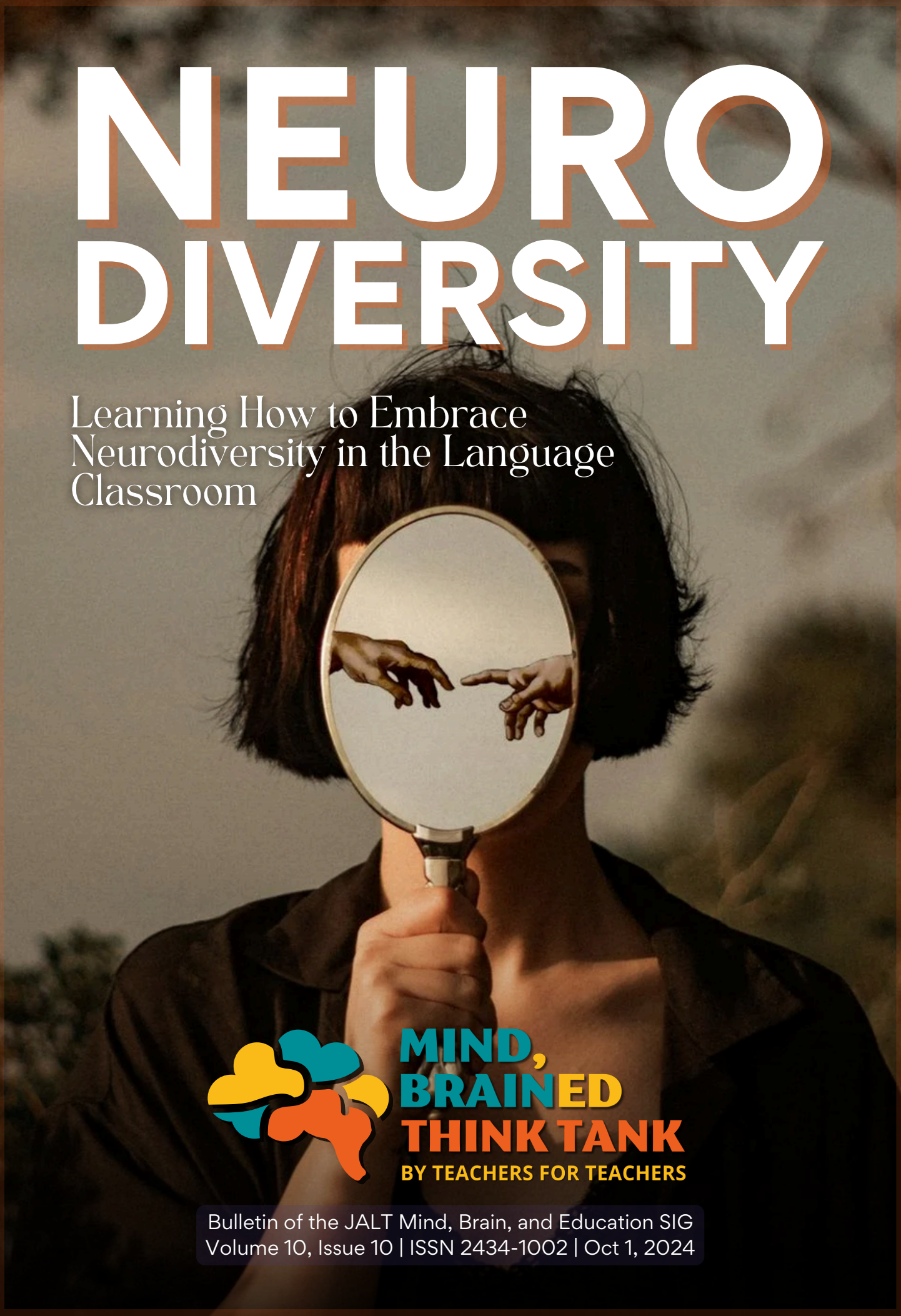
NEURO DIVERSITY

Learning How to Embrace Neurodiversity in the Language Classroom



MIND, BRAINED THINK TANK
BY TEACHERS FOR TEACHERS

Bulletin of the JALT Mind, Brain, and Education SIG
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MIND, BRAINED THINK TANK

BY TEACHERS FOR TEACHERS

MAIN

Neurodiversity in Education

MORE

Supporting Neurodiverse Students and Faculty

EVEN MORE

Catherine Drennan on Her Dyslexia and Its Advantages

21ST CENTURY LEARNING

You come across an interesting video. To learn more, you look up the research. Then you discuss how it impacts teaching with a friend. That's 21st Century Learning and the approach we use.

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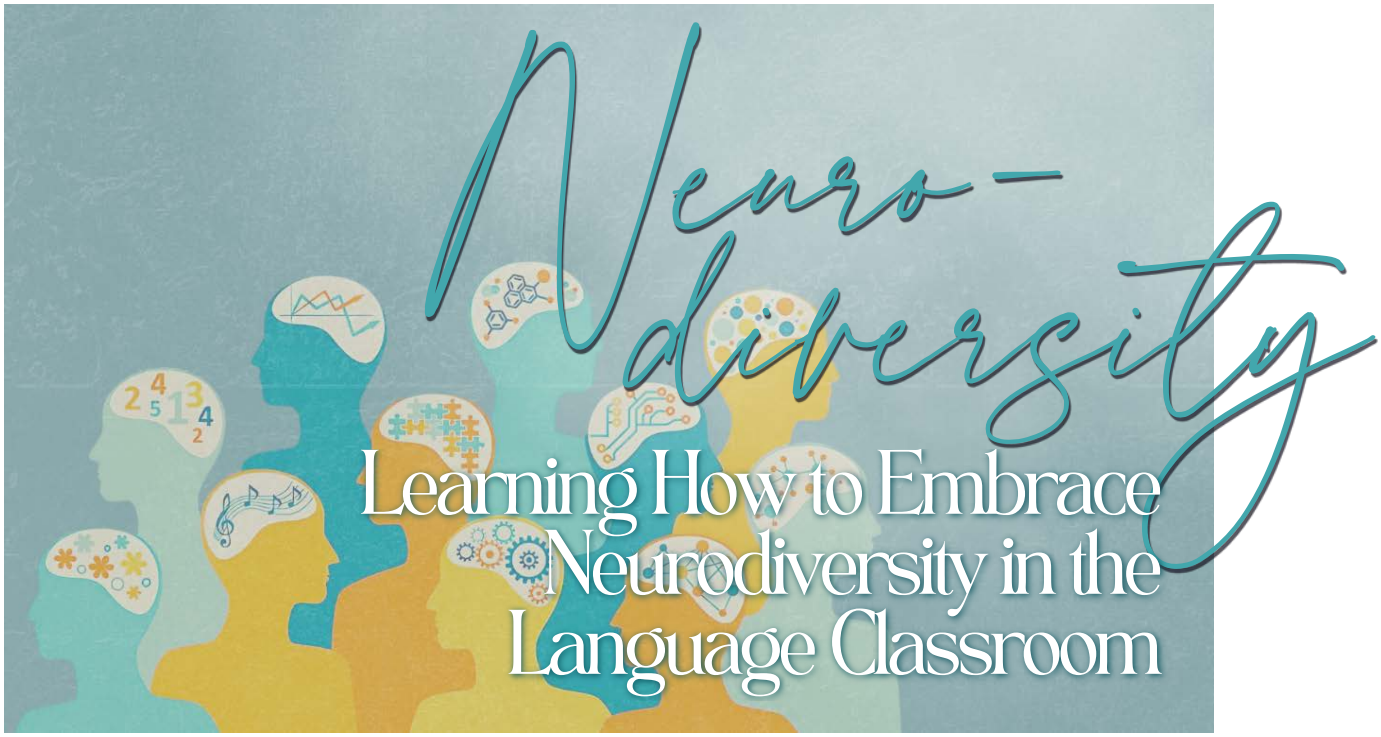


Many moons ago in 2019 we devoted two *Think Tanks* to neurodiversity. As scientists' understanding of neurodiversity is continuously evolving, we're taking another deep dive into neurodiversity this month.

In the **Main** podcast episode, Chiara Horlin gives listeners background information on neurodiversity in educational contexts. In the **More** podcast episode, Liz Norell discusses the prevalence of neurodiversity in higher education and ways instructors can support neurodivergent students and colleagues. In our **Even More** video, Catherine Drennan describes the ups and downs of her educational journey and her drive to continue learning despite the challenges she experienced with dyslexia.

Then, **Heather Kretschmer** and **Yasser Tamer Atef** introduce the issue.

In the *Think Tank*, **Hannah M Grossman** defines cognitive load, explains cognitive processing differences neurodivergent people experience, and suggests ways teachers can help neurodivergent learners manage cognitive load. Then, **Sean H. Toland** gives teachers some strategies for making learning more accessible for both neurodivergent and neurotypical students. Next up, **Heather McCulloch** explains what universal design for learning is and how it can be applied to introverted learners. **Julia Daley** reviews *How to ADHD* by Jessica McCabe and explains how this book has positively impacted her life. **Scott Bellman** and **Eric H. Chudler** write about a summer program for neurodivergent teenagers interested in science and report on these teenagers' strengths from their parents' point of view. **Alexandra Burke** examines some changes in the Japanese educational system designed to support all learners, shares insights into neurodiversity, and gives teachers practical advice. **Curtis Kelly** concisely gives readers an overview of some signs of neurodivergence in our students as well as practical classroom tips.

Finally, in the Plus section, **Marc Helgesen** revisits low-stakes testing.

MAIN & MORE

Neurodiversity in Education
Chiara Horlin | The Learning Scientists

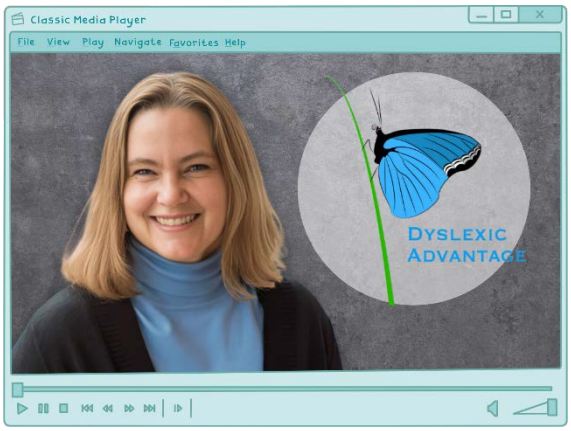
In this episode of *The Learning Scientists*, Dr. Horlin explains what neurodiversity truly means and explores the challenges faced within education. Throughout the conversation, it becomes clear that embracing neurodiversity can enhance learning experiences for everyone, though it's equally important to recognise the unique hurdles neurodivergent students and educators encounter. The episode highlights how we can all be allies in creating a more inclusive and supportive educational environment. Listen to the full podcast **here**.

Supporting Neurodiverse Students and Faculty
Liz Norell | Tea for Teaching

Liz Norell speaks about supporting neurodivergent students and faculty in this episode of the *Tea for Teaching* podcast. She discusses the barriers neurodivergent students face and offers practical strategies for creating inclusive learning environments, while highlighting the importance of clear communication, scaffolding tasks, and recognising diverse learning needs. The conversation also explores challenges neurodivergent faculty encounter and celebrates their unique strengths. Listen to the full podcast on the *Tea for Teaching* website.

MIT Professor Catherine Drennan on Her Dyslexia and Its Advantages

Catherine Drennan | Dyslexic Advantage



Dr. Catherine Drennan reflects on her career at MIT and challenges conventional views of intelligence. Despite being deemed "smart" due to her position, she questions this label, given her struggle with severe dyslexia as a child. After a challenging but ultimately successful academic career, she found that her dyslexia, particularly her ability to recognise patterns, actually enhanced her research. Listen to the full talk here.

Corrections

A correction to the September issue:

The word “Treating” was mistakenly dropped from the p. 44 title: “Treating Digital Devices Like the Tools That They Are.”

> "If they can't learn the way we teach, we teach the way they learn."
>
> (O. IVAR LOVAAS)

A Message from Our Resident "PC Witch"

Dear Readers,

In the grand tradition of things looking terribly similar yet being rather different (think wizard robes versus bathrobes), we've embarked on a small but necessary quest to diversify our logos. You see, much like a pair of almost identical magic rings—one opening portals to delightful realms of knowledge, the other to, well, the broom cupboard—our previous designs led to some confusion.

We realised that our "Think Tanks" could be mistaken for the parent member-based organisation itself, the Mind, Brain, Education Special Interest Group (BRAIN SIG) or the *MindBrainEd Journal*. To prevent further cases of mistaken identity—because no one wants to show up to the wrong meeting with a prepared monologue on synaptic plasticity—we present to you our new, distinctly unambiguous logo… but one that shows we are still part of the BRAIN SIG!

MIND BRAINED THINK TANK
BY TEACHERS FOR TEACHERS

MIND, BRAIN & EDUCATION
SPECIAL INTEREST GROUP

We hope this clears things up, and remember: not all logos lead to the same journal, but the journey through the labyrinth of the mind? That's always an adventure!

Your Most Industrious Computer Witch

Nicky

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click the titles to jump to the articles

The Think Tank


WARMLY WELCOMING NEURODIVERGENT LEARNERS INTO THE LANGUAGE CLASSROOM

Heather Kretschmer and **Yasser Tamer Atef** reflect on the ways neurodivergent students may experience the language classroom.

SUPPORTING NEURODIVERGENT LEARNERS THROUGH COGNITIVE PROCESSING AWARENESS

Hannah Grossman explores how understanding neurodivergent learners' cognitive processing differences, such as sensory, attentional, and social-emotional challenges, can help educators create inclusive environments that reduce cognitive load and enhance learning.

CULTIVATING A MORE INCLUSIVE LEARNING ENVIRONMENT FOR NEURODIVERSE EIL STUDENTS

Sean H. Toland highlights five pedagogical strategies that can help English as an international language (EIL) teachers foster a more accessible and inclusive learning environment.

UNIVERSAL DESIGN FOR LEARNING AND INTROVERTS IN A LANGUAGE CLASSROOM

Heather McCulloch discusses how introverts can thrive in lively language classrooms, revealing how a few small tweaks with UDL principles allow them to shine.

