МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ТЕРНОПІЛЬСЬКИЙ НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ ІМЕНІ ІВАНА ПУЛЮЯ

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Inclusive English : Методичні рекомендації для аудиторної та самостійної роботи. Глосарій педагогічних, психологічних, екологічних, хімічних та ортодентичних термінів / уклад. : І.Р. Плавуцька, Н.І. Пасічник, Н.І. Закордонець, Г. Гуменюк, Л. А. Джиджора, Н.В. Слободян, А.В. Косенко, І.В. Беженар, Б.Г. Кушка, О.Г. Шевчук, М. Г. Прохоров, Р.В. Симчак, Ю. М. Мартиць, О. Ю. Мартиць. Тернопіль : ТНТУ Івана Пулюя", 2026. 155 с.

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ТНТУ ім. Івана Пулюя, протокол № 1
від 1 вересня 2026 р.

ЗМІСТ

ПЕРЕДМОВА

Методичні рекомендації містять завдання для аудиторної та самостійної роботи та тематичні глосарії термінів інклюзивної освіти, біотехнологій, хімії та ортодонтії.

Головна мета глосарія – поглиблене оволодіння фаховою англійською мовою у галузі інклюзивної освіти та освоєння термінологічної лексики. При роботі над глосарієм було використано матеріали енциклопедичних словників, перекладознавчих словників та тлумачних фахових словників. Терміни та поняття розміщені у глосарії за алфавітним порядком, що дозволяє користувачам легко орієнтуватись у виборі потрібного матеріалу. Глосарій розрахований на викладачів, аспірантів, магістрів, студентів, програмістів, а також для усіх інших, хто має стосунок до галузі техніки та інформаційних технологій.

INCLUSION AND DIVERSITY READING

Read the text. Determine the genre and style of the text.

- *Analyze the text at the lexical, grammatical, and syntactic levels.*
- *What is the main idea of the text?*
- *What is the target audience of the text?*
- *Prove your assumptions with specific examples.*

WHY IS DIVERSITY, EQUALITY AND INCLUSION IMPORTANT?

There is barely an organisation that does not pay lip service to the importance of diversity, equality and inclusion in their company vision. However, there is also a discernible nervousness among many organisational leaders that this whole topic might risk being a Pandora's box of difficult and divisive issues that they are ill-equipped to deal with, and therefore a fear that trying to get to grips with this agenda might cause more problems than it solves and potentially constitute a reputational risk.

Many organisations don't have the internal clarity around what actually constitutes effective DE&I policies and strategies and find themselves unable to see how these might mesh with the organisation's own mission statement, values and codes of behaviour. Nor do they consider the relationship between aspirational commitments – such as signing up to a code of practice developed by an external organisation – and how these might link to or impact on internal HR policies such as disciplinary and grievance procedures.

This confusion means we are in danger to losing sight of what diversity, equality and inclusion within the workforce means, why it is important, and how policies can be developed and implemented that strengthen both the organisation and its employees.

Diverse organisations are more successful

We need to reiterate the benefits to organisations of a diversity of backgrounds and views, in reducing the danger of group think. The statistics bear out that diverse organisations are more successful. We need to highlight the danger of organisations becoming adrift from their communities, or developments within society in general.

In an increasingly competitive labour market potential employees will be looking at an organisation's culture and whether or not it is serious about or just pays lip service to key issues, including diversity and inclusion. Reviews on Glass Door and equivalent sites are unsparing in pointing out when an organisation's proclaimed approach is just spin.

From a moral standpoint, it's vital for a healthy society that we minimise the existence of 'out groups', excluded from the education and attainment ladders that enable individual progress, and that we confront stereotypes which limit individual potential.

Diversity, equality and inclusion in practice can be challenging, not least because some members of the dominant group can feel under threat and try and pull ladders up. It is important and helpful to recognise that this is a journey for most organisations, as it is for society at large, and may be one with a long trajectory.

How can organisations improve diversity, equality and inclusion?

Peer influence matters – and it's particularly important that leaders set the tone that 'we really mean this stuff' – it's not just a sentence in our annual report. An organisation's strategic narrative needs to use the power of story when it comes to DE&I.

Some key organisational and policy steps include:

- Encourage diverse groups to work together, to talk to each other and gain an appreciation of each other's circumstances.
- Integrate different groups to allow them to establish both professional and personal relationships to harness their potential.

- Focus on empathy, rather than simply asking people to confront their own biases. This helps reduce prejudicial attitudes and behaviours.
- Calling out people in cases of prejudice and discrimination can be effective for curbing unwanted behaviour – as positive challenges against bullying and harassment have demonstrated.

What IPA's work on diversity, equality and inclusion tells us

Diversity, equality and inclusion is not just a question of and for the excluded – it must not be seen (and dismissed) as a minority concern. The views and emotions of the majority group also need to be heard and acknowledged, particularly if attitudes need to be changed. Failure to do so will lead to a lack of engagement, and even reluctance and resistance from those in a position to enable change.

Accountability is key. Responsibility for the diversity, equality and inclusion strategy needs to sit with leaders at board level and not hived off as the responsibility of one person or one group — such as a DE&I Manager or HR team. Business goals must be tied to DE&I, leaders' and managers' competency should be included in individual assessments on achieving goals, and management feedback must encapsulate this.

Measure inclusion and inclusivity as well as diversity. Organisations often use a diverse demographic representation as their measure of success for their DE&I strategies. This primarily focuses initiatives on talent acquisition and promotion processes. Both are incredibly important, and should be part of the discussion around inclusion and equity. However, measuring belonging and inclusiveness are just as crucial - diversity without inclusion is pointless.

It's a question of culture: DE&I approaches must be embedded in an organisation's values and behaviour codes. It's not an aspirational add on, but a core strategy. Training and development programmes must be considered in this light.

Systemic change – not only personal change - is needed. Organisational transformation does not happen through personal actions alone. Processes and

policies must be reviewed, amended, or redone to ensure they are created with everyone's success in mind. In some organisations exclusion is baked into systems (even if inadvertently). Whilst initiatives such as unconscious bias training are laudable, nothing will change unless policies and processes change first.

All parts of the organisation need to work together – employee/internal communications teams, external communications – PR and marketing teams, DE&I specialists and HR to ensure consistent messages particularly in times of challenge.

DE&I strategies and practices also need to align with other internal policies including disciplinary and grievance procedures. Don't sign up to external codes or commitments without thinking through all the implications for people practices.

An organisation's internal dialogue and policy development around DE&I – why, who, what, how and when – should be one of the most fruitful engagements. There is no point filing DE&I in the 'too difficult', or the PR box. Denial or lip service will come back to bite you.

Read the text. Determine the genre and style of the text.

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USA: BUSINESSES MUST STAND FIRM ON DIVERSITY, EQUITY AND INCLUSION, SAY EXPERTS

UN expert welcomes International Olympic Committee policy protecting female categories in sport
PRESS RELEASES

Afghanistan: UN experts demand immediate end to Taliban restrictions on women at UN premises
PRESS RELEASES

USA: UN experts welcome Minnesota truth-seeking entity and urge nation-wide investigations

GENEVA – Businesses across the United States must reaffirm their commitment to human rights and to the principles of diversity, equity and inclusion (DEI) in the workplace, in the wake of recent policy shifts by the US government, UN experts said today.*

"More than ever, businesses must uphold their responsibility to respect human rights, remain resilient in their commitment to creating inclusive and safe workplaces,

and act in accordance with international human rights law and standards, regardless of government actions or political climate," the experts said in a statement.

On 21 January, the new US administration issued Executive Order 14173, titled "Ending Illegal Discrimination and Restoring Merit-Based Opportunity."

The order revokes affirmative action policies and directs a cessation of DEI practices across Federal employers, agencies, contractors, and subcontractors. It further "encourages" private sector businesses to follow suit, raising significant concerns for human rights experts about the potential human rights impacts, particularly for marginalised communities.

"We are deeply concerned by this unprecedented attack on DEI programmes, which the Executive Order defines as "dangerous, demeaning, and immoral race and sex-based preferences." This puts LGBTI+ persons at higher human rights risk," they warned.

The experts were also alarmed by the US Department of Justice memo of 5 February 2025, titled "Ending Illegal DEI and DEIA Discrimination Preferences." The memo mandates a report to the Associate Attorney General by 1 March 2025 recommending measures to end these policies, and tasks the Civil Rights Division with investigating, eliminating, and penalising "illegal DEI practices" in the private sector and federally funded educational institutions.

"Reversing DEI initiatives not only violates the State's duty to protect against discrimination, but it reverses years of progress made in the US in creating inclusive and safe workplaces for all, with a chilling effect on individuals, organisations and businesses wanting to move forward with anti-discrimination initiatives," the experts said.

The measures will also reinforce structural inequalities and discrimination that civil society and the business community have worked hard to address, they warned.

DEI initiatives are not only an essential element of responsible business but also benefit enterprises, including in the US, they said.

