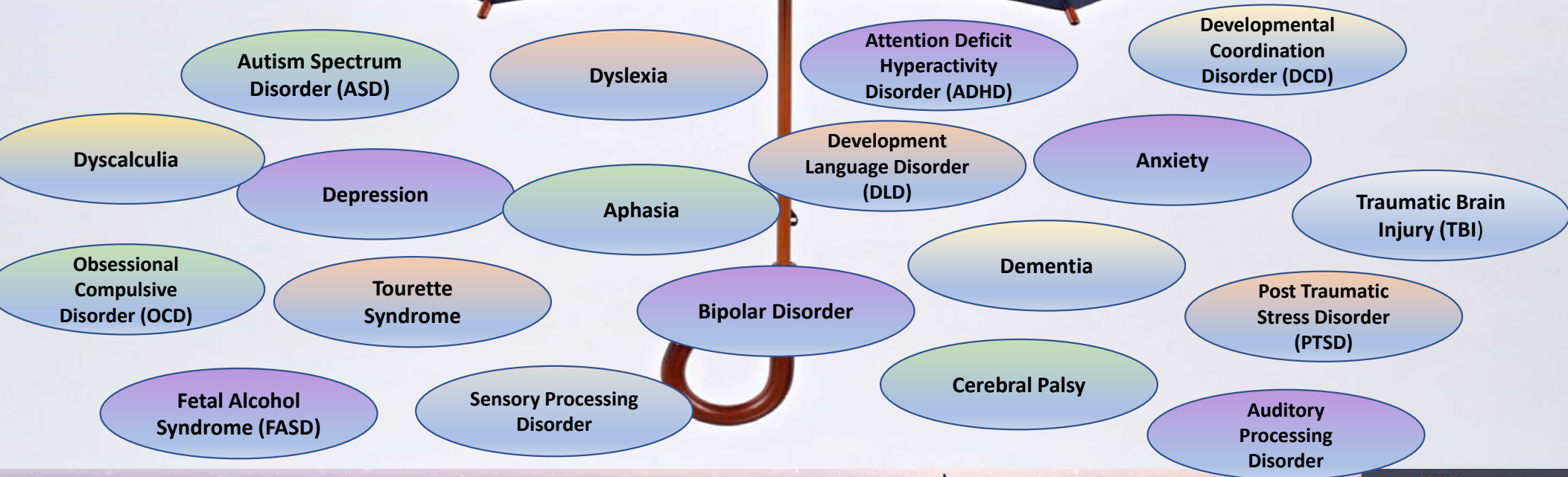
**Acquired – Clinical  
(Psychiatric)**

- Depression
- Anxiety
- Schizophrenia

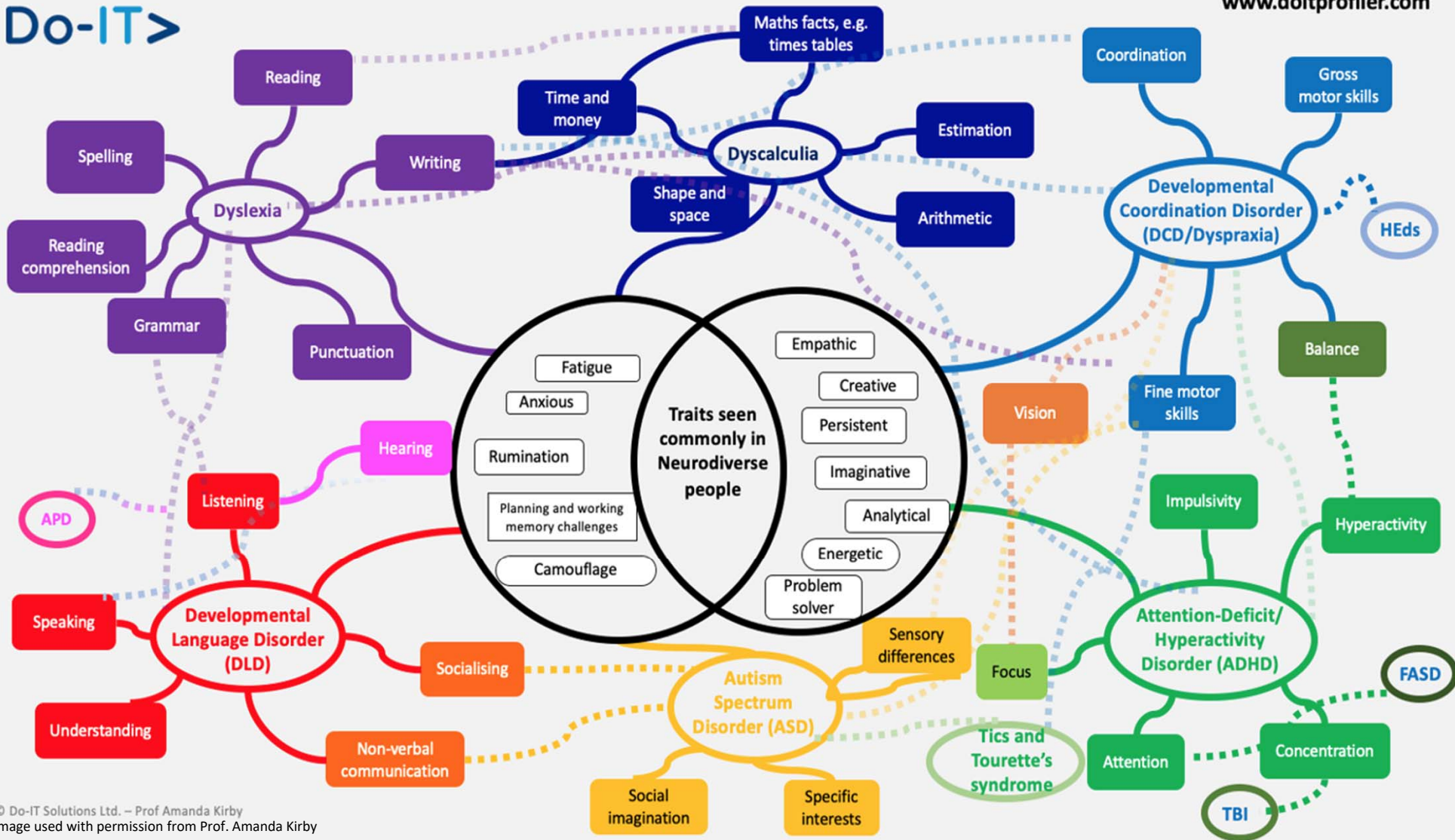
**Acquired – Clinical  
(Neurological)**