BUILDING MY ADHD TOOLBOX: A REVIEW OF *HOW TO ADHD*

Julia Daley reviews the 'How to ADHD' book, exploring its personal insights and practical tools for managing ADHD.

The Think Tank

PARENTS CAN PLAY A CRITICAL ROLE FOR NEURODIVERGENT STUDENTS TRANSITIONING TO COLLEGE

Scott Bellman and **Eric H. Chudler** explore how parents view the strengths of their neurodiverse children.

BARRIER FREE CLASSROOMS: THE ROAD TO CHANGE IN JAPAN AND IDEAS FOR YOUR CLASSES

Alexandra Burke looks at changes to mainstream education law and how JALT has responded. She also offers practical examples to help teachers to understand what it is like to be different and a "hit list" of things to try from her recent Co-Edited book.

QUICK GUIDE TO RECOGNIZING AND DEALING WITH LEARNING DISABILITIES

Curtis Kelly relays some suggestions for teachers from the internet.

Plus

ANOTHER LOOK AT LOW-STAKES TESTING

Marc Helgesen takes a slightly different take on low-stakes testing, a topic Stephen M. Ryan wrote about last month.

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Warmly Welcoming Neuro-divergent Learners into the Language Classroom

Written by
Heather Kretschmer
Yasser Tamer

Imagine for a moment that you are planning to invite around eight friends for tea. Each friend brings with them a unique presence, a different perspective, as distinct from one another as they are from you. Now, imagine that you could choose to host this group in one of the three rooms described below. Which space would you choose, and would you adapt it in any way to make it more welcoming for your guests?

Option A is a large, high-ceilinged room with an unpretentious, rustic ambiance. The walls, floor, and furniture are made of wood. Your guests could all be seated on heavy benches on either side of a long, narrow table next to a big window.

Option B, by contrast, is an elegant circular room where an ornate chandelier commands attention from the ceiling's center. An oval table sits at the heart of the room, surrounded by a couch and two armchairs. Floor-to-ceiling windows bathe the space in light, while various couches and chairs line the walls. Not all your guests could sit around the oval table. And those seated at the edge of the room would look inward, their gaze naturally drawn to the guests sitting in the smaller, intimate cluster of seats around the table.

photos by Jan Kohl (Unsplash), Francisco De Legarreta (Unsplash), and Raphael Azevedo Franca (Public Domain)

Option C is a spacious Japanese tearoom. Huge panels made of wooden lattice covered in translucent paper line the walls, and outside there are beautiful trees and plants in a carefully cultivated garden. Your guests would kneel on special mats on the floor as there are no seats or tables in the room.

Of course, each room has advantages and disadvantages. Option A allows all your guests to sit together, but they would have no choice but to squeeze themselves onto a hard bench devoid of cushions. Option B has plenty of different padded chairs and couches, but any guests who are not seated around the table in the center of the room will be marginalized. In Option C, your guests can place themselves in such a way that no one is excluded. However, some guests in Option C might feel uncomfortable kneeling on the floor. And while the formal settings of Options B and C require both hosts and guests to conform to certain behavioral norms, Option A's simple setup allows for a laid-back informality. So, what do the seating arrangements for tea with friends have to do with the students in our classes?

Just like in Option A, where guests can only sit on hard benches, students aren't always given much choice or voice in course topics, classroom activities, or assessments. How often do teachers set all of their students the same task? Or force

them to complete a task a certain way? Not only does this one-size-fits-all approach stifle creativity, it can also act as a barrier to learning for some neurodivergent students.

Sometimes students in our classes position themselves similarly to the guests in Option B, the room with an inner and outer seating arrangement. Some students may be more extroverted risk-takers, answering the teacher's questions in the target language. How often do we seat these more outgoing students in our inner classroom circle, by giving them our attention, thankful that we have students brave enough to communicate in the target language? In contrast, we may unintentionally relegate any student who is less willing or less able to participate in discussion activities to the outer classroom circle.

Still other times students might experience a class like in Option C, the tearoom without chairs or tables. Just like guests at a Japanese tea ceremony, some students may already know what to expect in the language classroom and feel comfortable there, but other students, including some neurodivergent students, may find the language classroom very foreign. How often do we assume our students already understand the social norms of the language classroom? And when a student doesn't conform to our expectations, how often do we ascribe this student's behavior to bad intention?

As teachers, we find ourselves in the role of hosts, entrusted with the responsibility of shaping a classroom that is both intentionally equitable and hospitable (Bali and Zamora, 2022). It's not simply a matter of giving students choices, though that's important. It's about recognizing when a student is adrift, perhaps on the margins, and taking deliberate steps to help them integrate into the shared classroom space we cultivate. In doing so, we scaffold classroom activities that, to some, seem insurmountable, while to others, they are merely new. This approach isn't just for our neurodivergent students—it benefits the entire learning community. In fact, such care, when given freely, becomes the quiet force that enables students to belong, to succeed, and, ultimately, to reshape the classroom experience.

A key way of creating a more engaging learning environment for students is by being a compassionate and attentive instructor—someone who centers students' interests, needs, and passions in the classroom. Consider, for instance, when you have a neurodivergent student in your

class and you're uncertain about the best way to support them. Once the student or their parents have reached out to you, your response should be both proactive and clear. This includes thoughtfully inquiring about what strategies you could adopt or avoid to best meet the student's needs. The principle "nothing about us without us" is foundational when addressing neurodiversity. Involving the student in any decisions concerning them creates a more inclusive and rewarding learning experience.

As you read through this issue, we invite you to reflect on the steps you can take to support neurodivergent learners. Think about these questions: How can we create a welcoming space for our neurodivergent students? How can we make sure they have a seat at the table, i.e., how can we intentionally include them in decisions about the learning space? And how can we ensure that it's not just any old seat, but one where they feel comfortable and able to learn; that is to say, when teaching and learning is accessible, and when teachers and classmates are empathetic and are curious about diverse perspectives.

Acknowledgement:

We first learned about the "seats at tables" metaphor from Maha Bali when we experienced her guiding students through a "Who is Excluded" activity with a set of similar photos in one of her classes in 2022. She writes about these ideas here.

Yasser Atef is a student and a disability and accessibility advocate, pursuing an undergraduate degree in English and Comparative Literature at The American University in Cairo. He engages in writing and facilitates workshops on various topics surrounding disability and accessibility. His interests include disability studies, inclusive teaching, and pedagogy, and, recently, generative AI in higher education.

Heather Kretschmer has been teaching English for over 20 years, primarily in Germany. She earned degrees in German (BA & MA) and TESL (MA) from Bowling Green State University in Ohio. Currently, she teaches Business English and Intermediate English at the Georg-August-Universität Göttingen in Germany.

Supporting Neuro-divergent Learners through Cognitive Processing Awareness

Written by
Hannah M. Grossman

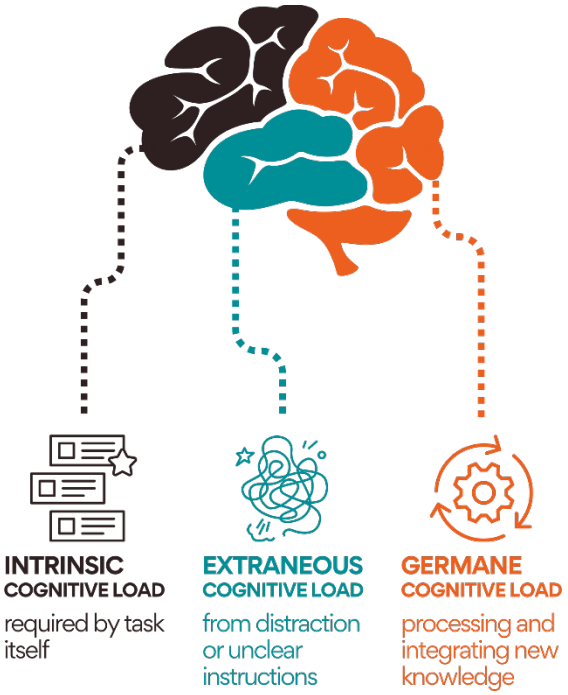
The concept of neurodiversity has transformed how we understand the varied cognitive experiences of learners. Neurodivergence refers to the natural differences in how individuals think, process information, and learn. Rather than viewing neurodivergence as a limitation, educators are increasingly recognizing these differences as unique strengths and opportunities, while also acknowledging the challenges they present. A helpful way to frame neurodivergence is through cognitive processing differences—the variations in how individuals perceive, process, and respond to sensory, cognitive, and emotional stimuli. Understanding these differences enables educators to create inclusive environments that reduce learning barriers.

One of the most effective ways to design for these differences is by using cognitive load theory, a framework that helps balance the mental demands placed on learners. By managing cognitive load, educators can create engaging and accessible learning tasks without overwhelming students.

Cognitive load theory: A tool for educators and learners

Cognitive load theory, developed by John Sweller in the late 1980s, is grounded in educational psychology and instructional design. It is based on the concept of limited working memory—the part of our brain that holds and processes information for short periods. When learners are presented with too much information at once, or if the information is poorly put together, they may experience cognitive overload, making it harder to learn and retain knowledge.

Cognitive load is divided into three categories:



1. Intrinsic Cognitive Load:

This refers to the mental effort required by the task itself. Some tasks naturally require more cognitive effort, such as solving complex math problems, while others require less. The intrinsic load of a task can vary based on factors such as a learner's familiarity with the subject matter or the strategy used to solve the problem.

2. Extraneous Cognitive Load:

This refers to the mental effort caused by distractions or poorly designed materials that are not directly related to the task. For example, unclear instructions or a distracting environment can increase extraneous load, diverting attention away from learning.

3. Germane Cognitive Load:

This is the mental effort dedicated to processing and integrating new knowledge. While this type of load supports learning, it must be managed to prevent learners from becoming overwhelmed.

By understanding these types of cognitive load, educators can create learning experiences that support neurodivergent learners by reducing unnecessary mental effort and focusing on the intended learning goals.

Understanding Cognitive Processing Differences

Neurodivergent learners experience a wide range of cognitive processing differences that shape how they interact with tasks and environments. These differences affect how they process sensory information, maintain attention, comprehend material, manage emotions, and interact with others. Supporting learners with these differences requires an understanding of how they experience and manage cognitive load. Here are some common types of cognitive processing differences:

1. Sensory Processing:

Sensory processing refers to how individuals experience and respond to stimuli, such as sound, light, and touch. Some learners may have heightened sensory sensitivity, becoming overwhelmed by loud noises, bright lights, or certain textures. The intensity and amount of this sensory information can lead to cognitive overload. Others may be sensory-seeking, needing additional stimulation to remain engaged. In both cases, adjusting the sensory environment can reduce extraneous cognitive load by removing distractions or providing necessary stimulation.

2. Perceptual Processing:

Perception involves how the brain interprets sensory input. Learners with dyslexia, for example, may struggle with reading due to difficulties processing letters and symbols. This increases intrinsic cognitive load, as they must work harder to decode visual information. Similarly, individuals with aphantasia, who lack strong mental visual imagery, might need different strategies to complete the same task as those with typical visual imagery. Assistive technologies, like text-to-speech software, can alleviate some of these loads.

3. Attentional Processing:

Attentional processing refers to the ability to control one's focus on a task. Learners with ADHD may find it challenging to maintain consistent focus due to distractibility or hyperfocus on competing stimuli, which increases extraneous cognitive load. These attentional difficulties often come with identity complexities, as societies may mistakenly attribute these biological differences to a person's disposition or diligence. Social-emotional support in self-

reflection and self-kindness can help individuals develop strategies to manage their attention-processing differences.

4. Comprehension Processing:

This refers to how learners understand and retain information. Students with working memory challenges, such as those with ADHD or dyslexia, may struggle to hold and manipulate multiple pieces of information simultaneously, increasing intrinsic cognitive load during multi-step processes. Breaking tasks into smaller chunks and using visual aids can help reduce this load. Comprehension processing differences can also involve social and interpersonal aspects, such as literal interpretation, difficulty understanding social structures, or a strong preference for honesty in communication.

5. Social-Emotional Processing:

Emotional regulation is critical for learners with anxiety, mood disorders, or other emotional conditions. Heightened emotions, such as anxiety or frustration, can increase germane cognitive load as learners expend mental resources managing their emotions. Social-emotional processing also involves understanding and navigating social dynamics. Challenges can arise when there is a mismatch in communication styles between neurodivergent and neurotypical individuals, increasing cognitive load for both groups. Creating environments where these differences are understood and respected can reduce emotional strain and enhance learning.

6. Response Processing:

Response processing refers to how learners interact with tasks, environments, or social situations. This includes motor responses, decision-making processes, and reaction times. Neurodivergent learners may experience delays or difficulties responding to certain stimuli, which can increase extraneous cognitive load. Providing opportunities for additional processing time and offering varied ways to respond (e.g., written, verbal, or through movement) can reduce these cognitive demands.

Overlapping Processing Differences: The Example of Autism

Often, learners have cognitive processing differences across multiple domains. For example, a learner with autism may experience sensory sensitivity, perceptual processing challenges, comprehension issues, and social-emotional difficulties, all of which can increase cognitive load. Recognizing these overlapping differences allows educators to design learning experiences that address the full range of needs.

Being Mindful of Cognitive Processing in Learning Design

Supporting neurodivergent learners requires educators to be mindful of the cognitive processing involved in each learning experience. By understanding how cognitive processing differences affect learning, educators can design lessons that meet diverse needs. Being aware of how sensory input, attention, and comprehension intersect allows teachers to adjust their methods, reduce unnecessary cognitive load, and create more inclusive and effective learning environments.