Under the UN Guiding Principles on Business and Human Rights, businesses have a responsibility to respect human rights independently of the State's ability or

willingness to fulfil its own human rights obligations, the experts recalled. These responsibilities exist over and above compliance with national laws and regulations, they said.

"To navigate these challenging times, we encourage businesses to engage with civil society actors, particularly LGBTI+ communities and human rights defenders, and to collaborate with their peers to exercise joint leverage to produce positive change for all," the experts said.

The experts have been in contact with the US Government on this issue.

*The experts: Lyra Jakulevičienė (Chairperson), Pichamon Yeophantong (Vice-Chairperson), Fernanda Hopenhaym, Robert McCorquodale, Damilola Olawuyi, Working Group on business and human rights; Alexandra Xanthaki, Special Rapporteur in the field of cultural rights; Graeme Reid, Independent Expert on protection against discrimination and violence based on sexual orientation and gender identity; Irene Khan, Special Rapporteur on the right to freedom of opinion and expression; Gina Romero, Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association; Laura Nyirinkindi (Chair), Claudia Flores (Vice-Chair), Dorothy Estrada Tanck, Ivana Krstić, and Haina Lu, Working group on discrimination against women and girls; and Farida Shaheed, Special Rapporteur on the right to education.

Special Rapporteurs/Independent Experts/Working Groups are independent human rights experts appointed by the United Nations Human Rights Council. Together, these experts are referred to as the Special Procedures of the Human Rights Council. Special Procedures experts work on a voluntary basis; they are not UN staff and do not receive a salary for their work. While the UN Human Rights office acts as the secretariat for Special Procedures, the experts serve in their individual capacity and are independent from any government or organization, including OHCHR and the UN. Any views or opinions presented are solely those of the author and do not necessarily represent those of the UN or OHCHR.

Country-specific observations and recommendations by the UN human rights mechanisms, including the special procedures, the treaty bodies and the Universal

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DISCUSSING DIVERSITY AND INCLUSION IN THE USA AND EUROPE

Written by Dana Korneisel

The conversation within academia surrounding diversity is vastly different between the US and Europe, so much so that your expectations for this essay when viewing the title are likely dependent upon which system, if either, you are immersed in. The American academic reading this title will almost certainly expect a focus on race with discussion of gender as a point of intersection as well as sexuality, socioeconomic class, and physical ability. The European will most likely expect the focus to be on women's presence in the university, possibly with consideration given for nation of origin. My perspective on this topic is deeply rooted in the American system, with recent immersion in the Canadian, and informed by visits to seven Swiss and adjacent European academic institutions in the summer of 2019.

Who is included in the topic of diversity is the first of three major differences I observed on these visits. The second major difference is the way in which we contextualize underrepresentation. Implicit bias is at the center of the American conversation. Europeans see structural disadvantage in the institution as the context of marginalization. This topic's framing leads directly into the last major group of differences – the action steps institutions are taking to become more diverse and inclusive. In America, individual training and behavior is seen as the key to addressing inclusion. In Europe, where the institution is seen as the issue, solutions are expected to come from changes to the institution. By looking at the issue of

inclusion from both perspectives, I believe we can highlight the places our system is lagging in addressing inclusion. In Europe, a wider understanding of personal responsibility and bias would strengthen institutional efforts and encourage participation in existing programs. In the US, our people are adjusting much faster than our institutions, and action rather than support from the university is necessary to advance in progress.

Who is included in diversity?

Despite our similarities, hundreds of years of history and evolving cultural narratives divide American and European universities. American institutions can generally be assumed to include legally protected classes of individuals (i.e. race, color, religion, nation of origin, ancestry, sex, age, disability, veteran status, genetics, and citizenship) in their definition of diversity. Though differences in function arrange the focus on each of these categories, universities are often ahead of legal classification in terms of contemporary issues, including such classes as sexual orientation and gender.

In Europe, I saw a small but expanding range of classes included in diversity initiatives. Universally, the primary focus was on inclusion of women. The representatives of Eidgenoessiche Technische Hochschule Zuerich (ETH), the most research intensive university we visited, demonstrated a strong awareness of the breakdown of their sex ratio by position at the university. A change also seems to be starting with students from Generation Z, who are demanding mental health support and services and increased physical accessibility of university spaces. At University of Zurich, the office for “Gender Equality and Diversity” has, in the last two years, expanded their scope to a wider range of individuals, especially focusing on physical ability. Outside of Switzerland, we got less perspective on this particular issue, but across all of the institutions gender was the term used by diversity programs where we would use sex in the US, illuminating another gap in the loudest topics of

conversation between us. When it comes to what needs to be done to address inclusion, the focus stayed on women.

Who is responsible for inclusion?

Between the US and Europe, the major difference I observed in how diversity issues are being addressed is the placement of responsibility. Where should change come from, the individual (USA) or the institution (Europe) This appears to arise both from the ongoing societal issues which face Americans, forcing us to address individual biases, and some of the deeper trends in our cultures. Driven by movements in American society such as Black Lives Matter, individual responsibility for managing the effects of implicit bias is at the forefront of our discussion. However, none of the European individuals I had a chance to speak with in depth about implicit bias had heard the term, let alone had a familiarity with the concept. In fact, it is necessary to include your image on Curriculum Vitae (CV) in Switzerland, Austria, and Germany. It is even common to list your marital status on a CV. The potential for trouble from these practices was not immediately recognized by our European colleagues, but sparked some considerable outrage among my peers, a stark example of the differences in the content of the conversation around diversity.

Coexisting with this practice, however, is a robust system of funded parental leave, something most Americans lack access to. Actions such as the provision of leave come from the institution itself, and paid leave seemed to be seen as a normal part of a job in European academia today. I see some of the practices more associated with one climate slowly arising across continental boundaries in the other. Efforts at providing leave on the scale of weeks (opposed to the scale of months we heard about in Europe) are popping up in the US. Similarly, seeds of individual pressure were hinted at at ETH, where action was needed to address at least one instance of academic bullying – though this was discussed in terms of quality of life rather than inclusion. They also have made the Dean of their law faculty responsible or litigating harassment, possibly a first step to mitigating interpersonal factors which contribute

to an exclusive work environment. This is a good thing for the future success of diversity and inclusion initiatives in both settings.

Action Steps

The exchange of perspectives on improving diversity and inclusion in American and European institutions could positively influence both sets of institutions. The actions being taken in the US currently focus on individual trainings in recognizing harassment and implicit bias, and on bystander intervention. In Europe thus far, changes are coming in the form of parental leave and flexible schedules of funding and career advancement. However, there was a troubling strand of thought which presented itself in flashes in each university we visited – that the changes necessary to equalize the academic field for women have already been taken and a bit of time is all that is necessary to see the problems solved.

I found that one small observation at Lugano illuminated the future problems of this attitude. First, a bit of perspective. Many older academic buildings lacked women's bathrooms when they were built. Solutions to this in the US range from reassigning the facilities on every other floor to converting portions of utility rooms or old closets into bathrooms for women. Lugano's campus isn't old enough for this issue – its bathrooms were built paired. However, there are now half as many women's bathrooms in their main building as the other half are converted into locked lactation rooms. The solution to a "new" problem reestablished an older one.

Conclusion

The conversation surrounding inclusion and diversity is superficially similar between the US and Europe. The same premises are increasingly accepted by the academy: diversity is good, there are faults in academia causing exclusion, and these faults can be mended. However, the meanings behind these statements vary depending on cultural context and varied plans for instituting change have arisen

from our differences. Despite the shared origins of our academic institutions, the steps being taken to increase diversity and create more inclusive spaces are thus widely different. American institutions should hold tight to personal responsibility and keep the discussion of implicit bias strong to continue to cut away at exclusionary practices. European institutions should look to the US to improve their own systems by adopting useful programs. They should also continue their stronger system of institutional support for a diverse academy (i.e. parental leave, child care, and flexible funding timelines). The US should learn from European universities and institute stronger programs to address structural barriers to inclusion. Furthermore, we should both be aware of the small slice of world culture we have drawn from to come up with the solutions each of us have in place. Given the valuable exchange that could occur between education systems with a closely shared cultural background, a more global perspective would most likely illuminate ever more areas for growth.

Read the text. Determine the genre and style of the text.

- *Analyze the text at the lexical, grammatical, and syntactic levels.*
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EQUALITY IN THE WORKPLACE

Gender equality, a strong and lasting commitment

Gender equality is central to our working culture. We know that diverse teams spark innovation and improve results. From recruitment to training, and from career development to fair pay, we take concrete steps to ensure an inclusive workplace where everyone can thrive.

Why gender equality matters at Orange

Equality, diversity, and inclusion are part of our DNA. Teams with varied experiences and perspectives are better at finding smart, innovative solutions. Research supports this: according to McKinsey's D&I Global Market Report, 87 percent of decisions in diverse teams outperform those made in more homogeneous groups.

We put this into practice across our Group. More than 58,000 employees have completed multilingual diversity and inclusion training. Programs like Hello Women and Women Up help women grow their skills, build leadership, and develop professional networks. The Hello Women community in France, made up of 400 role models, shares experiences to inspire new talent and strengthen women's careers in technical and digital roles.