- Aphasia
- Amnesia
- Dementia

# Neurodiversity







# Four Most Common/Studied Neurominorities

Autism Spectrum  
Disorder (ASD)

<1-2% globally

Dyslexia

up to 10%

Developmental Coordination  
Disorder (DCD)

[dyspraxia]

up to 6%

Attention Deficit  
Hyperactivity Disorder  
(ADHD)

up to 5% worldwide, higher in USA

British Medical Bulletin, Volume 135, Issue 1, September 2020, Pages 108–125, <https://doi.org/10.1093/bmb/ldaa021>

ICHP  
Spring Meeting  
2024

# Task-related challenges

## ASD

- Time management
- Concentration
- Coping with more than one task
- Social/communication difficulties

## Dyslexia

- Time management
- Organizational skills
- Short-term memory
- Social self-esteem
- Literacy
- Communication
- Stress management

## ADHD

- Time management
- Concentration
- Difficulty working on teams
- Depression
- Self-regulation
- Insomnia

## DCD

- Organizational skills
- Working memory
- Self-esteem
- Processing speed
- Motor difficulties operating equipment

# Task-related attributes

## ASD

- Memory
- Focusing or hyper-focusing on interest area – “specialist” skill
- Detail observation
- Creative

## Dyslexia

- Entrepreneurialism
- Creativity
- Visual-spatial reasoning
- Story-telling

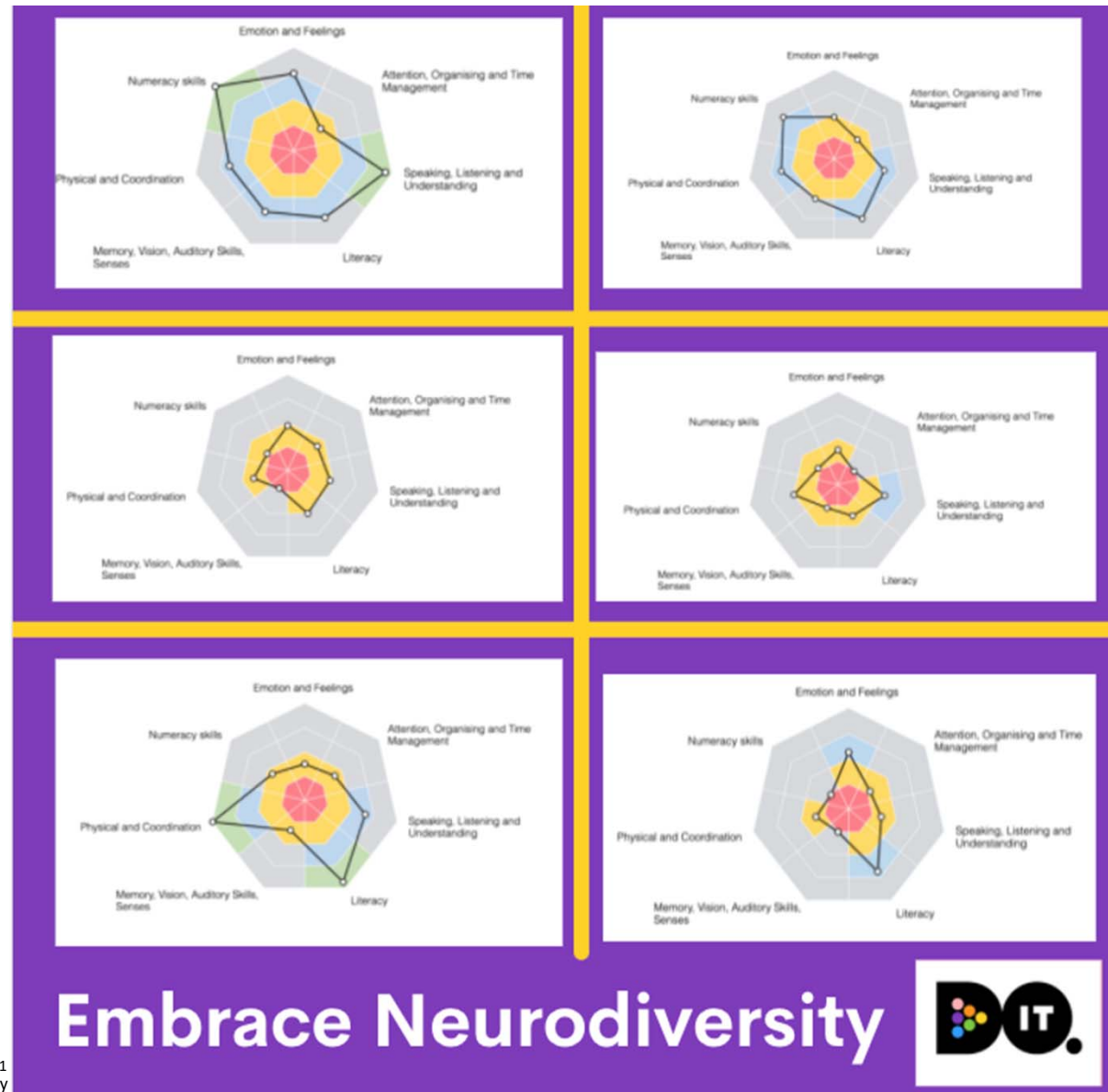
## ADHD

- Creativity
- Visual-spatial reasoning
- Hyper-focus
- Passion

## DCD

- High verbal comprehension

# Profile of six different individuals with ADHD



<https://twitter.com/profamandakirby/status/1490943981546467328/photo/1>  
Image used with permission from Prof. Amanda Kirby

# Unmask the potential

- Outside the box thinking
- Empathetic
- Innovative
- Attention to detail
- Hyper-focus
- Entrepreneurship
- Visual-spatial skills
- Social interaction