Practical Strategies for Managing Cognitive Load in Neurodivergent Learners

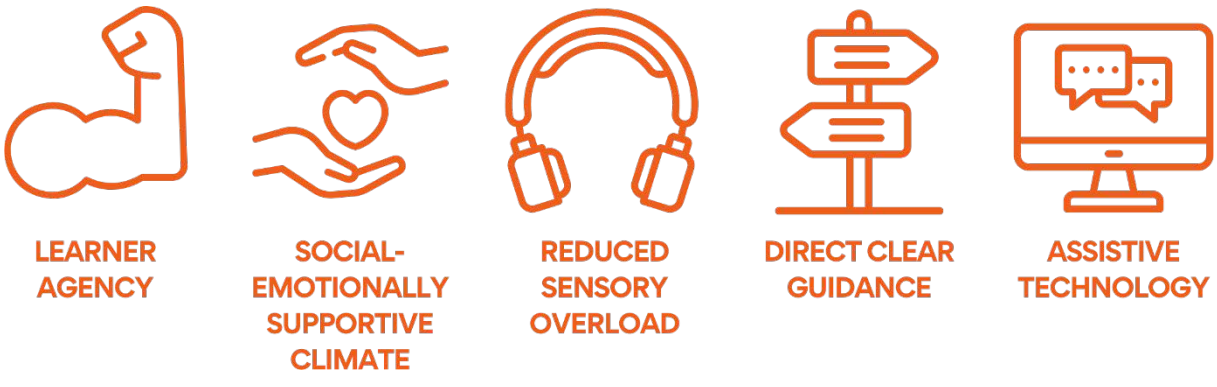
To support neurodivergent learners, educators need practical strategies to balance cognitive load while accommodating different processing needs. Here are some approaches:

1. Supporting Learner Agency:

Empowering learners to identify and communicate their needs is essential for reducing cognitive load. Providing opportunities for students to make decisions about their learning environment, sensory input, or task structure helps them manage challenging experiences. For example, learners might choose between working in a quiet space or a more dynamic area or decide how to approach a task based on their strengths. Offering such choices not only reduces cognitive load but also fosters a sense of agency.

2. Creating a Social-Emotionally Supportive Climate:

Emotional regulation is not solely the learner's responsibility; it is shaped by the learning environment. Creating a



supportive social-emotional climate can reduce germane cognitive load for learners with emotional processing challenges. This can be achieved through regular emotional check-ins, fostering positive peer relationships, and promoting a sense of belonging. Incorporating relationship-building activities and mindfulness practices can create a classroom where learners feel understood and supported.

3. Reducing Sensory Overload:

For learners sensitive to sensory input, creating a sensory-friendly environment can reduce extraneous cognitive load. Options like noise-canceling headphones, dimmed lights, or quiet corners help minimize distractions. For sensory-seeking learners, providing sensory tools (e.g., fidget toys) or allowing movement breaks ensures they remain engaged.

4. Providing Direct and Clear Guidance:

Learners with attentional and perceptual challenges may benefit from various forms of support in managing tasks, such as step-by-step instructions or strategic guidance for task completion. However, some learners may require a broader understanding of the task before it is broken into smaller parts. Providing an overview of the task's purpose, followed by detailed instructions tailored to individual needs, can help reduce intrinsic cognitive load by ensuring learners grasp both the big picture and the specifics.

5. Using Assistive Technology:

Tools like speech-to-text software, visual organizers, and apps that help with time management or task planning can reduce intrinsic cognitive load for learners with perceptual and working memory challenges. These technologies enable learners to focus on understanding the material rather than struggling with the task mechanics. Notably, this article itself was constructed with the assistance of AI writing support.

Conclusion

Understanding neurodivergence through the lens of cognitive processing differences and applying cognitive load theory allows educators to create more inclusive and supportive environments. By reducing unnecessary mental effort and addressing learners' specific cognitive needs, educators can foster success for neurodivergent learners. Small changes—such as supporting learner agency, reducing sensory distractions, or fostering a socially and emotionally supportive climate—can significantly impact students' academic performance and well-being. When learners feel empowered and supported in managing their cognitive load, they experience a more inclusive and effective educational experience.

Hannah M. Grossman is a learning scientist and instructional designer at the UCLA/Duke University National Center for Child Traumatic Stress. Her work focuses on adult collaborative experiential learning and cognitive load theory, aimed at supporting trauma-informed practices and social-emotional learning in youth-serving systems.

Cultivating a More Inclusive Learning Environment for Neuro-diverse EIL Students

Written by
Sean H. Toland

Many people erroneously assume that a typical Japanese university English as an international language (EIL) classroom is a culturally homogenous place, and students are basically cut from the same proverbial cloth. In actuality, there is a tremendous amount of diversity, as English language learners (ELLs) in Japan have different gender identities, sexual orientations, dialects, motivational levels, and come from various ethnic and socioeconomic backgrounds. There is also a wide range of cognitive variations as well as preferences for different styles of socialization and learning. Ultimately, this should not be too surprising as the human brain is a complex organ that has approximately 86 billion nerve cells which are constantly active. Several researchers (e.g., Burke et al., 2024; Young, 2024a) have reported that EIL classrooms in Japan have increasing numbers of neurodiverse students who may encounter significant barriers when studying a foreign language.

What is Neurodiversity?

Neurodiversity is a difficult notion to pin down and one that has generated an array of definitions over the last twenty-five years. For the purposes of this article, neurodiversity is defined as the unique ways

that people think, move, hear, see, process information, and communicate (Ellis et al., 2023). Conditions such as autism spectrum disorder (ASD), dyslexia, dyscalculia, dyspraxia, Tourette syndrome, post-traumatic stress disorder (PTSD), and brain injuries fall under the umbrella of neurodiversity (Spaeth & Pearson, 2023). Historically, these conditions were pathologized by the medical community and perceived to be deficits or disabilities (Clouder et al., 2020). In the 1990s, there was a paradigm shift towards recognizing cognitive variations as a naturally occurring phenomenon and acknowledging that neurodiverse individuals (e.g., Albert Einstein, Mary Temple Grandin) have contributed a great deal towards the evolution of science, technology, and culture (Silberman, 2016).

Dismantling Barriers?

More recently, a number of international and domestic initiatives have been launched to dismantle barriers that students with specific learning difficulties (SpLDs) experience. According to Sewell (2022), SpLDs are "a collection of lifelong conditions that negatively influence learning and daily functioning" (p. 2). In 2015, the United Nations member states adopted the 2030 Agenda for Sustainable Development. The fourth goal in this document aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, 2024, para. 1). In the Japanese context, the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) enacted the Reading Barrier-Free Act in 2019 and noted in the 2023 Basic Plan for the Promotion of Education that the concept "Diversity, Equity and Inclusion is also becoming more important" (MEXT, 2023, p. 23). While these initiatives are a definite step in the right direction and look great on paper, the reality on the ground is another story. Sadly, a significant number of neurodiverse ELLs in Japan are being left behind because many teachers never received adequate training on how they can cultivate a more accessible and inclusive learning environment (Young, 2024b).

Conceptual Baggage

This article highlights five pedagogical strategies that I have integrated into my professional practice to help students with SpLDs. It draws on my frontline teaching experiences with neurodiverse Japanese

university ELLs and special needs students in the Canadian public school system. I critically reflect on the successes and missteps that I have made along the way in my ongoing quest to establish a barrier-free compassionate learning environment. Before venturing on, it is essential that I unveil my own conceptual baggage and other elements that have filtered into this paper. First, the words you are reading come from the keyboard of a person who has struggled with dyslexia his entire life. While my condition was not on the extreme end of the continuum like John Corcoran, a veteran teacher who was unable to read or write, it was nevertheless something that generated a significant amount of frustration and embarrassment. For example, I failed high school two years in a row and have never finished a test on time. Like many other dyslexics, I became quite skilled at camouflaging my struggles and working around certain obstacles. Next, I am the proud father of three children, two of whom have SpLDs (i.e., ASD and ADHD/dyslexia). Lastly, the ideas of Brazilian educator and critical theorist Paulo Freire (1921-1997) have acted as a bright beacon of light throughout my entire teaching career. It is beyond the scope of this paper to go into great depth on how Freire's (1996) seminal book *Pedagogy of the Oppressed*[1] influenced my educational philosophy and classroom practices. However, it is worth noting that the Freirean notions of "education as the practice of freedom" and the "problem-posing method" can not only assist teachers in cultivating a neuro-strengths-based perspective, but also help neurodiverse students alleviate the feelings of isolation and dissatisfaction that they often experience learning a foreign language. That concludes my brief autobiographical detour. In the section that follows, I discuss how a neurodiversity-affirming approach can enable EIL educators to foster a more accessible and inclusive learning environment.

photograph by Life On White from Canva

Universal Design for Learning (UDL) Framework: Addressing Learner Variability

Everyone has attended tediously boring lectures where the speakers adopted the infamous "sage on the stage" persona and overwhelmed audience members with a plethora of facts and figures plastered on text-heavy MS PowerPoint slides. Unfortunately, this style of "teaching" (read: pontificating) is commonplace on many Japanese university campuses, even though instructors are encouraged to use active learning methodologies. Not surprisingly, the teacher-centered "death by PowerPoint" phenomenon does a tremendous disservice to twenty-first century ELLs, especially students with SpLDs. Nowadays, it is crucial that educators stop relying on excessively wordy and poorly formatted presentation slides and printed/digital handouts. Moreover, teachers must integrate multiple delivery formats (e.g., multimodal media) into EIL courses and provide students with plenty of collaborative learning opportunities. One of the most effective ways that educators can help bridge the learning gulf that exists in their classrooms is by incorporating the Universal Design for Learning (UDL) approach into their pedagogical practice. The Center for Applied Special Technology (CAST) developed a practical framework to "improve and optimize teaching and learning for all people based on scientific insights into how humans learn" (CAST, 2024, para. 1). The UDL Guidelines (version 3.0) promote learner agency via these three categories: (a) multiple means of engagement; (b) multiple means of representation; and (c) multiple means of action and expression (CAST, 2024). According to Novak (2022), the UDL approach can eliminate barriers as well as support the academic achievement of both neurotypical and neurodiverse students by providing them with the necessary tools to access learning experiences. Whenever I create English language teaching (ELT) materials, I am cognizant of the

photograph by Aldo Murillo from Getty Images

UDL framework, alongside other important design principles (e.g., simplicity, usage of high-resolution images) which are based on Reynolds' (2019) book *Presentation Zen: Simple Ideas on Presentation Design and Delivery*. Likewise, I utilize the Dyslexia Style Guide (British Dyslexia Association, 2023) and Burke's (2020) suggestions when I create print/digital handouts for my classes. More specifically, I use sans serif fonts (e.g., Arial), larger font sizes, adequate spacing, short simple sentences, and helpful headings in my instructional resources.

Provide Clear Instructions

Teachers can enhance neurodiverse students' wellbeing and learning outcomes by providing them with clear and explicit instructions (Ellis et al., 2023). In the vignette that follows I highlight how a neurodiverse student helped me improve the overall quality of my lesson materials and in-class directions. Naoki (pseudonym), who was in five courses that I taught, appeared to be comfortable identifying as neurodivergent (i.e., ASD). In addition to disclosing his condition to the Student Affairs Department, he also mentioned it to several classmates during various collaborative learning activities. Initially, I was a little surprised at his openness because of my own dyslexic camouflaging experiences, coupled with the fact that many neurodiverse higher education students are hesitant to disclose their condition(s) out of fear of being socially ostracized (Accardo et al., 2024). Before

...many neurodiverse higher education students are hesitant to disclose their conditions out of fear of being socially ostracized.

each class, I try to upload the instructional materials (i.e., video links, handouts, slides) to my university's learning management system (LMS) at least one week in advance in order to make the upcoming lesson easier to follow. Since very few students had ever contacted me about my teaching materials, I assumed that they were largely effective and error-free. Of course, this perspective sometimes changed after I critically reflected on the success of a lesson, especially when one of the in-class learning tasks worked like the dreaded lead balloon. When I first started teaching Naoki, I quickly realized that some of the instructions on my handouts were a tad too ambiguous. After meticulously scrutinizing the lesson contents, Naoki would frequently drop by my office a few days before each class to get some clarification. On several occasions, I ended up making minor revisions to my teaching materials so that they would be more explicit. The updated handouts/slides were then re-uploaded to the LMS. Similarly, he would ask thoughtful questions during or after class which usually added clarity to a learning activity. In essence, Naoki's critical feedback helped me to give clearer instructions and create ELT materials with a more discerning eye. I've also found that integrating exemplary student work (e.g., poster, e-portfolio) and "how to" videos

made with the QuickTime Player or screen recording software (e.g., Camtasia) can lead to deeper learning for neurodiverse ELLs.

Be flexible and "remix" instructional materials

Elllis et al. (2023) claimed that it is important to establish a "positive, caring environment, where students feel the teacher will listen to them actively and without prejudice" (p. 112). One of the best ways for educators to adhere to this advice is to be flexible and make accommodations for ELLs with SpLDs. Mio (pseudonym) would get visibly frustrated during any mingling activities in an exceptionally large (note: 84 students) communicative English course that I taught. The first time I witnessed Mio's discomfort, I immediately thought about my oldest son's emotional reaction when he is overstimulated and some of his coping mechanisms. Thus, I encouraged Mio to wear noise-cancelling headphones if an in-class activity was too noisy and leave the classroom for a short time-out if she needed to recharge. Mio also preferred to work alone and complete her lesson tasks on a tablet instead of a worksheet. Unlike several of her neurotypical classmates, Mio did not use her digital device during English lessons to surreptitiously check social media sites. When it was time for the class to do a poster presentation, Mio had a significant amount of trepidation, so I allowed her to complete the assignment after class in order to reduce the adverse impact of auditory and social stimuli. My experiences working with Mio echoed Kormos' (2017) contention that students can become successful foreign language learners with adequate support in inclusive classrooms.