Orange also supports international initiatives. In 2015, we signed the UN Women's Empowerment Principles. In 2019, we signed a global agreement with UNI Global Union covering three core areas: gender equality at work, work-life balance, and preventing discrimination and violence. This agreement applies across all subsidiaries and sets a framework for action, which we pursue through five strategic priorities.

How Orange supports gender equality in practice

Our gender equality strategy focuses on five concrete strategic areas.

Réunion dans un open space
Encouraging diversity across all roles

We aim to increase women's representation in technical and digital roles. The Hello Women program operates in over 20 countries. By the end of 2024, we ran more than 140 initiatives and supported over 55,000 women. The Women Up in Tech program provides additional mentoring and career support. We also support programs for young girls and professional re-skilling initiatives to bring new female talent into our workforce.

Gender equality and AI

In AI and data roles, Orange takes a proactive approach to ensure fair and responsible algorithm design. Through the International Charter for Inclusive AI, launched with the Arborus Endowment Fund, we ensure teams are diverse, and we identify and correct potential biases. This approach is certified under the international GEEIS AI label, confirming our compliance with ethical and inclusive standards.

Women are still underrepresented in AI and data: only 12% of AI researchers worldwide are women. Orange runs training and awareness programs to develop

female skills in these future-oriented fields, contributing to AI that is more responsible, fair, and reflective of society's diversity.

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EVERY CHILD CAN LEARN: EMBRACING DIVERSITY IN EDUCATION

The belief that every child can learn forms the cornerstone of inclusive education. This principle does not imply that all children will learn in the same way or at the same pace. Instead, it recognizes the diverse learning needs, abilities, and potentials of each child, advocating for tailored educational strategies that unlock individual strengths. This article delves into the importance of embracing diversity in educational practices, highlighting the need for tailored approaches, supportive environments, and the role of technology in facilitating learning for all.

Understanding Diverse Learning Needs

Children come into the world with unique backgrounds, abilities, interests, and challenges. Some may excel in visual and spatial reasoning, while others show strength in verbal or logical-mathematical intelligence. Similarly, learning differences such as dyslexia, ADHD, and autism spectrum disorders affect how children perceive and process information. Recognizing this diversity is the first step toward creating an education system that enables every child to learn effectively.

Tailoring Educational Strategies

To cater to varied learning needs, educational strategies must be flexible and adaptable. Differentiated instruction, a method that involves adjusting teaching techniques, content, and learning activities, is crucial. For instance, while traditional teaching might focus heavily on reading and writing, differentiated instruction incorporates visual aids, hands-on activities, and interactive learning to engage students with different learning preferences.

The role of educators is pivotal in implementing these strategies. They need to be trained to identify individual learning styles and potential barriers to learning, equipping them with the tools to modify their teaching methods accordingly. Continuous professional development, mentorship programs, and collaboration with special education specialists can enhance their ability to support diverse learners.

Creating Supportive Learning Environments

Every child can learn when provided with a supportive and nurturing environment. Schools must foster an atmosphere of acceptance and understanding, where children feel safe to express themselves and explore their abilities. This involves not just physical accessibility but also an emotional and psychological climate that promotes positive self-esteem and resilience.

Peer support and inclusive classroom practices can significantly impact learning outcomes. Encouraging teamwork, collaboration, and social interaction among students with varying abilities fosters empathy, mutual respect, and a sense of community. Such environments empower students to take risks, ask questions, and engage deeply in the learning process.

Leveraging Technology in Education

Technology plays a crucial role in democratizing education and ensuring that every child can learn. Assistive technologies, such as speech-to-text software, reading aids,

and adaptive learning platforms, provide customized support to meet individual learning needs. These tools can make learning more accessible, engaging, and effective for students with disabilities or those who struggle with traditional teaching methods.

Moreover, educational technology can facilitate personalized learning, where students progress at their own pace, following a learning path that aligns with their interests and abilities. Online resources, educational apps, and interactive platforms offer diverse content and learning modalities, accommodating different learning styles and preferences.

The Importance of Early Intervention and Continuous Support

Early identification and intervention are critical in ensuring that every child can learn to their fullest potential. Screening for learning differences and developmental delays should be an integral part of the educational process, allowing for timely support and intervention. Early educational programs, therapeutic services, and family support can significantly influence a child's developmental trajectory.

However, the support should not end in early childhood. Continuous monitoring, assessment, and adaptation of learning strategies are necessary to address the evolving needs of students as they progress through different educational stages. Partnerships between schools, families, and healthcare professionals can facilitate a comprehensive approach to supporting the child's learning and development.

Conclusion

The philosophy that every child can learn is not just an ideal but a practical approach to education that calls for a shift in how we perceive and respond to individual differences. It demands a commitment to creating inclusive, supportive, and adaptable learning environments that recognize and value the unique contributions of each student. By embracing diversity in educational practices,

leveraging technology, and ensuring continuous support, we can make learning accessible and meaningful for every child, paving the way for a more inclusive and equitable society.

Written by Rosalin Abigail Kyere-Nartey, a Dyslexic & Executive Director of African Dyslexia Organization (ADO). ADO is a non-profit organization that focuses its efforts on providing help for dyslexic people by raising awareness and advocacy, providing educational tools, framework and support in Africa.

Read the text. Determine the genre and style of the text.

- *Analyze the text at the lexical, grammatical, and syntactic levels.*
- *What is the main idea of the text?*
- *What is the target audience of the text?*
- *Prove your assumptions with specific examples.*

WHAT IS INCLUSION AND HOW DO WE IMPLEMENT IT?

We all seem to talking about inclusion and the importance of it. There are special departments in many educational institutions, especially in the public sector, which focus just on how to create and maintain inclusive work environments.

So what is inclusion and why is it important? It is not just about including learners with Specific Learning Differences (SpLDs). Inclusion is a basic right of everyone and its objective should be to embrace everyone regardless of race, age, gender, disability, religious and cultural beliefs and sexual orientation. When we have true inclusion, it is when we have removed all barriers, discrimination and intolerance. When implemented properly, it should make everyone feel included and supported, whichever environment they are in.

What does inclusive practices mean, and how can we ensure that all our classrooms and work environments are truly inclusive?

Inclusion is about how we structure our schools, our classrooms and our lessons so that all our students learn and participate together. An inclusive classroom is one that creates a supportive environment for all learners, including those with learning differences, and can also challenge and engage gifted and talented learners by building a more responsive learning environment.

Inclusivity also means respecting people from all backgrounds and cultures, and by teaching our students the importance of this we create a much more tolerant and understanding environment, not just in the classroom and school but also in wider society.

An inclusive school or classroom can only be successful when all students feel that they are truly part of the school community. This can only happen through open, honest discussion about differences and understanding and respecting people from all abilities and backgrounds. An inclusive environment is one where everyone feels valued.

Here's how you can help promote inclusivity in your classrooms:

Think about your own values and approach to disability, gender, race, etc. Does how you teach acknowledge the experiences of the students from different backgrounds? Is your approach non-stereotypical? Using stereotypes can alienate and marginalise people, and using generalisations can have a negative effect on learners. Do you encourage alternative perspectives, debate ideas, create an environment which is open to representation of different viewpoints?

Are your students treated as individuals, encouraged to share their own lives and interests? Building a good rapport with your students helps with this. If your students feel comfortable and supported by you, then they will be more open to sharing their ideas, thoughts and interests with you and the other students. This can be achieved quite easily. On the first day of class, share some information about yourself with your students. Tell them what your interests are, why you like teaching, etc. Another activity you could do in the first lesson is to write five words on the board about yourself. Tell your students that they have to ask you questions to find out what the words are the answers to. Then get the students to do the same activity for themselves in groups.

In an ELT racially diverse classroom, have you thought about your own conscious or unconscious biases about people from other cultures? Do you have different expectations of students of colour than you do of white students, of male or female student, of students from the LGBTQ community?

Create a supportive, respectful environment: promote diversity and equity.

‘Classroom climate is affected not only by blatant instances of inequality directed towards a person or group of people, but also by smaller, more subtle "micro-inequities" that can accumulate to have significant negative impacts on learning’ (Hall, 1982).

This can be created by thinking about a couple of things: Think about how you deal with student–student interaction. The way you deal with negative interaction is very important.

Also think about the interaction between teacher and student. Are you an approachable teacher? ‘Students who felt that their teacher was approachable, had concern for minority student issues and treated students as individuals and with respect reported a better course climate’ (Astin, 1993). If you establish some ground rules about acceptable and unacceptable behaviour, this will help students understand more clearly both your and other students’ expectations. You can do this at the beginning of each course and involve your students in putting together what everyone feels is acceptable and unacceptable. It is always a good idea to revisit this from time to time as a reminder to everyone.

Have high expectations of all your students. Research shows that students respond better when they feel that their teacher has faith in their abilities and is not focusing on their inabilities.