# What can we do to embrace neurodiversity in pharmacy?

- Neurodiversity training – part of DEIA efforts
  - Dispel misconceptions
  - Benefit of diverse workforce
- Universal Design – \*especially in communication\*
- Peer support groups
- Job carving
- Sensory-friendly workspaces or sensory-friendly spaces
- Mentoring and coaching programs
- Clear expectations and goals
- Creating a culture of open communication and celebration of diversity

# Summary

- Training students, preceptors, pharmacy staff, and faculty as part of DEIA efforts can help increase awareness of neurodiversity and help to decrease stigma and misunderstanding
- Designing spaces and materials to be more inclusive of individuals with neurodiversity can also improve accessibility for all
- In a rapidly changing pharmacy landscape, neurominorities can bring a wealth of attributes to the pharmacy field



# References

- Goldberg H. Unraveling neurodiversity: Insights from neuroscientific perspective. *Encyclopedia*. 2023;3:972-980.
- Doyle N. Neurodiversity at work: a biopsychosocial model and the impact on working adults. *British Medical Bulletin*. 2020;135:108-125.
- Kamalakannan A. A theoretical perspective on workplace neurodiversity; opportunities and challenges for HR management. *Bharatiya Shiksha Shodh Patrika*. 2023;42(2):79-84.

# Resources

- Employer Assistance and Resource Network on Disability Inclusion (EARN) <https://askearn.org/page/neurodiversity-in-the-workplace>
- Neurodiversity in the Workplace <https://nitw.org/>
- Do-IT <https://doitprofiler.com/>
- Neurodiversity Hub <https://www.neurodiversityhub.org/resources-for-universities>
- Neurodiversity Network <https://www.neurodiversitynetwork.net/neurodiverse-universities-initiatives>