Another accommodation that teachers can make which will help students with SpLDs learn more effectively is to "remix" different types of paper-based and digital ELT materials. According to Knobel and Lankshear (2008), remix is the process of combining and reformulating cultural artifacts "into new kinds of creative blends" (p. 22). Throughout Japan, many EIL university instructors are required to use commercially produced textbooks and digital

photograph by Dragos Condrea from Getty Images

resources in coordinated courses. Several critics (e.g., Appleby, 2018) have argued that many global publishing companies strategically sidestep sensitive topics in their quest to increase sales, even though they have a moral responsibility to design ELT resources that are inclusive and respectful of the different identities that can be found within a typical EIL classroom. On a similar critical note, I have been forced to use textbooks in a number of EIL courses which were culturally inappropriate, text-heavy, and lacked appropriate images. Whenever possible, I would remix course-book materials and integrate supplementary learning activities into lessons which were better suited to the individual needs of my students. Below is how I remixed an informative speech project from LeBeau's (2020) *Speaking of Speech: Premium Edition* student book in a Presentation Skills course. Incidentally, I consider this textbook to be a good resource because it contains engaging visuals, practical activities, and ELLs can access audio-visual content on the National Geographic Learning website. The Student Affairs Department informed me at the beginning of the semester that three neurodivergent ELLs were enrolled in the Presentation Skills course. However, I strongly suspected that the actual number was significantly higher. Therefore, I decided to remix the class-fronted PowerPoint informative speech that is suggested in the *Speaking of Speech: Premium Edition* textbook to a more interactive carousel-style poster presentation format. In essence, I felt that this strategy would reduce the students' public speaking anxiety levels and increase their cumulative communication time. Moreover, ELLs with SpLDs would not be required to read much text as the posters were predominantly photos. Figure 1 shows an exemplary informative speech poster on Venice that was created

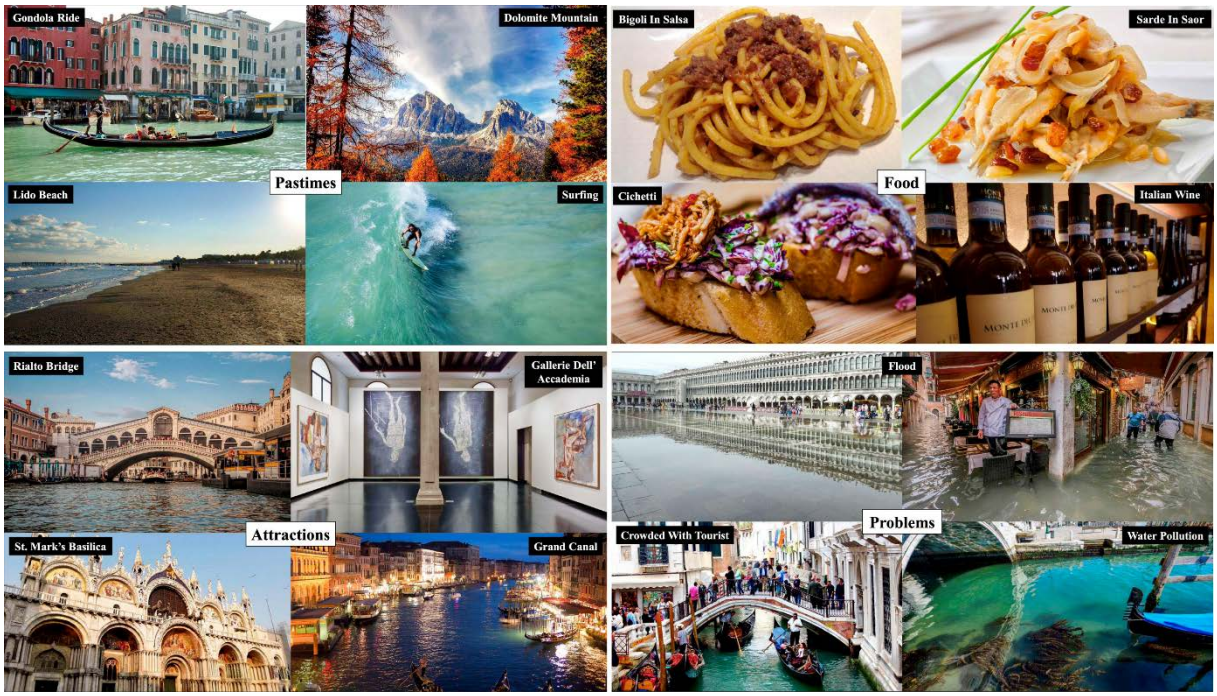


Figure 1. *Exemplary informative speech poster created by two neurodiverse students*

by two neurodiverse students. The informative speech activity that I remixed required partners to research a city of their choice, select four areas that piqued their interest (e.g., pastimes, food, attractions, and problems), find four high-resolution photos for each quadrant, and make several short interactive poster presentations (Figure 1). This collaborative assignment raised awareness about the value of the visual message, enhanced students' public speak- ing skills, scaffolded learning, and helped prepare them to do a class-fronted PechaKucha presentation at the end of the term. I've also discovered that utilizing student-generated teaching materials (e.g., podcasts) is an effective remixing strategy that can harness neurodiverse ELLs' unique strengths.

Student voice and choice, is especially important for neurodiverse ELLs.

USE PROJECT-BASED LEARNING

Integrating a project-based learning (PBL) approach into an EIL course is another way that instructors can celebrate neurodiverse students' special skill sets (Yphantides, 2021). The Buck Institute for Education (2024) define PBL as a "teaching method in which students learn actively by engaging in real-world and personally meaningful projects" (para. 1). Boss and Larmer (2018) claim that "deep and meaningful learning" can occur if the following design elements are integrated into a PBL project:

1. Challenging problem or question;
2. Sustained inquiry;
3. Authenticity;
4. Student voice and choice;
5. Reflection.
6. Critique and revision;
7. Public product. (pp. 2-3)

The fourth element, student voice and choice, is especially important for neurodiverse ELLs. Several studies (e.g., Thomas, 2017) and anecdotal evidence from frontline teachers have demonstrated that a technology-mediated PBL approach can foster students' creativity, critical thinking, communicative competencies, digital literacy, and collaborative learning skills. In the next paragraph, I discuss some of my early missteps utilizing technology-enhanced PBL in a communicative English course and several of the lessons that I have learned over the last decade.

Young and Burke (2024) created an excellent resource for EIL educators entitled "Basic Inclusive Principles and Practices for Inclusive English Language Teaching," which includes 11 guiding tenets, best practices, and the rationale behind each one. Principle 10 encourages teachers to develop students' information and communication technologies (ICT) skills and provide them with "explicit instruction as needed." This is definitely sound advice and something I overlooked the very first time I incorporated a digital storytelling (DST) project into a communicative English course. A typical digital story, which is

around five-minutes in length and created with video editing software or Web 2.0 tools, combines various elements (e.g., video clips, images, narrative, music, transition effects) into a cohesive digital narrative. I incorrectly assumed that since most Japanese university ELLs are smartphone savants they would not get tangled up in problematic ICT issues. Furthermore, critics could rightly say that I put the "technology before the pedagogy" and had a "technological deterministic mindset," so it is no surprise that my initial DST foray was an unmitigated flop. In the ten years since this debacle, I have learned a great deal and completely revamped how I use technology-mediated projects in my class. Table 1 provides ten recommendations that teachers can use to make a DST more accessible to neurodiverse students.

At the conclusion of every DST project, my class has a film festival because it provides neurodiverse (and neurotypical) ELLs with an opportunity to showcase their creative talents. The students have snacks and drinks as they watch their classmates' collaborative multimodal videos in a relaxed atmosphere. After the last video has been screened, the ELLs mingle around the classroom and have informal chats with other movie makers. I refrain from doing any grading during this viewing session, because it would be an unnecessary distraction and I want the students to feel comfortable sharing their digital narratives. There are a myriad of moving parts in a typical DST initiative, such as problematic ICT issues, digital divide realities, irresponsible teammates (e.g., social loafers), intragroup friction, and curricular

Table 1.

Making a DST project accessible for all students: Helpful Recommendations

Recommendations:
1. Don't put the technology before the pedagogy.
2. Embrace the 'controlled chaos' that an active learning DST project can create.
3. Be flexible and adaptable. Let students choose their own topics.
4. Provide ongoing feedback.
5. Include a self- and peer-evaluation component.
6. Highlight exemplary student work (e.g., videos, scripts) and grading rubrics (e.g., instructor, self-evaluation, peer-evaluation) at the beginning of a DST project.
7. Provide students with a checklist which breaks the DST project down into more manageable parts.
8. Establish mini-workshops or peer tutorials (e.g., iMovie video editing software) that are spearheaded by tech savvy students.
9. Provide lots of time for groups to meet in class and don't set a tight deadline.
10. Have a class film festival to share and celebrate the students' multimodal video creations.

objectives that EIL educators must take into careful consideration (Toland, 2023). Thus, it is crucial that teachers be attuned to the undercurrents in their classes and engage in ongoing critical self-reflection so that they can make the necessary adjustments if a technology-mediated project happens to go off the rails.

Consider the Classroom Environment

EIL educators must be cognizant of the education infrastructure and willing to make accomodations so that learning is accessible and inclusive for everyone. More specifically, teachers need to consider if their assigned classroom has adequate natural and artificial lighting, proper ventilation, ergonomically designed desks and chairs, reliable Wi-Fi connectivity, and a manually adjustable thermostat to maintain an optimal room temperature for studying. According to Dickter and Burk (2021), better physical learning environments can help neurodiverse students "reduce anxiety, mitigate executive function deficits caused by over stimulation, and improve focus" (p. 84). My own classroom observations, coupled with anecdotal reports from colleagues, support this claim. Before the start of each academic year, I specifically request a classroom with moveable desks, so that I can reconfigure the learning space into one where the students can walk around the room unobstructed and actively interact with their classmates. I usually arrive at my classroom 15 minutes early so that I can move 35 (or more) desks into eight learning pods. The extra desks, which are placed at the back of the room, are used to store the students' excess accouterments (i.e., bags, umbrellas, etc.). The reconfiguration process from the traditional teacher-centered classroom to a collaborative learning environment frees up space for kinetic movement and sends out the subliminal message that the instructor is not the "sage on the stage." It is also important that teachers are mindful of various sounds

photograph by Ferrantraite from Getty Images

inside and outside the classroom. For example, this past semester I changed one of my classrooms after the first week because it was in front of a popular gathering spot for students before their classes. In essence, I felt that the external noise level in conjunction with a loud ceiling fan would be distracting for students with SpLDs.

Conclusion

Most educators would agree that teaching English in the twenty-first century is a complex and multifaceted endeavor. Nowadays, university EIL instructors must navigate a myriad of contemporary challenges such as the integration of new digital pedagogical practices, the ethical usage of emerging technologies (e.g., ChatGPT), and maintaining student engagement in a social media-saturated world. In addition, teachers need to regularly don the cloak of advocacy to confront top-down directives from administrative overlords that are not conducive to their students' learning needs and social-emotional wellbeing. Educators must also be more proactive on the cognitive diversity front and create a more welcoming and inclusive environment for neurodivergent ELLs. This article highlighted five pedagogical strategies that teachers can utilize to support neurodiverse students in a higher education context. It goes without saying that the ideas discussed in this paper are but a drop in the proverbial ocean as there are numerous other ways that instructors can establish a neurodiversity-affirming classroom. There is a definite need for faculty professional development initiatives to emphasize the UDL framework and other inclusive approaches that can make learning more accessible for neurodiverse students. Therefore, I concur with Černickaja and Sokolová's (2024) claim that universities should provide faculty members with practical training sessions and not just the passive transfer of basic information about neurodivergent conditions. Likewise, EIL teachers must partake in a variety of different self-directed and collaborative learning opportunities to expand their awareness of students with SpLDs and enhance their pedagogical practices.

[1] *Pedagogy of the Oppressed* was first published in Portuguese in 1968. It was translated into English in 1970.

SKIP REFERENCES AND GO TO NEXT ARTICLE

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Universal Design for Learning and Introverts in a Language Classroom

Written by
Heather McCulloch

Universal Design for Learning (UDL) is a framework that emphasizes the importance of creating flexible learning environments to accommodate the diverse needs of all students. This approach is particularly beneficial for introverted students in language classrooms, where traditional methods often cater to extroverted learners who thrive in group activities and oral presentations. The implementation of UDL principles allows introverted students to showcase what they have to offer.

Understanding UDL and its Relevance to Introverts

UDL has three core principles: providing multiple means of (1) representation, (2) action and expression, and (3) engagement (CAST, 2018). These principles are designed to remove barriers to learning by offering varied ways for students to access information, demonstrate what they know, and stay motivated.

Multiple Means of Representation

Representation is the principle that focuses on instruction and what students are learning in class. Introverted students

often prefer written or visual information over oral presentations. By incorporating texts, videos, and infographics, teachers can cater to these preferences, making content more accessible (Rose & Meyer, 2002). Introverted students, who may need more time than their classmates to process information internally, benefit from having access to diverse formats that allow them to engage with the material at their own pace.

Multiple Means of Action and Expression

Action and expression refers to the evaluation portion of a class. Introverts may excel in written assignments or projects that allow for individual reflection rather than spontaneous verbal responses. Allowing students to choose how they demonstrate their knowledge supports diverse learning styles (Novak, 2019). For example, instead of a traditional oral presentation, students could create a video project or write an essay, providing them with an opportunity to showcase their understanding in a way that suits their strengths.

Multiple Means of Engagement

Engagement, also referred to as motivation, can be increased by offering choices in activities and fostering a supportive and inclusive classroom environment. For introverts, this might mean providing opportunities for self-paced learning or small group discussions instead of whole-class debates (Meyer et al., 2014). Tailoring participation strategies to suit introverted learners can significantly enhance their motivation and participation.

Challenges Faced by Introverts in EFL Classrooms

Language classrooms often emphasize speaking and listening skills, which can be daunting for introverted students who may feel overwhelmed by constant interaction. According to Cain (2012), introverts tend to process information internally and may require more time to formulate responses. Traditional language teaching methods prioritize quick verbal exchanges and can hinder their participation and confidence. Introverted students might also experience heightened anxiety in such environments, which can further slow down their language acquisition and overall performance.

illustrations adapted from Drawlab19

Moreover, the stress of performing in a foreign language can exacerbate feelings of anxiety for introverted students. Studies have shown that language anxiety is a significant barrier to learning, affecting not only speaking skills but also overall language acquisition (Horwitz, et al.,1986). The pressure to perform verbally in front of classmates can be particularly challenging for introverts, leading to reduced participation and engagement in classroom activities.

Applying UDL principles to support introverted learners

Flexible assessment methods

Instead of solely relying on oral exams or presentations, teachers can offer options such as written reports, video projects, or recorded presentations. This allows introverted students to demonstrate their language skills in a format that demonstrates their strengths (Novak, 2019). For example, a recorded presentation can provide introverted students with the time and space to explain their thoughts clearly and confidently, without the immediate pressure of an audience.