Plan learning which includes participation from everyone and encourages success. You can do this by creating an environment which is personalised to the students’ needs and talking about learning that focuses on what students can do and what they would like to do next. This can be done through tutorials, individual learning plans (ILPs) and short- and long-term goal-setting by the learner so that they feel they have ownership of their learning. If you provide students with opportunities to tell you what is working and what needs attention, you will have a better idea of what to focus on.

Take a ‘community’ approach to learning and teaching. Inclusive values are developed through a student’s lived experiences and their exposure to other cultures

and world-views. Bring your community into the classroom and take your classroom out to the community.

And a final thought on why inclusion is important:

‘Even though some of us might wish to conceptualize our classrooms as culturally neutral or might choose to ignore the cultural dimensions, students cannot check their sociocultural identities at the door, nor can they instantly transcend their current level of development … Therefore, it is important that the pedagogical strategies we employ in the classroom reflect an understanding of social identity development so that we can anticipate the tensions that might occur in the classroom and be proactive about them’ (Ambrose et. al., 2010, p. 169–170).

Creating an inclusive environment will not only help those students with learning differences, it will also support those students who don’t have a learning difference by making them more aware, tolerant and understanding of each other.

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INCLUSIVITY 101: BUILDING A MORE INCLUSIVE BUSINESS

In today's diverse and dynamic business landscape, inclusion has become a fundamental aspect of creating a thriving workplace and driving business success. But what is inclusivity and how can it benefit your business? We'll break it down and provide actionable suggestions to help you foster a more inclusive workplace.

NOTE: There is no legal requirement to implement DEI policies in the workplace; however, some government contracts may require them as part of the bidding process. This information is provided to support employers who wish to adopt DEI policies in their business.

What is Inclusivity?

Inclusivity refers to creating a workplace where all employees feel valued, respected, and empowered, regardless of their background, identity, or abilities. It's about recognizing and embracing the diversity within your team and ensuring that everyone has equal opportunities to contribute and succeed.

Why is Inclusivity Important?

Enhanced Creativity and Innovation: Inclusive teams bring together diverse perspectives, fostering creativity and innovation. This can lead to the development of new ideas and solutions, giving your business a competitive edge.

Attracts a Diverse Customer Base: An inclusive business is more likely to attract a diverse customer base. Customers appreciate and support businesses that align with their values.

Increased Employee Engagement: When employees feel included, they are more engaged and committed to their work. This can lead to higher productivity, reduced turnover, and a positive company culture.

Wider Talent Pool: An inclusive workplace attracts a broader range of talent. This means you can tap into a diverse pool of skilled individuals, improving your chances of finding the right fit for your team.

Better Decision-Making: Inclusive teams are better equipped to make well-informed decisions because they consider a wider range of perspectives and experiences.

How to Foster Inclusivity in Your Business:

Create a DEI (Diversity, Equity, and Inclusion) Statement: Start by developing a clear DEI statement that outlines your commitment to creating an inclusive workplace. Ensure all employees are aware of and understand the statement. A template is available to CFIB members in the Member Portal.

Encourage employees to learn about diversity and inclusion: CFIB's Savings Program Partner, VuBiz, offers a foundation course on diversity and inclusion, and the value of building an inclusive workplace.

Promote Inclusive Communication: Encourage open dialogue and active listening among employees. Create an environment where everyone's voice is heard and respected.

Indicate Inclusivity in Hiring Ads: Include a statement in your job postings that demonstrates your commitment to diversity and inclusion. This can attract candidates who value these principles.

Unconscious Bias Training: Provide training to your employees to raise awareness of unconscious biases and equip them with strategies to mitigate them. This can help ensure fair hiring and promotion practices. VuBiz offers a course on Unconscious Bias and the steps you can take to manage it.

Harassment Prevention Plan/Policy: Develop a robust harassment prevention plan that includes clear reporting procedures and consequences for inappropriate behavior. Ensure all employees are aware of this plan. Note that an anti-harassment plan or policy is a legal requirement in some jurisdictions. CFIB members can access a template policy in the Member Portal.

Employee Resource Groups: Establish employee resource groups or affinity networks to provide a supportive space for underrepresented employees and promote a sense of belonging.

Regular Feedback and Surveys: Seek feedback from employees on their experiences and perceptions of inclusion within your organization. Keep surveys anonymous so employees feel free to share their honest thoughts. Use this feedback to make improvements.

Community Engagement: Get involved in local diversity and inclusion initiatives to show your commitment to these principles beyond your workplace.

Use our Inclusion Checklist to help find easy, low-cost ways to make the workplace more inclusive.

Inclusivity isn't just a social responsibility—it's a strategic advantage for your small business. By fostering a more inclusive work environment, you can unlock the full potential of your team, drive innovation, and create a workplace where everyone thrives.

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SUPPORTING THE DIGNITY OF DISABLED PEOPLE – THINGS TO KNOW AND DO

The language about disability

There are many words and terms that are used by disabled people to identify themselves. The way these are understood differs. For some of us, the term, "disabled people", is a source of pride, identity and recognition that disabling barriers exist within society and not with us as individuals. For others, the term, "people with disability", is important to those who want to be recognised as a person before their disability.

We know non-disabled people are sometimes not sure which words or terms to use in order to be respectful. We recommend you ask the disabled people how they refer to themselves and use the same language. If you are still not sure, then just ask us what language disabled people prefer.

The current consensus, based on advice from the New Zealand Disability Strategy Revision Reference Group external, is "disabled people". In future, it is possible disabled communities will decide to revise the way to describe themselves collectively. If this happens, the language may change to reflect this.

Not all members of the disability community identify with disability-focused language.

Older people and their families and whānau sometimes think that disability is a normal part of the ageing process.

People with invisible impairments, such as mental health issues, can sometimes identify as part of the mental health community, and not the disability community.

Deaf people who identify as part of the Deaf community understand themselves as having their own unique language and culture, and do not always identify as being disabled. (A capital D rather than a lower case d in "Deaf" is used to convey this.)
Most Māori disabled people identify as Māori first. The importance of their cultural identity, which encompasses language, whānau, cultural principles, practices and linkages to the land through genealogy, is paramount to how they live their day to day lives in both Te Ao Māori and Te Ao Pākehā.

Neurodivergent people may not self-identify as disabled people.

Autistic people usually prefer identity-first language (autistic person) rather than person-first (person with autism), although preferences vary.

Basic good behaviour

The basic principle is to put the person before the impairment.

Ask before you help

Just because someone has an impairment, don't assume they need help. Disabled people want to be independent. Offer assistance only if the person appears to need it. And if they do want help, ask how before you act.

Be sensitive about physical contact
Think before you speak
Always speak directly to the disabled person, not to their companion, aide or sign language interpreter.
Respect their privacy. If you ask about their disability, they may feel like you see them only as a disability and not as a person.
Don't make assumptions
Disabled people are the best judge of what they can or cannot do. Don't make presumptions about people's perceived limitations.

Never ask "What happened to you?"

Or ask questions about their aides, equipment, or modifications in an insensitive way e.g., "what's with the cane?" or "why do you use that chair?" etc

Respond graciously to accessibility requests

If you can't deliver a perfect solution, is there something else you could offer?

People who are mobility impaired

People who are mobility impaired include people with varying types of physical impairments. People with mobility impairments often use assistive devices or mobility aids such as wheelchairs, walkers, crutches, canes and artificial limbs to aid in mobility, though some do not.

Wheelchair users are people, not equipment. Ask the person in the chair instead of attempting to move it yourself.

Treat wheelchair users with respect and dignity, like anyone else. Never patronise them by patting them on the head or shoulder.

When speaking to a person using a wheelchair or a person who uses crutches, place yourself at eye level in front of the person to facilitate the conversation.

Don't push or touch a person's wheelchair; it's part of their personal space. If you help someone down a curb without waiting for instructions, you may dump them out of their chair. You may detach the chair's parts if you lift it by the handles or the footrest.

Keep the ramps and wheelchair-accessible doors to your building unlocked and unblocked. Displays should not be in front of entrances, rubbish bins should not be in the middle of aisles and boxes should not be stored on ramps.

Be aware of wheelchair users' reach limits. Place as many items as possible within their grasp. Make sure there is a clear path of travel to shelves and display racks. When talking to a wheelchair user, grab your own chair and sit at their level. If that's not possible, stand at a slight distance, so they aren't straining their neck to make eye contact with you.

If the service counter at your place of business is too high for a wheelchair user to see over, step around it to provide service. Have a clipboard handy if filling in forms or providing signatures is expected.

If your building has different routes through it, be sure your signs convey which routes around the facility involve steps, narrow spaces or other physical features. People who walk with a cane or crutches also need to know the easiest way to get around a place, but stairs may be easier for them than a ramp. Ensure security guards and receptionists can answer questions about the most accessible way around the building and grounds.

If the nearest public toilet is not accessible or is located on an inaccessible floor, allow the person in a wheelchair to use a private or employees' accessible toilet.

People who use canes or crutches need their arms to balance themselves, so never grab them. People who are mobility-impaired may lean on a door for support as they open it. Pushing the door open from behind or unexpectedly opening the door may cause them to fall. Even pulling out or pushing in a chair may present a problem.