Varied participation formats

Encouraging written discussions through online forums or classroom blogs can provide introverts with the time they need to effectively communicate their thoughts. Incorporating pair work or small-group activities can create a less intimidating environment for practicing speaking skills (CAST, 2018). These strategies not only accommodate the preferences of introverted students but also facilitate a more inclusive classroom environment where all students feel valued and supported.

Safe and inclusive environment

Building a classroom culture that values all types of participation is crucial. Teachers can set clear expectations that all contributions are valued, whether students speak up in class or share their ideas in writing. This can help reduce the pressure on introverted students to conform to extroverted norms (Meyer et al., 2014). By promoting a culture of respect and understanding, educators can create a more welcoming environment where introverted students feel comfortable expressing themselves.

Self-paced learning opportunities

Offering resources for self-study, such as language apps or reading materials, allows introverted students to engage with the language at their own pace. This can build their confidence and competence in a low-stress setting (Cain, 2012). Self-paced learning resources enable introverted students to take control of their learning process, allowing them to revisit challenging concepts and practice skills until they feel confident.

Reflective practices

Incorporating reflective activities, such as journals or checklists, can help introverted students process their learning experiences and identify their progress. This practice supports metacognition and helps students take ownership of their learning journey (Novak, 2019). Reflective practices encourage students to think critically about their learning while having a better understanding of their strengths and weaknesses.

Technology's role in supporting UDL and introverts

Technology can play an important role in implementing UDL principles and supporting introverted learners in language classrooms. Digital tools and platforms offer a variety of ways to present information, motivate students, and assess their understanding.

Digital content delivery

Online resources, such as educational videos and digital texts, provide diverse means of representation that can cater to different learning preferences. These tools allow introverted students to access information in formats that suit their needs and at their own pace (CAST, 2018).

Online communication platforms

Platforms like discussion forums, blogs, and social media can facilitate written communication, providing introverted students with alternative ways to participate in class discussions without having to speak up in class. These tools allow students to contribute their ideas thoughtfully and without the immediate pressure of speaking in front of peers (Novak, 2019).

Multimedia projects

Tools for creating multimedia projects, such as video editing software and presentation apps, allow students to express their understanding creatively and in ways that demonstrate their strengths. These projects can be beneficial for introverted students, by allowing them to highlight their knowledge without the stress of live presentations (Meyer et al., 2014).

The application of UDL principles in language classrooms offers a promising approach to support introverted students. Introverts experience the challenges of navigating educational environments that were not always designed with their needs in mind. Through the principles of UDL we can transform these challenges into opportunities for growth, learning, and belonging, because that is the very heart of UDL.

Heather McCulloch loves spicy food, cleaning and Hello Kitty (not necessarily in that order). Though shy, she boldly embraces pink and red as her favorite colors. When not reading or daydreaming, she is proudly reorganizing her closets - again!

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Building My ADHD Toolbox: A Review of How to ADHD

Written by
Julia Daley

When my copy of Jessica McCabe's *How to ADHD: An Insider's Guide to Working with Your Brain (Not Against It)* arrived, I was so excited. I sat at my desk, opened it up to the first page, and didn't move from my seat until I'd finished reading the whole book. That's the funny thing with hyperfocus: hours had passed me by without my noticing it at all. Honestly, I can't really say that I read the book the first time I opened it, so much as I *devoured* it. It was as if, for the first time, there was something that could help fill the gnawing hunger inside of me that I'd never even realized I'd been enduring for so long.

I've been a fan of McCabe's YouTube Channel—How to ADHD for a while now, and her friendly, relatable voice translates clearly into text. Sometimes I felt I could hear her reading aloud in my head. The book is a compelling mixture of anecdote, science, and practical tips that is structured in an easy-to-digest way. I find myself regularly pulling it off my bookshelf to thumb through again and again and again, all so that I can continue building upon and refining my ADHD toolbox.

The ADHD toolbox

In each chapter of *How to ADHD*, after McCabe goes over a particular aspect of the ADHD experience (like hyperfocus, executive function, motivation, memory, etc.), there is always a section devoted to introducing tools that readers can try and add to their toolbox. Each chapter typically features a few different tools with different suggestions for how to implement them into your life.

As anyone who has put together a physical toolbox can tell you, you don't want to just buy a bunch of fancy tools and throw them into the toolbox without first knowing: a) what works best for you and b) what you'll actually want to use them for. McCabe advises readers to begin gradually (pp. xii ~ xiii), with just a few tools, and to reflect on not only why you want to try using a particular ADHD tool, but also how long you plan to try it out for (with the understanding that it can take time to get used to an unfamiliar tool and apply it to your own life). With patience, though, the toolbox will slowly fill with tried-and-true strategies that can be used to better support the ADHD brain.

What's in my toolbox?

So kind of you to ask! It's still a work in progress, but my toolbox has come a long way from the maladaptive strategies I'd been haphazardly deploying prior to receiving my diagnosis. Here's a few of my favorite tools, in no particular order, that I learned how to use from *How to ADHD*:

Planning out the steps

Before tackling a task, it helps me if I visualize in advance what each step will be (p. 60). Taking the time to plan out what I'll do first, then second, then third, and so on is surprisingly helpful. For one, it breaks projects down into smaller, more manageable steps. Also, it helps me make sure I'm prepared and have everything on hand that I need to complete the project with as little friction as possible—there's nothing worse than being interrupted part-way through with the horrifying realization that I'm missing some key component that I need. I've long since learned about myself that an interrupted project often becomes an unfinished project. However, if I know how I will get from A to B and the things I need to reach my goal, I'm much more likely to not only begin the task but also successfully finish it.

Compensating for my working memory

My working memory isn't the biggest out there, and it gets overwhelmed easily. I've been learning to reduce my reliance on it and find ways to compensate for its weaknesses (pp. 203 ~ 205). One thing that helps is jotting down key points in a discussion, especially the things I need to do later, so that I can return to my notes to guide my work later. Such a simple thing to do, yet it's hard to remember to take notes in the middle of things, so I'm developing my "jot this down" reflex and getting more consistent at it. On a similar note, I've been trying to make better checklists, ones that break down projects into their smaller steps so I can track my progress as I complete things. Of course, that does mean I need to remember to check things off my checklists as I finish them… which I don't always do. Still, the more of a habit it becomes, the more reliable I become at using my checklists properly.

Chasing rabbits

I like to think of my life story as a series of rabbit holes I've dove into, scattered about a field, with no particular rhyme or reason connecting them together. It takes a lot of self-discipline and mental effort to resist the temptation to chase after another rabbit that runs by me. Hard experience has taught me that if I follow the rabbit to the bottom of its hole, I will have lost hours and hours and hours of time that could have been spent more productively. It takes a lot of mental effort to self-regulate and avoid exploring new rabbit holes, and that restraint takes its own mental toll on me. It turns out that chasing rabbits is what my brain does to relax, and sometimes I need to let it loose and run around as far and as deep as it wants (p. 69).

Then, I feel more refreshed. I've been working on building time into my life and routines where I can just let my mind wander wherever it wants to go.

Making honey

I really liked McCabe's bumblebee analogy (p. 182). She writes that we should personify our brains as little bumblebees, busily buzzing around a garden. A more neurotypical brain might have an organized garden, with dedicated sections featuring different arrangements of flowers; my garden, on the other hand, is an eclectic jumble of all sorts of plants, some of which don't really look like flowers at all. I carry the pollen (or skills) from those flowers with me, and, with them, I can make some delicious honey. Instead of cursing my brain for wandering around everywhere, I should instead appreciate that all these different things I've learned, hobbies I've enjoyed, and skills I've developed can complement each other in surprising ways. I have to remind myself that none of the flowers in my life were a waste of my time, and that the honey I make is unique to my life's experiences.

Opening up

Slowly, ever so slowly, I've been opening up more about how my brain is different and the challenges that it brings to my life. It's a hard thing to do, as on the one hand I don't want anyone to treat me differently—especially as though I'm less competent, but on the other hand I do seek a bit of grace and understanding for when my brain just refuses to cooperate and do what I want it to do. I've had decades of experience of writing a self-narrative of being lazy and forgetful; I've only had three years to start untangling that mess and recognizing the intertwined autism and ADHD (or AuDHD) at the core of so much of my self-hatred. It doesn't help that when I do share about my brain's struggles, I'm often met with the reaction: "You don't look like you have _____." I guess that's why it's important to share my story (p. 387), to help people become more aware of what ADHD can look like across a wider range of people than it's usually stereotyped to appear as.

Just keep swimming

There's an analogy that's often used in the ADHD community, that we're all kind of like ducks, looking like we're calm and put-together on the surface, but underneath the water we're actually paddling frantically, trying to keep up with everyone else. That's basically my life. Fortunately, I'm no longer swimming around in the dark: with the tips and tricks from *How to ADHD*, I've been learning how to adapt my life to my brain. I've still got more tools to add to the toolbox, but in the meantime, I am getting better at learning how to swim with the brain that I have, so I don't have to spend so much effort paddling to get to where I want to go.

Julia Daley is a senior lecturer and Assessment Coordinator at Hiroshima Bunkyo University. She received her Masters in TESOL from Northern Arizona University, and she's certified to teach Secondary English in Arizona. She's mainly taught writing and EFL in high schools and universities in the USA and Japan. When out in nature, Julia's brain has a knack for spotting the smallest of movements made by the littlest of creatures.

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Parents Can Play a Critical Role for Neuro-divergent Students Transitioning to College

Written by
Scott Bellman
Eric H. Chudler

The last decade has seen an increasing shift away from deficit-based models of supporting students with disabilities. Such models focus on the weaknesses of individual students in an effort to correct the perceived weaknesses, with little attention paid to teach students how to identify and capitalize on their unique strengths. Recently, many educators have adopted more balanced approaches, including strength-based models that incorporate a student-centered approach to teaching that helps these students understand their strengths (Parsakia et al., 2022). Strength-based models highlight the importance of teaching students how to improve strong areas and capitalize on them in learning environments.

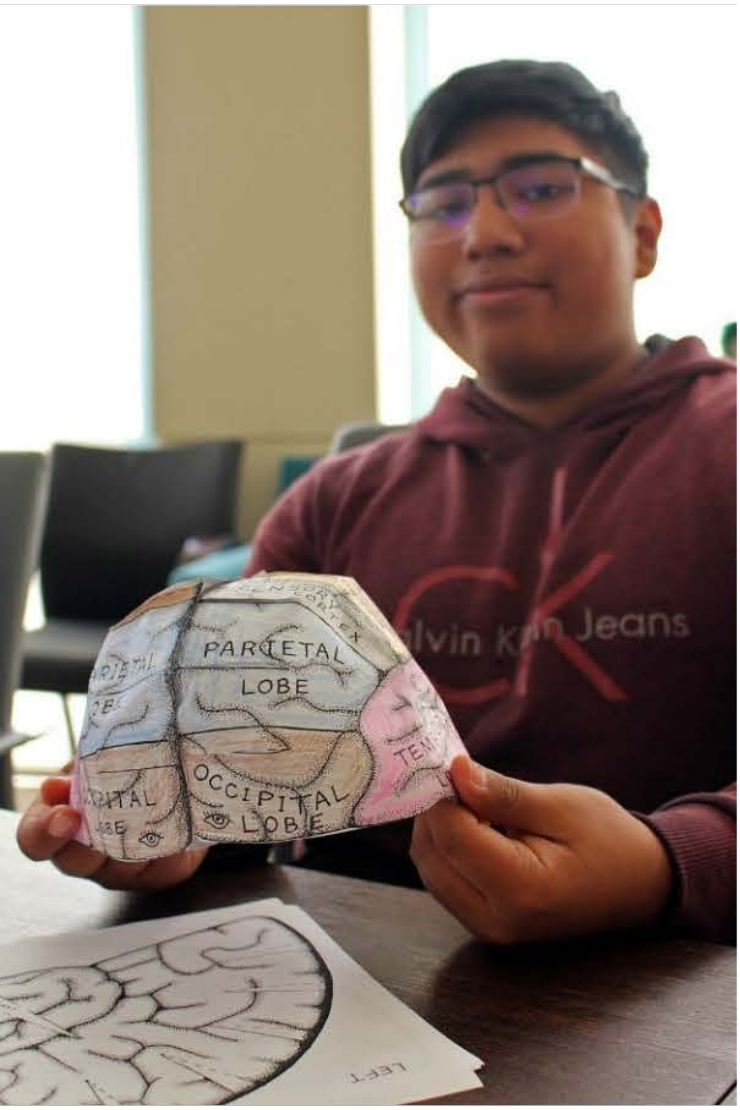
In this article we share observations, *particularly observations of parents about the strengths of their children*, from a project at the University of Washington (UW) that aims to help neurodiverse learners prepare for and succeed in college. The project, Neuroscience for Neurodiverse Learners (NNL), provides hands-on experiences in neuroscience, networking opportunities, and resources to high school and early post-secondary students who identify as "neurodiverse" learners: those with academic challenges related to

conditions such as dyspraxia, dyslexia, attention deficit hyperactivity disorder, dyscalculia, autism spectrum disorder, and Tourette syndrome. The program, a collaboration between the UW's Disabilities, Opportunities, Internetworking, and Technology (DO-IT) Center and the Center for Neurotechnology (CNT), disseminates findings to teachers of courses that are related to neuroscience and, more broadly, science, technology, engineering, and mathematics (STEM) courses. The goal of NNL is to enhance student interest in STEM and provide students with the skills to pursue STEM fields successfully, as well as empower educators to serve these students more effectively.

Each summer, Neuroscience for Neurodiverse Learners students participate in a 10-day summer camp experience which includes several days on the University of Washington campus at the Center for Neurotechnology. The CNT's mission is to "develop innovative neural devices and methods for directing engineered neuroplasticity in the brain and spinal cord, which will improve sensory and motor function for people with spinal cord injury, stroke and other neurological disorders." Engineered neuroplasticity is a new form of rehabilitation that uses engineered devices to restore lost or injured connections in the brain, spinal cord, and other areas of the nervous system.

These neurodiverse students learn about college preparation, leadership, advocacy, and the various STEM disciplines that contribute to the field of neuroscience. They explore how the human brain functions, and the ethical issues that relate to rapidly

An NNL student fills out a worksheet to identify different types of brains.



An NNL student displays his creation of a “brain hat,” used to help learn the different areas of the

emerging technology that can impact individuals with disabilities. Students work on social skills and learn scientific communication skills. The summer experience is supplemented with on-campus and online activities delivered during the school year.

When engaging students during program activities, project staff noted that all students in the program were able to identify at least one of their strengths. Students often identified strengths they believed were related to their neurodivergent characteristics. In other words, while their disability may present certain challenges in learning environments, students often believed that certain strengths were the result of their lived experience related to their neurodivergent characteristics.

The summer program includes a “Parents Night” where program staff and mentors meet with parents of students attending camp. During the session, resources are shared, questions are answered, and parents have a chance to build their network of support. During the session, parents share thoughts about the strengths of their student. Staff observed that parents of neurodivergent students in the program often identified a higher number of strengths than the students themselves, could more readily articulate the strengths through examples, and could describe them in more detail. Over three summers, 29 parents of 26 students articulated various strengths they believed were evident in their children.

The most common reported strength mentioned by parents was the ability of their

child to *embrace online learning* in the face of the COVID-19 pandemic, especially compared to their neurotypical peers. Parents shared that online environments offer fewer distractions as compared to on-site classrooms, and that their child had more control over their experience. For example, they could turn off their camera if they needed space as part of a disability-related accommodation. Parents shared that their child could participate in different modalities when they were online (e.g., speaking, using the chat function, or using "reactions" such as raising a virtual hand or voting with a virtual check mark). They noted that students could control their immediate environment, such as the items on their desk and walls, and that for some students, this predictable and consistent environment significantly reduced anxiety and reduced the need for masking (the practice of concealing or suppressing aspects of one's neurodivergent traits or conditions), leaving more cognitive space for learning.

Parents noted that their students were skilled at asking thoughtful questions and embracing scientific curiosity. These qualities were also observed by instructors during Neuroscience for Neurodiverse Learners activities at summer camp and during the school year.

Another common strength noted by parents was their children's ability to engage in creative thinking and creative problem solving. One parent stated that their child is exceptionally skilled at "connecting the dots… pulling together seemingly disparate parts and finding connections not seen by others." Project staff noted a consistent theme of students having a unique perspective that lends itself to solving problems in unexpected ways, which is in line with employment trends in the technology sector, where some of the biggest names in technology are seeking to hire workers who identify as neurodivergent. There is an increasing belief in many science and engineering sectors that neurodivergent employees bring unique talent to teams.

Other themes included persistence and dedication to finishing projects, activities, or courses; strong skills for demonstrating empathy and kindness; skills related to memory and spatial memory; abilities related to music and the arts; honest and direct communication, commonly associated with students on the autism spectrum; a natural curiosity and the desire to ask questions; and strength in mathematics.

Project staff engaged with students and parents about college preparation, noting that the K-12 system is a great place for parents to provide input on students' Individual Education Plans, commonly known as "IEPs" (Elder et al., 2018). Ideally, IEPs are student driven. However, a case can be made for parental involvement, helping ensure that student strengths are incorporated into their child's K-12 learning plan. Practicing the concepts related to understanding and utilizing one's strengths can be critical for students preparing for college, where they will need to more

independently draw upon their unique strengths and talents.

When students' specific strengths are written into an IEP or communicated to their instructors, teachers have the opportunity to adjust their approach. Imagine that a teacher knows a student has a particular strength for asking thoughtful questions and embracing scientific curiosity. Instead of asking the student for an answer to a particular scientific question, the teacher could instead explore the student's understanding of the material by encouraging the student to generate questions a researcher might ask about the content. Similarly, a teacher who knows that a student has strengths related to empathy and kindness might choose to call on the student at a time when those skills could be helpful.

For example, to help explore a misunderstanding during a small group assignment.

We plan to further explore the idea of utilizing parent knowledge to help neurodiverse K-12 learners prepare for college. We believe there is merit in exploring which strengths are more commonly associated with different diagnostic criteria, the possible reasons for differences in parent-reported strengths versus student self-reports, and additional ways that parents can leverage their knowledge to help students and educators better understand and build upon students' unique areas of strength.

This work was funded by the National Science Foundation (Award#DRL-1948591). Dr. Rajesh Rao (UW) serves as Co-Principal Investigator on the project.

An NNL student with Education Director Dr. Eric Chudler.

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Barrier-Free Classrooms: The Road to Change and Ideas for Your Classes

Written by
Alexandra Burke

Editors' Note:
You might have noticed that the font and formatting in this article are a bit different. This is because the author requested a sans-serif font for their piece. While we initially considered using a more dyslexia-friendly font across all our issues, we ultimately chose Georgia, as it strikes a balance for many readers and works well across different platforms. For those who prefer other formats, our website offers a text-only version, which can be easily adapted using accessibility tools and plugins.

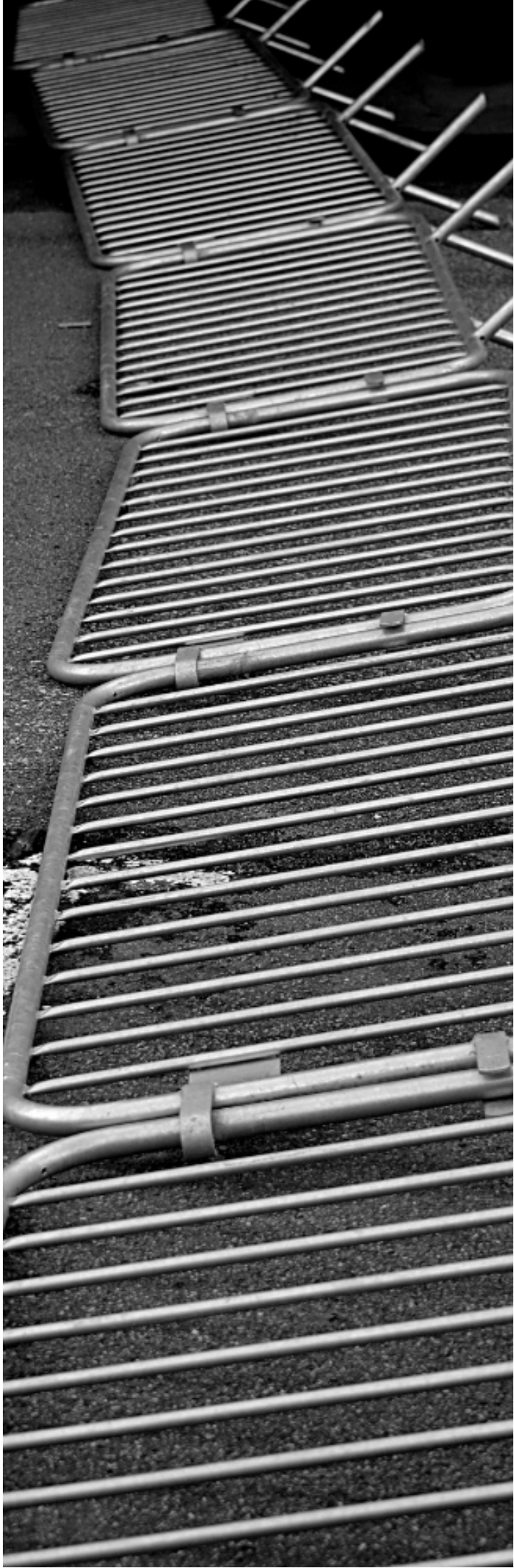
This is a story of massive educational change in Japan, which has the concept of equity firmly planted at its base and does have the potential to make learning barrier-free. In years to come, this process will become a planning case study in public administration, where it will be compared with policy change in other countries. When I last wrote on learning differences for the Think Tanks in May, 2019, language learning in Japan was in quite a different situation. At that time, I offered several recommendations of things that I felt were possible to help the learners and within the reach of most teachers. Within a month of that publication, the education sector was about to undergo a significant shift because of the introduction of the Barrier Free Reading Act of 2019. Like all major changes, its impact may take years to be truly visible. But this change did not take place in a vacuum and there is also a story of cultural change in the community within the Japan Association for Language Teaching (JALT) and how people are adapting to a new way of looking at their classes. If you find you have a learner with a declared disability in your class, I would like you to appreciate just how rare they are, being only 1.79% of all tertiary students in 2023 (JASSO, 2024).

There are many more undeclared learners with barriers. My goal, as someone who was one of these students, is that you do everything possible to create an environment that will keep them in the classroom. Why? Because as multiple studies have shown, the longer you are in schooling, the longer you will live: it's that simple (Balaj et al., 2024).

History and some numbers

On June 19, 2019, the Japanese Parliament ratified the "Act on Promotion of Improvement of the Reading Environment for the Visually Impaired," more commonly referred to at policy level as "Aiming for a Society Where Everyone Can Read—Individuals Can Choose the Form of Reading" and in everyday life called "The Barrier-Free Reading Act." It's a mouthful but important. One of the indicators of its commitment to the principles of this Act is that the government now uses accessible fonts for its own research publications and the nation's textbooks. What makes them easy to read is spacing, character height, and the width of individual strokes.

Currently, learners can also be officially recognised as having a specific learning difficulty that does not represent an intellectual difficulty. In 2022, observations by teachers of students in mainstream classes in public elementary and junior high schools showed that approximately 8.8% of students appeared to have a learning difficulty that was not attributable to



intellectual difficulty. In public high schools, this figure dropped to 2.2%.(MEXT, 2022), so there is a gap here that represents a barrier to entering public high school for this group. It is also an equity gap, as public high schools are partly free, whereas private highschools or training colleges are not. To attempt to enter public highschools, many families will have spent a considerable amount on extracurricular training.

...8.8% of students appeared to have a learning difficulty that was not attributable to intellectual difficulty.

With regard to higher education, in May 2023, the Japan Student Services Organisation's (JASSO) annual survey press release - Summary, (released August 9, 2024) reported there were a total of 3,247,212 learners at university, colleges and vocational colleges. Of this group, 1.79%, (58,141 - an increase of 8,469 on 2022) requested support for any kind of disability to educational institutions (JASSO, 2024). This number seems very low, but it is increasing each year, particularly since 2019 (start year of the changes to disability laws). Mining further down into the accompanying Report, of all these, students with developmental disorders (ADHD, Autism, the new category of Specific Learning Differences and combined status) is 11, 706 (up from 7006 in 2019). Finally inside that, students who asked for support for reading (often called dyslexia), writing (dysgraphia), and math (dyscalculia) number 309, up from 254 the previous year (JASSO Report, 2024).[1]

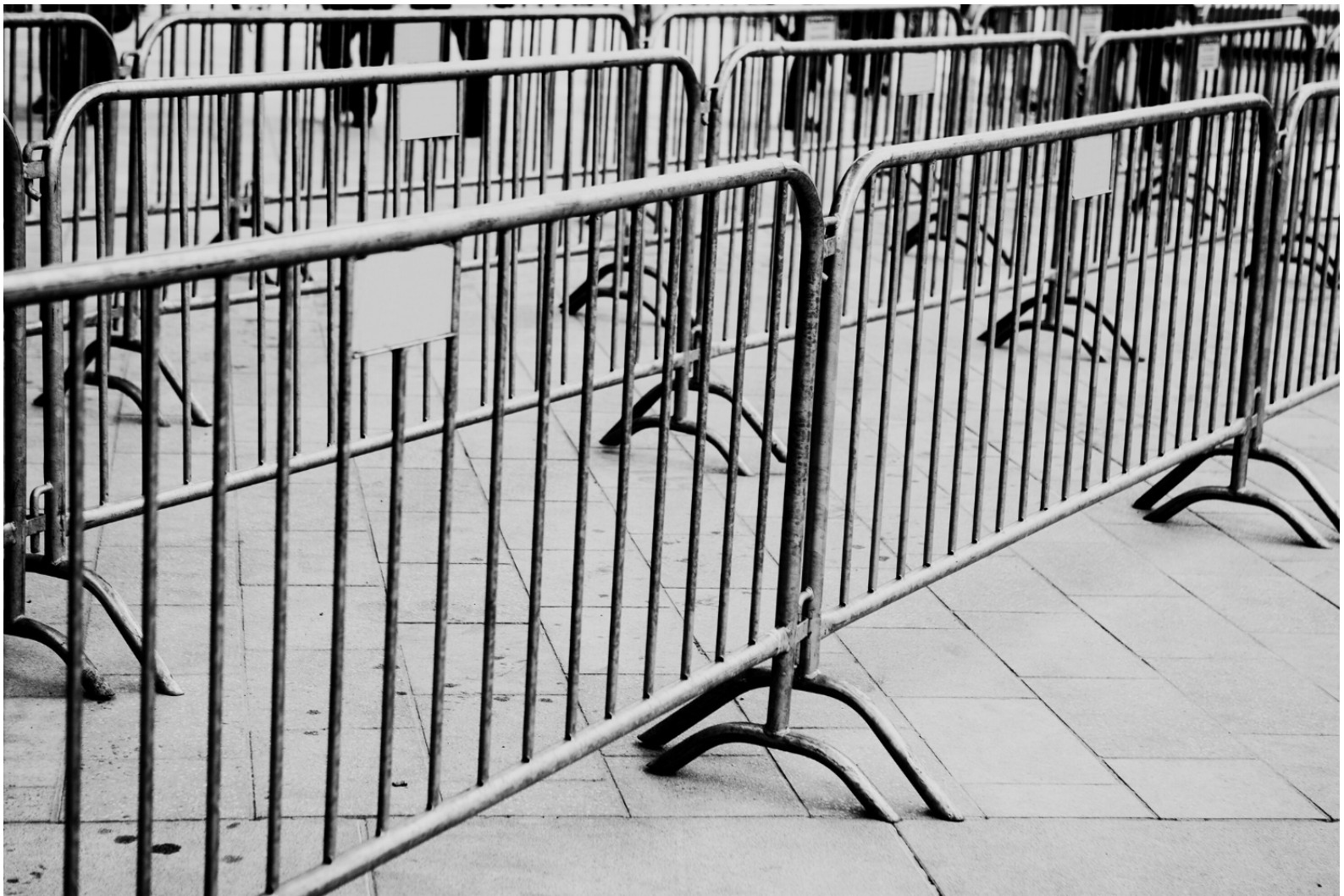
The bulk of the information on this is in Japanese and can be read on the Ministry for Education Website. If you are not a fluent reader of Japanese, you can take advantage of (imperfect) machine translation by right-clicking on the screen to translate in Chrome; open *reader* mode via the URL bar in Safari or on Edge, right click to open in Immersive Reader, then select the top right toolbar to open the dictionary where you can choose which language to translate it into by word or page.