Always ask before offering help.

If you offer a seat to a person who is mobility impaired, keep in mind that chairs with arms or with higher seats are easier for some people to use.

Falls may be a problem for people with mobility impairments. Be sure to set out adequate warning signs if the floor is wet. Also put out mats on rainy or snowy days to keep the floors as dry as possible.

People who are not visibly mobility impaired may have needs related to their mobility. For example, a person with a respiratory or heart condition may have trouble walking long distances or walking quickly. Be sure work areas and workstations have ample seating for people to sit and rest.

Some people have limited use of their hands, wrists or arms. Be prepared to offer assistance with reaching for, grasping or lifting objects, opening doors etc.

People who are visually impaired or blind

People who are blind, low vision or deafblind have multiple ways of orienting themselves to familiar and unfamiliar environments. Often people with vision impairment are competent travelling with a white cane, a guide dog or without a mobility aid. A person may have a visual impairment that is not obvious. Be prepared to assist if you are able when asked - for example in reading a bus sign.

Identify yourself before you make physical contact with a person who is blind. Tell them your name - and your role if appropriate, such as security guard, case manager, receptionist, employment coordinator, work broker.

In meetings it can be helpful to provide a visual description when you introduce yourself. Give important information such as your age, ethnicity and specific characteristics. Be mindful that visual descriptions (for example describing your personal appearance the first time you speak) can be a personal preference for people who are blind or have low vision.

In a group setting, introduce vision impaired people to others who are present so they are not excluded. In group settings, including online meetings, say your name before speaking.

It is helpful to call a blind person by name or touch them gently on the arm when addressing them.

If a new employee is blind or has low vision, offer them a tour of your workplace. People with vision impairment often use their arms for balance. Offer your arm rather than taking theirs - if they need to be guided. It is appropriate to place your hand on a bannister or seat back for the person to follow as a guide to help direct them to its orientation.

If the person has a guide dog, walk on the side opposite the dog. As you are walking, describe the setting, noting any obstacles, such as stairs (“up” or “down”) or a big crack in the footpath. Other hazards include: half-opened doors, desks or plants. If you are going to give a warning, be specific, “Look out!” does not tell the person if they should stop, run, duck or jump.

If you are giving directions, give specific, non-visual information. Rather than say, “Go to your right when you reach the office supplies,” which assumes the person

knows where the office supplies are, say, “Walk forward to the end of this aisle and make a quarter turn/ninety degree turn right.”

If you are leaving a vision impaired person alone, inform them first and let them know where the exit is. Guide them to a wall, table, or some other landmark. The middle of a room may seem like the middle of nowhere to them.

Don’t touch the person’s cane or guide dog. The dog is working and needs to concentrate. The cane is part of the individual’s personal space. If the person puts the cane down, don’t move it. Let them know if it’s in the way. Some white canes fold or can telescope into themselves for ease.

Offer to read written information - such as hardcopy forms to customers who are blind.

A person who is vision impaired may need written material in large print. A clear font with appropriate spacing is just as important as type size. Labels and signs should be lettered in contrasting colours. It is often easiest for people with vision impairments to read bold white letters on a black background.

Good lighting is important, but it shouldn’t be too bright. In fact, very shiny paper or walls can produce a glare that may be uncomfortable.

Keep walkways clear of obstructions. If people who are blind or have low vision are regular clients, inform them about any physical changes, such as rearranged furniture, equipment or other items that have been moved.

Don't worry about using words such as "see" or "look" in a conversation. These words are a part of everyday conversations and aren't considered offensive.

People who are hard of hearing or Deaf

The term, "hard of hearing", is often used to describe people with any degree of hearing loss, from mild to profound, including those who are Deaf and those who are hard of hearing.

As already stated, Deaf people who identify as part of the Deaf community understand themselves as having their own unique language and culture, and do not

always identify as disabled. All people who use New Zealand Sign Language (NZSL) identify themselves as being Deaf.

NZSL is an entirely different language from English, with its own syntax. Speech reading (lip reading) is difficult for people who are Deaf if their first language is sign language because the majority of sounds in English are formed inside the mouth, and it's hard to speech read a second language.

People who are hard of hearing, however, communicate in English. They use some hearing but may rely on amplification and/or seeing the speaker's lips to communicate effectively. Some people who are hard of hearing may have a speech impairment.

To facilitate lip reading, face into the light and keep your hands and other objects away from your mouth. Don't turn your back or walk about while talking. If you look or move away, the person might assume that the conversation is over.

There is a range of communication preferences and styles among people with hearing loss that cannot be explained in this brief space. It is helpful to note that the majority of late deafened adults (in New Zealand) use English and do not communicate with sign language. They may be candidates for writing and assistive listening devices to help improve communication.

People with cochlear implants, like other people who are hard of hearing, will usually inform you what works best for them.

When the exchange of information is complex, the most effective way to communicate with a native signer is through a qualified sign language interpreter. For a simple interaction writing back and forth is usually okay.

Follow the person's cues to find out if they prefer sign language, gesturing, writing or speaking. If you have trouble understanding the speech of a person who is deaf or hard of hearing, let them know.

When using a sign-language interpreter, look directly at the person who is Deaf, and maintain eye contact to be polite. Talk directly to the person ("What would you like?"), rather than to the interpreter ("Ask them what they'd like.").

People who are Deaf need to be included in the decision-making process on issues that affect them; don't decide for them.

Before speaking to a person who is Deaf or hard of hearing, make sure you get their attention. Depending on the situation, you can extend your arm and wave your hand or tap their shoulder.

Rephrase, rather than repeat, sentences the person doesn't understand.

Speak clearly. Most people who are hard of hearing count on watching people's lips as they speak to help them understand. Avoid obscuring your mouth with your hand while speaking.

There is no need to shout at a person who is Deaf or hard of hearing. If the person uses a hearing aid, it will be calibrated to normal voice levels; your shout will just sound distorted.

People who are Deaf (and some who are hard of hearing or have speech impairments) make and receive telephone calls with the assistance of a device called a TTY (short for teletypewriter). A TTY is a small device with a keyboard, a paper printer or a visual display screen and acoustic couplers (for the telephone receiver).

People with speech impairments

A person, who has had a stroke, is hard of hearing, uses Augmentive and Alternative Communication (AAC) such as a tablet synthesising speech, has a stammer or other type of speech impairment may be difficult to understand.

Give the person your full, unhurried attention and speak in your regular tone of voice. Don't interrupt or finish the person's sentences. If you have trouble understanding, don't nod. Just ask them to repeat. In most cases the person won't mind and will appreciate your effort to hear what they have to say.

If you are not sure whether you have understood, you can repeat for verification.

If, after trying, you still cannot understand the person, ask them to write it down or suggest another way of communicating.

Keep your manner encouraging rather than correcting.

A quiet environment makes communication easier.

People with cognitive impairments (including learning disability)

People with cognitive impairments have difficulty remembering, learning new things, concentrating, or making decisions that affect their everyday life. Cognitive impairments range from mild to severe.

Use language that is concrete rather than abstract. Be specific, without being simplistic.

Repeat information, using different wording. Allow time for the information to be fully understood.

People may respond slowly in conversation. Be patient, flexible and supportive.

Some people with cognitive impairments may be easily distracted. Try to redirect politely.

People with brain injuries may have short-term memory difficulties and may repeat themselves, or require information to be repeated or written down.

People with auditory perceptual difficulties may need to have directions repeated and may take notes to help them remember directions or the sequence of a task.

People who experience “sensory overload” may become disorientated or confused if there is too much to absorb at once. Provide information gradually and clearly. Reduce background noise, if possible.

Autistic people

Autism, or the diagnostic term autism spectrum disorder (ASD), refers to a neurodevelopmental condition that affects communication, social interaction, and

adaptive behaviour. The spectrum of autism is now recognised as covering a wide range of support needs, disabilities, communication abilities and intellectual ability. Signs and symptoms vary with age and can also vary over time. Autistic people can have a wide range of support needs.;

Given that most autistic people experience difficulty processing everyday sensory information, it is helpful to minimise non-essential sensory input to create a safer sensory environment and facilitate communication:

Avoid loud noises.

Fluorescent and flashing lighting can cause severe sensory overload, so natural light or soft incandescent lighting is better.

Large groups can be over-stimulating or overwhelming; it can be challenging to understand the social nuances of such groups. Small groups in quiet rooms are the better option for meaningful communication.

Autistic people communicate in different ways, from spoken words to writing to gestures and sounds. It is important to respect these diverse forms of communication. Do not insist on direct eye contact which can be distracting or even uncomfortable and threatening.

Bear in mind that the tone of voice, body language or facial expressions of an autistic person may not match what they intend to communicate. Do not expect an autistic person to read nonverbal communication. When necessary, be clear and direct.

Make sure to allow for sufficient processing time when asking questions or engaging in a conversation.

Focusing or paying attention can look different for autistic people. Some may fidget with something, or not look at the person who is talking. This is not intended to be rude.

Autistic people like routine and predictability. Let them know how long the current activity is expected to take and what will happen next.

Read the text. Determine the genre and style of the text.

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LIVING WITH DISABILITIES, NOT OBSTACLES

By Orna Herr, Communications Officer (Education) at the British Science Association

Did you know that of the world's human population of 8 billion, over 1 billion live with some form of disability?

Disabled people work and participate in every professional and recreation field, including STEM*. However, as with many other minority groups, disabled people are underrepresented - while 20% of the working-age population in the UK are registered disabled, they make up just 11% of the STEM workforce.

As champions of equality, diversity and inclusion in STEM - and indeed society - at the British Science Association (BSA), we work with and for disabled people.

To inspire STEM engagement we work with disabled children and young people, their teachers and community groups supporting disabled people to develop accessible programmes and resources. We also provide a platform to showcase the amazing work of disabled scientists, researchers and engineers, and those whose innovations improve the lives of disabled people.

To mark the 30th annual International Day of Persons with Disabilities on 3 December, we want to introduce you to disabled scientists from our network and also highlight work supporting the disabled community in 2022.

Disability and creativity are not mutually exclusive

Each year as part of British Science Week, we run our Smashing Stereotypes campaign to share the stories of STEM professionals who break the mould, either by coming from a background underrepresented in STEM and making huge strides in their field, or by working on innovations that support underrepresented audiences.

Pete Barr and Eli Heath, who were profiled as part of Smashing Stereotypes in 2022, fall into the latter camp. After working on a university project together to create a prototype to allow wheelchair users to create art, they founded Enayball in 2018.

At Enayball they have perfected their initial design to create a sleek product which attaches to wheelchairs so users can either create large scale artwork on the floor or use the hand-held table top version.

Pete told us:

"I'm really interested in the world of socially-led design, creating things that actually help people rather than just producing products that can be sold - Enayball is a really great way of being part of that world. For me, the most important thing about this project is sticking to the vision behind it: to make art accessible to everyone."

Creativity, STEM and a desire to see a world where disability doesn't hold people back collide in Enayball and we can't wait to see what they do next!

Children with SEND celebrate British Science Week

Way back in March, we spoke to Rebecca Lees, a teacher at Bardwell School for children with special educational needs and disabilities (SEND). Her school received a Kick Start Grant from the BSA to fund science engagement activities at the school for British Science Week.

Rebecca told us how they invited public-facing STEM professionals into the school to put on workshops and show the children what they do.

We looked at the types of careers that our students will have access to throughout their lives as opposed to the jobs they might go into. So, for example we looked at audiology, emergency services, nurses, dentists, opticians, physiotherapists... we had a professional from each of these careers come in to the school…

The idea was that it would help break down barriers our students have, because they will meet each of these people in their life…we wanted them to feel really confident when that happened, and that these are people we know and can trust.

STEM learning and engagement doesn't have to be about working in the field, it can be about understanding and feeling connected to how the world works, and your place in it.

As Rebecca explains, teaching children with SEND, while rewarding, presents unique challenges.

Some of the biggest problems we have are that you're catering for such a wide range of abilities, so I might have a student who's got really complex needs, who's in a wheelchair who needs support to do absolutely everything… and then in that same

lesson you might have students …who could, with the right support achieve quite substantial amounts, and really work on the scientific aspects and the content of knowledge.

We want to support teachers, like Rebecca, as much as possible.

Through our Underrepresented Audiences Network for teachers, we connect teachers from schools in challenging circumstances with other experienced educators who can provide help and advice. A third of our Network are from SEND schools. As part of Network Conference this summer, we ran a SEND Teaching CPD session with Rob Butler, a secondary science teacher who has worked in special education for 20 years.

Rob offered tips on creating a classroom culture that is conducive for learning (such as using a reward system), avoiding an overload of information and working on retrieval practice.

A strong theme running through the British Science Festival 2022 was how innovations in STEM can improve our futures, including for disabled people. Two events on this theme stood out.

At Crip AI: disability led design, access researcher Dr Louise Hickman, from the Minderoo Centre for Technology and Democracy at the University of Oxford, spoke to Clio Heslop, our Head of Policy, Partnerships and Impact, about the space between algorithms and people.

Dr Hickman explained how artificial technology (AI), ostensibly created to make our lives easier, is not always necessarily designed with disabled users in mind. She used examples, such as captioning, to demonstrate the sometimes fraught relationship between technology and the people who use it, and shine a light on the importance of disability-led design.

Another talk at the Festival showcased how some scientists are focusing their efforts on technology to aid the lives of disabled people and help to protect the planet at the same time!

At Recycled Prosthetics, Dr Farukh Farukh, an engineer at De Montfort University, spoke about how he is using recycled plastic to create prosthetic limbs, providing access to life-changing prosthetics in developing countries.

He talked through how plastic bottles can be processed and manipulated into perfect light-weight materials for prosthetics.

The next British Science Festival will take place in Exeter in September 2023, so look out for more talks and workshops on disability-led design.

Living with a disability should never mean exclusion from STEM, becoming a scientist or being creative.

We believe that science should be open to everyone, regardless of background or experience. There are persistent structural barriers to equality in many areas of UK

society, culture and work, and we believe that transforming the diversity and inclusivity of science can play a part in tackling them.

Read the text. Determine the genre and style of the text.

- *Analyze the text at the lexical, grammatical, and syntactic levels.*
- *What is the main idea of the text?*
- *What is the target audience of the text?*
- *Prove your assumptions with specific examples.*

DISABLED PEOPLE CAN BE PRODUCTIVE WORKERS, BUT THAT SHOULDN'T DETERMINE OUR WORTH

by Alaina Leary

As a disabled person, I have spent my entire working life trying to unlearn the idea that I'm not a productive or efficient worker because of my disability. I've also overcompensated for this concern in myriad ways, taking on extra unpaid work at jobs or having multiple side hustles to make sure that my resume shows that I go above and beyond. During the interview process, I often either hide or downplay my disability and any necessary accommodations, fearful of discrimination. I feel like I need to be at least twice as hardworking, skilled, and educated as a nondisabled person to get a job, keep it, and continue to get promoted.

Disabled people can be incredibly productive, talented, and capable workers, and our work has worth and value, despite ableist, capitalist ways of thinking that tell us otherwise. "Who really has the right to put a price on what someone's value is?" asks Joel Hernandez, a gay disabled Latinx who is a senior manager of talent acquisition at a national nonprofit. "A person with a disability… might need accommodations, but that doesn't equate to being unproductive or unable to work." Any healthy, compassionate workplace needs to be flexible to meet the varied needs of all employees, whether they have a disability or not.

But we must also challenge the idea that someone's ability to participate in paid labor is more meaningful than other forms of work. As Dessa Cosma, the Executive Director of Detroit Disability Power, who is also a wheelchair user and a little person, asserts, "By making paid labor the only kind of real value, we're not only playing into historical and current systems of oppression that devalues certain types of labor, we're also devaluing all of the lovely things that humans do without getting paid. What does that mean for love and friendship and volunteering?"

Notions about disability and productivity have a very real impact. Earlier in my career at a previous workplace, I used to answer emails 24/7—even at night, on weekends, and on holidays—because I was worried that if I wasn't constantly working hard, I might be fired because I'm disabled. Disabled people who can't or don't work a traditional job or who might need to work part-time because of their disability can also be harmed by society's perspectives on productivity. Consider, for instance, the circumstances of Nicole Zimmerer, who has a master's degree but is unemployed and receives Supplemental Security Income and Social Security Disability Insurance benefits. She knows that she can't be employed in the traditional sense because of the income and asset limits for people who receive these benefits, and she needs access to the health insurance that SSI/SSDI provides for disabled people through Medicare. These financial limits are essentially legislated paths to keeping disabled people in poverty.

Because she doesn't work, Nicole has felt that other people devalue her. "My ten-year high school reunion is coming up and I'm probably not going to go," says Zimmerer. "People would be like, 'What do you do?' and I would have to say, 'I'm between jobs right now.'" Zimmerer knows that she can be a productive and creative worker, but she often has to stick up for herself because as a society, we make the assumption that someone isn't valuable if they don't contribute to the workforce through traditional full-time employment. "It's hard to feel like a functioning member of society," she says. When she's asked what she does for work, she says she usually answers the question honestly and feels a change in how people are communicating with her, with pity or judgment. "There's that change when you say that you're not working, because you feel like you're not doing what you're supposed to be doing."

Assumptions that disabled people can't work or are only valuable if they do work are pervasive, including within nonprofits and philanthropies that often claim to hold progressive values.

Ana L. Oliveria, President and CEO of the New York Women's Foundation, who is also disabled, believes that nonprofit and philanthropic organizations have a responsibility to transform their approaches to creating more inclusive workplaces. "The existing concept of accommodations means 'making room' for a certain dimension for people living with disabilities," she says. "We need to transition to changing the reference altogether, from an ableist standard to an inclusive standard—not making accommodations, but instead creating shared definitions of talent that are needed."