[1] This is **why what teachers do in their classrooms to make learning inclusive is so important**. We know the minimum prevalence rate is 8.8% but the number willing to ask for help is **microscopic**. Be the teacher who removes barriers, because few people will document that they need support.

RIPPING DOWN THOSE BARRIERS TO EDUCATION AT LAST!

The enactment of the Barrier-Free Reading Act, (*dokusho barria furi hou*) which enshrined the right to read by ear, in addition to other senses, was the final step in plans formed nearly two decades earlier, to make school more accessible and to prevent people from becoming recluses. The tools for enactment of long-term hardware infrastructure planning were being unboxed. Training schedules were booked. Shiny new textbooks brimming with QR codes that took the reader to carefully curated audio or video, were being counted and sorted in schools. (I was lucky enough to have seen the prototype digital textbook demonstrated in a meeting at the Ministry of Education: it was very exciting). The new culture of Barrier-Free Reading would roll out across the country, to all, as part of the GIGA Initiative (Global Information Gateway for All) "1-student 1-device."

Then, media reports of the new coronavirus swept the world. Group training sessions, (always done face-to-face to allow people to reflect and problem solve together) were postponed, then cancelled, and we waited. The books stayed in their boxes. For the education sector, the timing could not have been worse. A comprehensive model, which had been designed to show students the linkages between subjects, between parts of their curriculum, right down to the lower years of elementary school, could not be implemented as planned.



Changes in the Landscape

As everyone hurried to find ways to deal with education in a model no one was ready for, unexpected things happened. Some people who hadn't previously come to class or participated, were re-engaging in education, while others were struggling. I heard these stories online and also in staff rooms. What was different? One of the great unexpected discoveries of the pandemic is that people with different brains might adapt to technology differently. And because people had time to notice their routines and to focus, we started to notice that more of the population may be on the attention deficit hyperactivity disorder (ADHD) scale than was previously thought.

Thankfully, Drs. Edward Hallowell and John Ratey also released their book ADHD 2.0 just in time, in January 2021. This book is a mine of useful information on the neurology of ADHD and strategies for classroom and lifestyle management.

Here, from their book, is a list of traits that resonate with people who have or may have ADHD (p.17-18).

Useful	Problematic
Naturally creative; ideas pop all the time like in a popcorn machine	Trouble organizing all the ideas and doing something productive with them
Confident; self-assured	Insecure; despite confident exterior, feels success was all done by smoke and mirrors

Community Responses

An online community grew up that became known as Online Teaching Japan (OTJ). Jose Domingo Cruz became the face of Zoom training for many language teachers. He and OTJ administrators and members created an environment where we could share practical skills to apply barrier-free learning principles, with rigorous debate, but remarkably without competition. During this period, I did a lot of online workshops and the impact was that a lot more people were talking in detail about their classes and whether they'd noticed certain students having difficulty with classwork. This significantly expanded the number of people wanting to talk about learning differences. Usually in a face-to-face situation, one or two people would want to stay after the workshop or presentation to ask questions or simply tell me that they or close relatives/students were neurodiverse and ask for more

photograph by Jonathan Borba from Pexels

resources. In the online workshops, though, people started talking openly about mental health and how to stay physically active, as many had lost their commute and the chance to take several thousand steps a day. At the same time, JALT created the Accessibility in Language Learning Special Interest Group in 2020, which has a newsletter specializing in applied accessibility. Thanks to the interest of intersecting committees across JALT, such as the Mind, Brain, and Education SIG, Diversity, Equity, and Inclusion Committee; the Director of Records; Technical Advisory and Support Committee; and Publicity Committee, accessibility is now part of the foundation and future of how members interact with JALT both on paper and online. As we returned to face-to-face events, it was a joy to see accessibility become a standard category of presentations, starting with the PanSIG conferences. Overall, accessibility done well will mean that you don't notice it, because barriers are gone, and customization options are visible and waiting.

In late 2020, I was invited by Dr. Melodie Cook to work with her and Dr. Davey Young as an editor of what became the book *Barrier-Free Instruction in Japan: Recommendations for Teachers at All Levels of Schooling*, published in April 2024, by Candlin & Mynard ePublishing. The list I mentioned above has now been expanded to over 40 points of possible action across 11 principles. In addition, the chapters include a wide range of case studies, narratives, and broad suggestions for practice. The book itself took a long time to come

out, partly because of my lingering anxiety caused by spending years in doubt of my abilities because of teachers being unable to accept that my reading speed might be high, but my handwriting and math skills are lower. Despite over a hundred presentations and several publications, I still experience the phobias I mentioned in the previous article as strongly as ever. This increases my commitment to keep listening and keep giving neurotypical people experiences that allow them to understand what it is like to be neurodiverse, but also to see past that to the potential that lies in each of us.

> *The long-term goal is that one day, no-one would be worried about being open about their neurodiversity.*

In Chapter 2, I included several examples of what people would like others to know about their life as someone with reading disorder, autism, ADHD, aphantasia, developmental coordination disorder, and other barriers. Remarkably, only one person, the ThinkTank's very own Professor Marc Helgeson, felt comfortable enough to put his name to his experience as a person with dyscalculia. The rest were too worried about career impact, while experiencing some relief at being heard and understood. Some cried when they saw their anonymous stories on the printed page. The Brain SIG is organizing, for the upcoming JALT International Conference, a poster

> *It is a powerful experience to decide to no longer be alone and move past feeling broken.*

presentation about Neurodiversity of people who are neurodiverse and comfortable with sharing that information, plus a poster of empty frames containing the stories of those who want others to know about their lives as people with neurodiversity and their suggestions for things that would help remove barriers. Voice actors are going to bring those stories to life to make it reading barrier-free, of course! The long-term goal is that one day, no-one would be worried about being open about their neurodiversity. It is a powerful experience to decide to no longer be alone and move past feeling broken. I had so many people reach out that I eventually set up secret chats for peer support and to build advocacy networks. Trust is incredibly important. It is truly inspiring to see so many articles and research papers emerging from our JALT community on accessibility.

WHAT TO DO AND WHY

Most people, quite rationally, don't want to spend time fixing things that don't appear to be broken. To overcome this problem, we need to step out of our shoes and look at the view from the perspective of others. The X-factor for moving the hearts of people who have never experienced a barrier is making it real. One of the simplest ways is to enable the non-printing character mode on your computer via the view menu in Google Docs or the paragraph mark on the format bar on Microsoft Word. Some of you will love this. Others will find they are rendered unable to read or write. At that point, you are discovering something new about inclusion or exclusion.

So, that brings me to the first point in my list of recommendations.

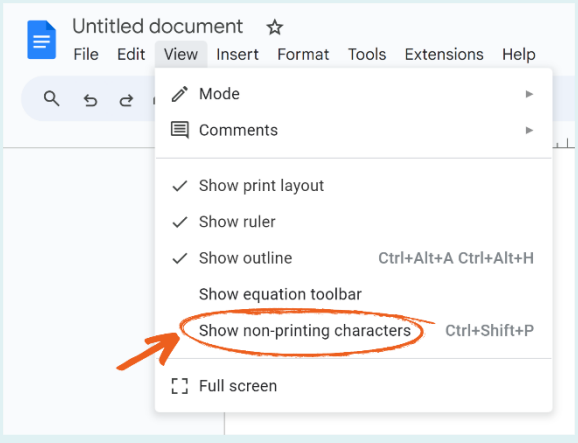
Start the semester with a statement that you understand that people work in different ways and you are always happy to listen.

Assume that a student who does not submit work may have a technology-related barrier or an executive function difficulty rather than they do not care. Students who know what to do and how to do it will usually do it. When dealing with students who appear lost, or defensive, I keep in mind the words of the late Patricia L Vail, an educator and author, "These [children] are not looking for the easy way out, they are looking for the right way in."

WHAT·TO·DO·AND·WHY¶

Most·people,·quite·rationally,·don't·want·to·spend·time·fixing·things·that·don't·appear·to·be·broken.·To·overcome·this·problem,·we·need·to·step·out·of·our·shoes·and·look·at·the·view·from·the·perspective·of·others.·The·X-factor·for·moving·the·hearts·of·people·who·have·never·experienced·a·barrier·is·making·it·real.·One·of·the·simplest·ways·is·to·enable·the·non-printing·character·mode·on·your·computer·via·the·view·menu·in·Google·Docs·or·the·paragraph·mark·on·the·format·bar·on·Microsoft·Word.·Some·of·you·will·love·this.·Others·will·find·they·are·rendered·unable·to·read·or·write.·At·that·point,·you·are·discovering·something·new·about·inclusion·or·exclusion.¶

Where to find the button to show paragraph marks and other hidden formatting symbols in **MS Word**.



Where to find the button to show non-printing characters in **Google Docs**.

Passwords. Passwords can be an invisible barrier (and once again, I am a poster-child example of this) for anyone who has executive function, reading and/or numeracy challenges. There is an emerging body of research on this area, and I recommend you to read the work of Karen Renaud.

Reasonable accommodation. Students may appear in your class with a letter stating "reasonable accommodations"; (a list of conditions they are entitled to have, to make the class accessible for them: for example, headphones in certain situations, using a screen-reader to read, rather than their eyes). For some teachers these letters are helpful to prepare for situations. But for others, they can feel like a restriction on their teaching practice, which needs a bit of "tweaking to fit." These are highly private, legally binding agreements between the specified educational organization and the student and are based on best practice in consultation with psychologists and physicians etc. Trying to renegotiate these is going to stress the student because of the power imbalance.

For example, many teachers worldwide are worried about AI and the originality of student work. So, you change your syllabus to require students to handwrite assignments during classes. In your class is a student who has approval to use keyboarding or voice dictation. All students start writing on paper, except for that one student who is on a computer. Everyone looks at them. What's going on? Why are they special? This is in effect, forcing the student to involuntarily disclose their disability status to others. Because of the stigma associated with being different, they will almost certainly abandon their hard-won accommodations to stay hidden. If this is the case, be prepared not to penalize the student for slow or messy writing. Denying a student the right to use their accommodations by intention or by default, could impact on their future career.

Access. Make sure everyone can access your online content within seconds to minutes. Survey your class to see if they can use all the technical tools needed for the class. This could be digital (using a form accessed by QR code) or paper if you prefer. Why a QR code? A student who cannot log into the computer because they can't remember their password, is not going to be able to "click on a link" in the document management system. But they usually can access a QR code. Follow up during the session with anyone missing in case of failure to comprehend or technical failure.

Conferring about what's expected. Build in short conferring and question time immediately after you give instructions on key tasks. This will help students with reading difficulties and executive function challenges to all get to the same point quickly. Tell the group you will want three questions and put a marker for each point on the board. Allow students to photograph the board and any notes you have written. This is more efficient for students who cannot notetake quickly or legibly.

They can notate the photograph. If you have a student with a visual impairment, give them the slides before class, or allow them to photograph the screen as you present, so they can zoom in on the contents.

Speaking Time. Build in more speaking time along the lines of fast progressive speaking pairs to achieve fluency. Make two or more long rows of pairs, and have the students progress clockwise to a new partner every 2 minutes or less. This builds peer interaction and strengthens speaking skills. Having a predetermined partner reduces anxiety in students who are nervous about being picked. Language courses should be fun. Frequent changes also reduce the likelihood of silence.

Handwriting. Don't enforce writing by hand because it may affect the student's output due to stress. If you are someone who feels irritated by "messy handwriting" you may conclude that it reflects on the student's attitude to study, whereas, it could be dysgraphia or even joint-hypermobility.

Handedness. If your organization has the computers set up for right-handed people only, you could e.g.: ask if extra mouse mats can be provided or if computer mice, which are not surface sensitive, can be bought next time hardware is upgraded. Quietly drop a mat on the table of students you notice writing with their left hand. It is very rare for a student to accept an invitation to come get a mouse mat.

COLOR VISION DIFFERENCES

Think about your classroom and where you use color. Look at the difference color vision can make to the humble board magnet, depending on how your brain interprets the colors you see. Some of them disappear entirely, so think about this if you are using magnets as markers for lesson progression. Show your students and colleagues what the world may look depending on their color vision type by using Professor Kazunori Asada's app *Chromatic Vision Simulator*. Color is made up of Red Green and Blue. Different quantities of these colors change the appearance of an object. In software for slides, on color schemes you can click on sliders and see the color wheel.

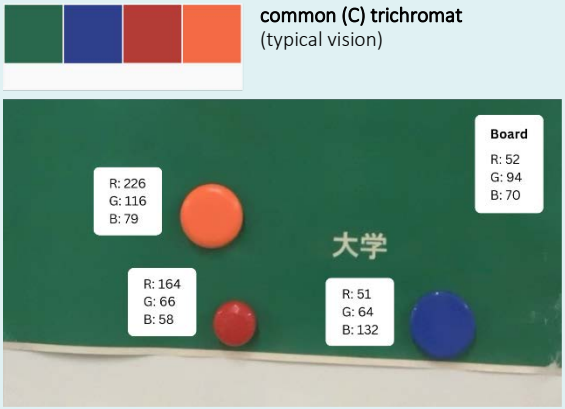
I use this in class to show the students the impact that color has on signage, clothing, and other things we take for granted, like the red pen. Your "red pen" handwriting on student work is going to look a lot like the rest of the writing on a page of notes to a person who cannot distinguish red and pencil on white paper. If you download the app and look at your classroom, you will see if it is color blind accessible.

To the right, a visual representation of what colour vision differences may actually look like. The RGB colour codes next to the magnets show the vast difference in the way certain colors are perceived by people with common vision and various types of colorblindness.