Hernandez highlights that organizations must be intentional about creating accessible workplaces. "We don't have to wait until people are in an actual position to name that there is space for people with disabilities or that it's a disability-inclusive workplace," they explain. "One of the things that I was proud of doing in

one of my previous roles was supporting an organization-wide inclusivity audit. In our phone screens, letting candidates know that if they have any access needs to participate in the process, to contact me. We were signaling that people might need an accommodation and that they can participate fully as themselves."

Cosma agrees that nonprofits and foundations need to create people-centered environments. At Detroit Disability Power it's important for employees to feel like they can work in ways that suit them and that they're able to take care of their needs. "We are a four-day-week organization," she shares. "We're living in a really stressful time that is taking a lot out of people. A three-day weekend is massively better for rest and recuperation." Further, Cosma deeply believes that workplaces must ensure flexibility and transparency for their employees, such as options for part-time or remote work, and transparent and consistent staff evaluation systems.

Detroit Disability Power's entire staff are disabled people, which is an intentional choice that Cosma says has cultivated employees who have skills such as "creative problem solving, tenacity, critical thinking, flexibility, adaptation, knowing when to ask for help, pacing ourselves. These are all things that disabled people are required to be highly skilled at just to get through the day."

As Zimmerer reminds us, disabled people are an asset to organizations because they can help make the workplace more accessible. "I honestly believe once you have accessibility for the disabled population, you make the world more accessible for everyone," she says. While the burden should never solely be on disabled people to make the world, or workplaces, more accessible, there's a net benefit for everyone if disabled people are in the room when decisions are made, because we're naturally thinking with access at the forefront.

To truly shift toward more inclusive workplaces, Cosma calls on nonprofits and philanthropies to engage in a thoughtful deconstruction of the ableist ideas we hold about work. Oliveira suggests taking action on this "by creating a working group centered on people living with disabilities to examine the definitions of success, HR practices, institutional incentives and competence to value people living with disabilities, flexibility of positions, work styles" and more. By providing these spaces for conversations about access, workplaces will likely find that their current employees are better able to show up as their entire selves at work, and they'll see a positive impact on the entire organization.

Cosma urges organizations to focus on "creating an environment where people can be their whole selves. When we have to leave any part of ourselves at the door, we can't be as authentic, we can't build as good relationships…We get better employees and we do better work [when we're allowed to be ourselves]."

To be ourselves at work, we must all recognize that our worth is not inherently tied to our productivity or our ability to do paid work. And the work you do is worth just

as much if you need accommodations, flexibility, or support in order to do it. As we look to workplaces of the future, forward-thinking organizations must not only prioritize, but also celebrate and uplift, the ways we all show up.

Alaina Leary is a program manager at We Need Diverse Books and affiliated faculty at Emerson College. Her work has been published in the New York Times, Boston Globe Magazine, Good Housekeeping, Refinery29, Glamour, Teen Vogue, Cosmopolitan, and more. She lives with her wife, three literary cats, and a rainbow bookshelf outside of Boston, MA.

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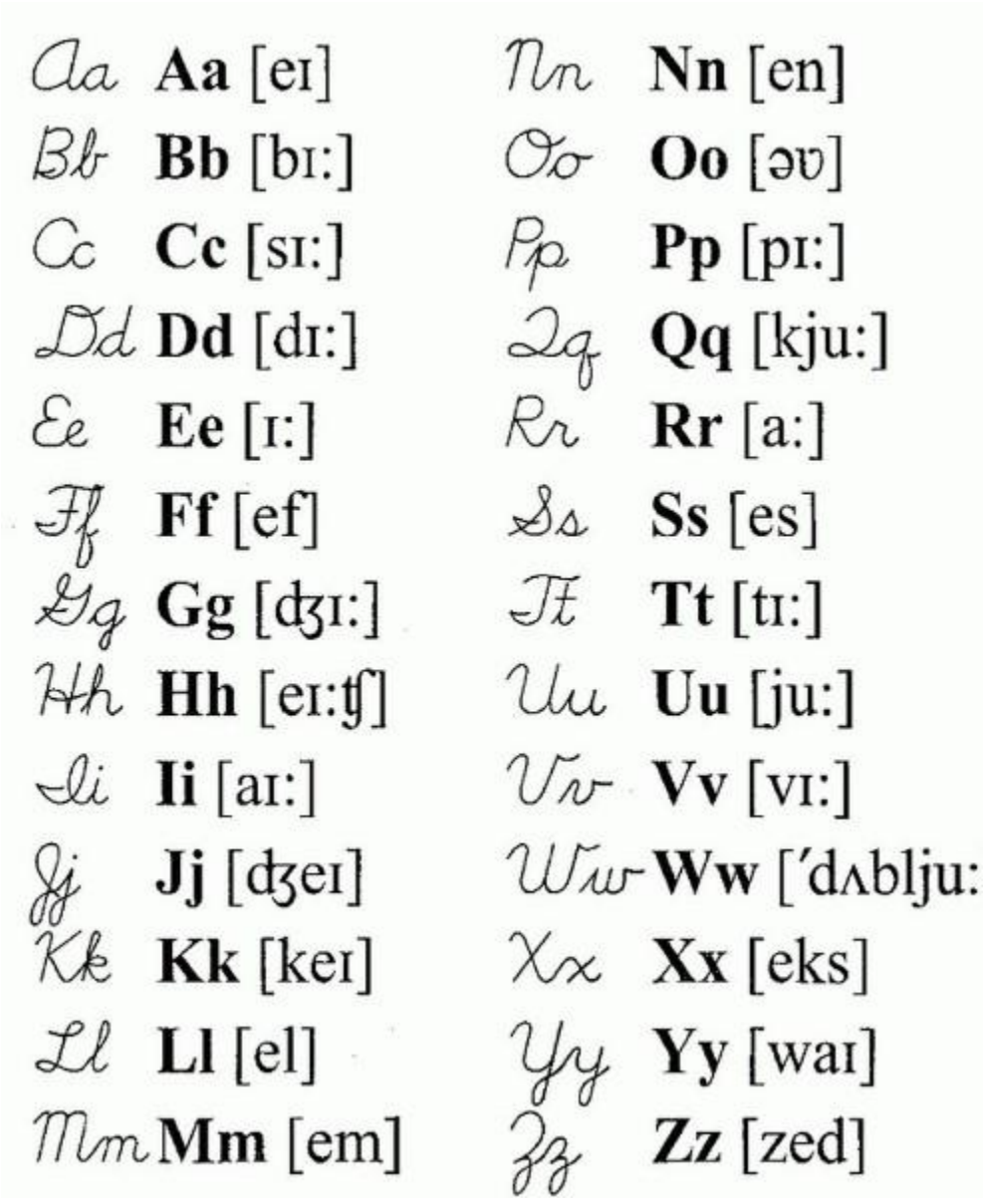

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INCLUSION AND DIVERSITY GLOSSARY

Aa

- **Able-bodied:** Inappropriate term that refers to anyone without a disability, implying that people with disabilities are unable to use their body well.

- **Ableism:** Prejudice and/or discrimination against people with mental and/or physical disabilities.

- **Access:** The power, opportunity, permission, or right to come near or into contact with someone or something. It has been used to characterize the relationship between the disabled body and the physical environment since the middle to late twentieth century. More specifically, it refers to efforts—most prominent in the United States—to reform architecture and technology to address diverse human abilities.

- **Accessible:** Readily usable by a particular individual with or without support, as in the cases of facilities, activities, or electronic resources.

- **Accommodation:** An adjustment to make a program, facility, or resource accessible to a person with a disability.

- **Advocate:** In the disability context, someone who may or may not identify as having a disability but speaks or intercedes for people with disabilities.

- **Afflicted with/Stricken with/Suffers from/Victim of:** Inappropriate terms that carry the assumption that a person with a disability is suffering or has a reduced quality of life.

- **Ally:** Someone belonging to a majority or privileged social group who works against the oppression of disadvantaged groups. An ally does not speak for that group or claim to know what is best for them; instead, they empower those within the community by amplifying their voices and ideas.

- **American Sign Language (ASL):** A means of communication that uses hand gestures to represent letters and words, and the primary sign language used by people with hearing disability in the United States and Canada (devised in part by Thomas Hopkins Gallaudet on the basis of sign language in France).

- **Americans with Disabilities Act (ADA):** United States legislation published in 1990 that prohibits discrimination on the basis of disability in employment, goverment, public accomodations, commerical facilities, transportation, and telecommunications. An individual with a disability is defined under the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment.

- **Applied Behavior Analysis (ABA):** The practice of applying the psychological principles of learning theory in a systematic way to modify behavior. The practice is used most extensively in special education and in the treatment of autism. Despite its prominence, critics contend that the aim to make people "normal" is misguided and that the value of neurodiversity is preferred.

- **Asperger's Syndrome:** Previously considered a distinct form of autism defined by normal IQ and lack of early speech delay. Today, individuals with these traits are diagnosed with autism spectrum disorder. Although it is no longer used in new cases, many people who were originally diagnosed with Asperger's continue to use it as a marker of community and personal identity.