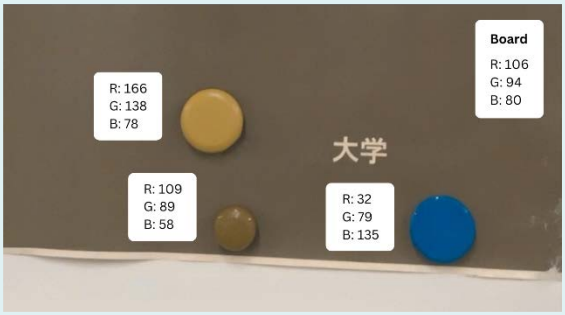
Photos by Burke, A. (2024) using the *Chromatic Vision Simulator App* (Asada Kazunori)

Global data from Berisso, K. (2018)

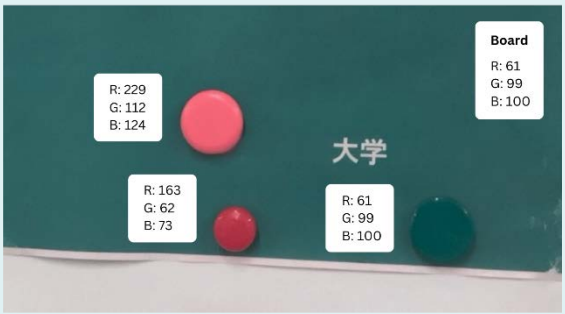
Graphs? Are they labeled sufficiently so that the person with colorblindness in



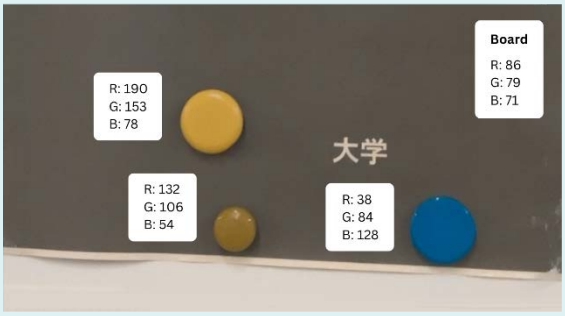
common (C) trichromat
(typical vision)



protanopia/protanomaly (P)
reduced sensitivity to red light
<8% males | 0.5% females



tritanopia/tritanomaly (T)
reduced sensitivity to blue light
very rare, 1:30-50,500



deuteranopia/deuteranomaly (D)
reduced sensitivity to green light
1:20 males | 1:200 females, Japan: one per classroom (Moriya, 2024)

your classroom (there will be at least one) can understand the data as well as the others (Moriya, 2024). For younger learners, games involving color can be a minefield for bullying, but if you label colors in the room, students can have a better chance of learning to recognize which one you mean.

An example of instructions for students, using common pen colors. These colors may look very similar to students with colorblindness, and completing the assignment may become more difficult.

Conclusion

When dealing with students who appear lost, or defensive, I keep in mind the words of the late Patricia L. Vail, an educator and author: "These [children] are not looking for the easy way out, they are looking for the right way in."

Alexandra Burke worked for over 18 years in national health policy development, research, and program implementation in Australia. She now teaches in Japan. Alex holds a B.A. in Public Administration and a Graduate Certificate in Health Economics. She is co-editor of Barrier free Instruction in Japan, Candlin and Mynard, 2024.

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Recognizing and Dealing with Learning Disabilities

A QUICK GUIDE

From the teacher's perspective, learning disabilities range from those that are well-known, like dyslexia, autism, and ADHD, to those that are not, like dyscalculia (difficulty with numbers), dysgraphia (distorted handwriting), and auditory processing disorder (problems with language) (source).

Diagnosing a disability is beyond the scope of what most teachers can do, but we can look for certain signs that indicate the learner is having trouble. "Teaching Strategies for Learning Disabilities" provides an easy-to-understand list of the most common signs:

- Being slow in grasping what's being taught
- Clumsiness
- Problem with understanding and following directions
- Delayed speech
- Trouble with focusing or holding attention
- Zoning out
- Problems reading, writing, or pronouncing words

They also suggest some strategies for such learners (similar to Hannah's and Heather's above), keeping in mind that they see, hear, and learn things in a different way:

- smaller steps
- adapt-ability
- indepen-dence
- regular probing
- mnemonics
- modeling

compiled by Curtis Kelly

Break tasks into smaller steps

Don't try to teach everything at once. That doesn't work right for anyone at all. Especially those with learning disabilities have a lesser attention span, hence you have to make it both short and captivating. Thus, breaking the information into smaller bite-sized chunks is an effective teaching strategy.

Present information in ways they can best adapt

Each one has a different learning style.

Especially those with learning difficulties have certain senses that are stronger than the others for them. And as a teacher, you should work on identifying those and tutor your students via the same.

These can be through 3 major learning styles that are, visual, auditory or kinesthetic. And based on their stronger traits, you can alter your teaching strategies, like helping them via graphics and videos, pod-casts, or by giving them small tasks and helping them with hands-on experience.

Probe regularly to ensure understanding

Once you have covered a topic, do not leave it at that; go back to it and check whether or not they remember it correctly. Revisions and reminders are important for each person, and in this case, too, only practice will make perfect. Many make it a strategy to revise with an online class every other day after they take an offline session. This way they would be in touch with the topic and also get familiar with different learning platforms. (So make sure to invest in a good online teaching app).

Encourage independent practice

Allow them to experiment and learn on their own. Do not spoon-feed everything. Once you familiarize them with certain topics or techniques, give them some time and space to try them out for themselves. Experimentation will make things more interesting for them, and inculcate the trait of patience.

Model what you want students to do

Remember that influence outweighs everything else. What you do and show them will stay with them for longer than what you instruct them to do. As is rightly said, actions speak louder than words. Do things with them. Have them contribute while showing them that you are with them on this ride.

Incorporate mnemonics

Another effective teaching strategy is to use mnemonics. This learning method increases retention and improves retrieval with the help of varied cues. Though, as an educator, you have to make sure that the memory tricks that you choose are actually easy for your students to remember.

Back to me (the above is from the site). We should also keep in mind that most neurodivergent learners are aware of their disabilities, but not always in a reasonable way. They might see themselves as less than their peers or even as stupid, and the price they pay in self-esteem is huge. Helping them maintain their self-esteem and build a positive attitude might be the greatest contribution we can make, and because of the social status they attribute to us, we can. Make it a point to encourage and appreciate their every move towards success.

In fact, just last night, I met an amazing Special Ed. teacher at Lincoln High School, right here in Portland, Oregon, who had a good tip. Kayla Fantz-Sands turns the potentially negative to positive with these words: "Okay, you told me what you can't do as well as others. Now tell me what you can do better!"

And that is the start.

Another Look at Low-Stakes Testing

Written by
Marc Helgesen

I read with interest Stephen M. Ryan's article on Low-Stakes Testing in the Sept. Think Tank. I do something similar in my own classes. What I do is slightly different but similar enough that I thought the idea was worth sharing.

I agree with Stephen's points on Spaced Repetition. Something else that seems worth remembering—big, important (high-stakes) tests at the end of each semester may be one of the dumbest ideas ever to come out of academia: Test Week. When we learn something, the information starts off in working memory (AKA short-term memory) in the hippocampus. It is only after it enters long-term memory that is really "learned." That happens when we sleep. During "test week," learners often cram for their next test, take the test, and forget everything about that test as they go on to the next one.

Repeat until their well-deserved school vacation. The result—little change in what is remembered (so what is the point of what we are doing?).

I write textbooks. As with many textbook authors, our publisher asks us to provide semester tests. We do that. We also write unit quizzes for each chapter in the books. A couple years ago, we (the author team)

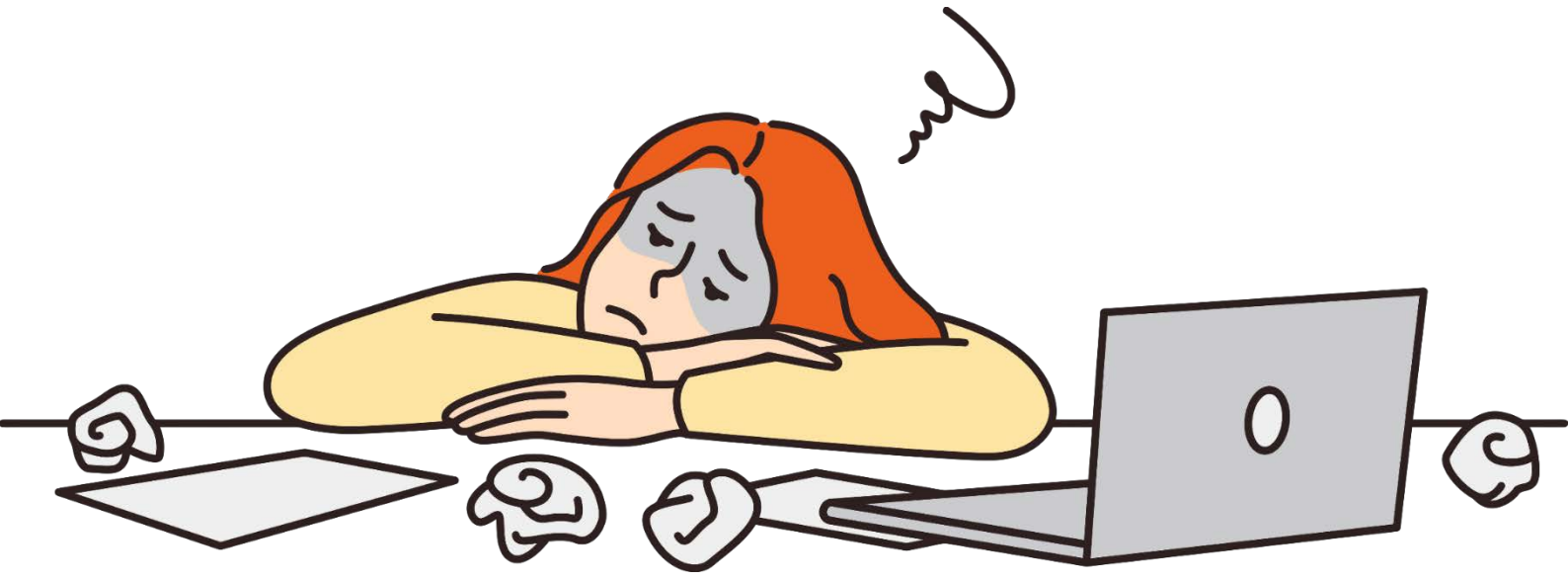
started editing those unit quizzes into mini-tests that covered two units each. Each quiz is worth 33 points. Teachers typically cover six units a semester so three mini-tests take care of half the book. It also adds up to 99 points. This can be the total score for the semester (so the tests are high-stakes, but over a long period) or can be combined with other scores (homework, attendance, participation) to reflect whatever the teachers want to emphasize.

The quizzes take about 20 minutes to do. If you have the learners check their own, that is another 15 or 20 minutes (As legendary educator Mary Finocchiaro used to say: "Never do something for the students that they can do themselves." That seems like a better use of the students' time (and mine) than taking a full class period twice a year.

These quizzes were working well in the authors' own classes so, when we were revising the books, we included them in the back as "practice tests." They are labeled as "practice" but most teachers use them as the real tests. An objection can be made that "the tests are in the book. How can you do that?" Well, that only helps the students if they actually study—kind of the point, isn't it? Also, much of the practice tests relies on listening, so they can review the answers and content in advance, but the quizzes themselves will check how much they understand.

There was space, so we added a learner-reflection section called, "Think about your learning." Students rate themselves on their ability to use the language and functions in the units. Learners generate their own scores. That section also asks, "Are you satisfied with this (score)?" If they are, great. If not, well, we all know what to do next time.

Finally, there is about an inch (2.5 cm) of space at the bottom of the page. We ask the students for "questions / comments / feedback for the teacher." It is common for learners to be asked for feedback but it usually happens at the end of the term, when it is too late for changes to make a difference. One unexpected result: students often write very positive comments about what they like about the class. As a teacher, that is nice to read, especially on test days.



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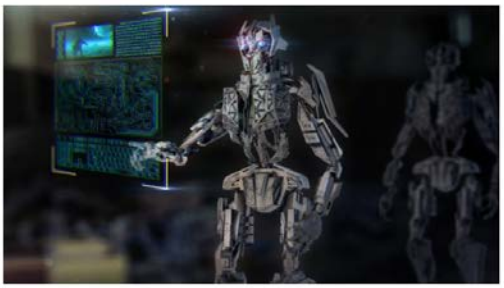


CHATGPT

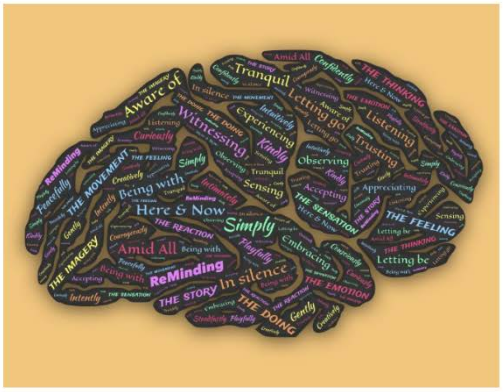
By: Stephen M. Ryan

CEFR LEVEL: B1

WORD COUNT: 906

Imagine you had an app on your phone that could do your homework for you. I don't mean it would help you with your homework. I mean it would do it all for you.

READ THIS ARTICLE



CHANGE IS GOOD FOR YOU!

By: Stephen M. Ryan

CEFR LEVEL: B2

WORD COUNT: 1,136

In our lives, everything changes. Some things change slowly, like the gradual change from hot weather in the summer to cold weather in the winter. Other things change more quickly, like the seconds on a clock.

READ THIS ARTICLE

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Become a Think Tank star! Here are some of the future issue topics we are thinking about. Would you, or anyone you know, like to write about any of these? Or is there another topic you'd like to recommend? Do you have any suggestions for lead-in, or just plain interesting, videos? How about writing a book review? Or sending us a story about your experiences? Contact us.

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- Some information from brain sciences and language teaching
- Expanding on or reacting to our intro video

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