- **Assistive Technology:** Assistive, adaptive and rehabilitative devices for people with disabilities which enable people to perform tasks that they were formerly unable to accomplish, or had great difficulty accomplishing, by enhancing or modifying interactions with the technology needed to accomplish such tasks.

- **Attention Deficit/Hyperactivity Disorder (AD/HD):** A condition that can make it hard for a person to sit still, control behavior and pay attention. Children with AD/HD are sometimes eligible for special education services under IDEA's "other health impairment" disability category.

- **Augmentative and Alternative Communication (AAC):** An integrated system of components used to enhance communication by temporarily or

permanently compensating for the impairment of individuals with communication disabilities.

- **Autism (Medical Model):** A neurological and developmental condition involving a wide range of delays, difficulties, and differences related to social interaction, communication, and restricted or repetitive behaviors.

Bb

- **Behavior Intervention Plan (BIP):** A plan that targets a student's undesirable behaviors with interventions that are linked to the functions of the behavior; each intervention specifically addresses a measurable, clearly-stated targeted behavior. A BIP can include prevention strategies or replacement behaviors.

- **Bias:** A form of prejudice that results from our tendency and needs to classify individuals into categories.

- **Blindness:** The legal status of a person with corrected vision that has a visual acuity of 20/200 or higher, or a range of peripheral vision under 20 degrees.

- **Board-Certified Orthodontist.** An orthodontist who has completed the American Board of Orthodontics Specialty Certification exams. A board-certified orthodontist is known as a Diplomate of the American Board of Orthodontics. The American Board of Orthodontics is the only orthodontic specialty certifying board that is recognized by the American Dental Association. Board certification is voluntary for orthodontists.

- **Braille:** System of printing/writing for people who are blind – consists of raised dots that can be interpreted by touch, each dot or group of dots representing a letter, numeral, or punctuation mark.

- **Brain-Computer Interface (BCI):** A computer-based system that acquires brain signals, analyzes them, and translates them into commands that are relayed to an output device to carry out a desired action.

Cc

- **Cerebral Palsy:** A functional disorder caused by damage to a child's brain during pregnancy, delivery, or shortly after birth. Cerebral Palsy is characterized by one or more movement disorders, such as spasticity (tight limb muscles), purposeless movements, rigidity (severe form of spasticity), or a lack of balance. People with cerebral palsy may also experience seizures, speech, hearing and/or visual impairments, and/or mental retardation.

- **Closed Captioning (CC):** An on-screen system that allows people with a hearing disability to view video with spoken words written across the bottom of the screen.

- **Communication:** The transmission or exchange of information, knowledge or ideas. In recent years, technologies and techniques of communication associated with disability are extending the notion of transmission of information beyond the sense of two people speaking. Disability studies have concerned themselves with forms of alternative and augmentative communication.

- **Communication Disability:** Any visual, hearing, or speech difficulties that limit a person's ability to communicate.

- **Community of Practice:** A pedagogical framework in which the collaboration of educators, paraeducators, parents, therapists, and students form a community for the purpose of accomplishing common goals.

- **Convention on the Rights of Persons with Disabilities (CRPD):** A 2006 human rights treaty adopted by the United Nations intended to protect the rights and dignity of people with disabilities.

- **Curriculum-Based Assessment (CBA):** A continuous assessment that involves periodic monitoring of a student's daily performance and progress through the curriculum.

- **CRISPR:** A gene editing tool that mirrors the way that cells repair damaged DNA. Was first demonstrated in 2013. CRISPR allows scientists to make edits in precise places along a DNA strand. Also known as Clustered Regularly Interspaced Short Palindromic Repeats.

Dd

- **Deafness:** A total or partial inability to hear, which can be genetic or also acquired through disease, most commonly from meningitis in childhood or rubella in a woman during pregnancy.

- **DDS or DMD:** DDS (Doctor of Dental Surgery) and DMD (Doctor of Dental Medicine) are degrees awarded to dental school graduates. Some dental schools award DDS, and some dental schools award DMD. The American Dental Association considers them equivalent degrees. All orthodontists educated in the U.S. or Canada will have either a DDS or DMD after their names. Orthodontists, who are also known as "orthodontic specialists," are required to follow their dental school education with the completion of two to three years of orthodontic specialty education in an accredited orthodontic residency program. This additional education makes orthodontists specialists in the field of orthodontics.

- **Developmental Disability:** A long lasting cognitive disability occurring before age 22 that limits one or more major life activities (self-care, independent living, learning, mobility, etc.), and is likely to continue indefinitely.

- **Diagnostic and Statistical Manual of Mental Disorders (DSM):** Manual published by the American Psychiatric Association offering language and standard criteria for classification of mental disorders. The DSM is used by clinicians, researchers, health insurance companies, pharmaceutical companies,

the legal system, and policy makers. The DSM is in it's 5th edition, published in 2013.

- **Digital Divide:** The gaps in access to information and communications technology (ICT) between individuals, groups, countries and areas. The digital divide affects people with disabilities more than any other group, since they face accessibility problems ranging from a lack of training, physical barriers, the lack of assistive computer technology and inaccessible design.

- **Disability:** The result of the interaction between persons with impairments and attitudinal and environmental barriers. Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which, when in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others.

- **Discrimination:** Act of making a difference in treatment or favor on a basis other than individual merit.

- **Diversity:** Socially, it refers to the wide range of identities, including things like race, ethnicity, gender, age, national origin, religion, disability, sexual orientation, socioeconomic status, education, marital status, language, veteran status, physical appearance, etc. It also involves different ideas, perspectives, and values.
- **Down Syndrome:** A chromosomal condition (trisomy 21) caused by the presence of one extra chromosome, and characterized by delayed physical and

mental development, and often identifiable by certain physical characteristics, such as a round face, slanting eyes, and a small stature.

Ee

- **Epilepsy:** A physical condition that occurs when there is a sudden, brief disturbance in the function of the brain, and alters an individual's consciousness, movements or actions. Most individuals with epilepsy can reduce or eliminate the risk of seizures through the regular use of appropriate medication.

- **Equity:** Fairness and justice that is distinguished from equality: Whereas equality means providing the same to all, equity means recognizing that we do not all start from the same place and must acknowledge and make adjustments to imbalances. The process is ongoing, requiring us to identify and overcome intentional and unintentional barriers arising from bias or systemic structures.

Ff

- **Free Appropriate Public Education (FAPE):** Special education services that are publicly funded, meet state standards, include an appropriate preschool through secondary school in accordance with individualized education programs (IEPs).

- **Functional Model of Disability:** Disability derives from an individual's impairments or deficits that renders them incapable to perform a number of functional activities, such as moving, breathing, working, or living independently. The functional model originates from a legislative context and is reflected in the language of the Social Security Act and Americans with Disabilities Act.

Gg

- **General Education (GE):** Education designed to develop learners' general knowledge, skills, and competencies and literacy and numeracy skills, often to prepare students for more advanced educational programs or to lay the foundation for lifelong learning.

Hh

- **Handicap:** Any obstacle that decreases a person's opportunity for success (e.g., discriminatory practices, inaccessible buildings/public places/transportation, insufficient insurance/training/resources, negative attitudes).

- **Health:** A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

- **Hearing Impairment (HI):** An impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance.

Ii

- **Identity-first Language:** Referring to someone with a disability with their disability placed before their name, in contrast to person-first language. Identity-first language can be preferable when a person embraces their identity, and has gained popularity in specific communities like autistic and deaf people. The best practice is to ask a person how they would like to be referred whenever possible.

- **Impairments:** Any loss or abnormality of psychological, physiological or anatomical structure or function. Disability is created when social or cultural meaning is attached to an impairment and hinders their equal participation in society.

- **Inclusion:** An organizational effort to make different groups or individuals culturally and socially accepted, welcomed, and treated equally.

- **Inclusionism:** An ideology that posits the proper educational context for students with disabilities is the general classroom. Inclusionists argue for inclusion into general education based on social advantages like positive peer modeling and greater achievement in areas like language, behavior, flexibility, friendship relations, and prosocial acts, as well as greater academic achievement. Inclusionism is rooted in the beliefs that diversity is expected and valued, labeling is socially constructed and harmful, and inclusive settings are in the best interest of all students.

- **Inclusive Education:** Educational setting where all students are full and accepted members of their school community, in the same classrooms whenever appropriate.

- **Individualized Education Plan (IEP):** A document detailing the personalized educational goals and supports for students who receive special education services.

- **Individuals with Disabilities Education Act (IDEA):** 1975 act that mandates the provision of a free and appropriate public school education for eligible students ages 3–21.

- **Informed Consent:** The provision of adequate information to allow for a person to make an educated decision about participation in a medical intervention, which may include facilitating the potential subject's understanding of the information and giving them the opportunity to ask questions and consider whether they should voluntarily participate. In the context of presuming competence, health professionals should attempt to obtain informed consent from a person before redirecting themselves to the person's responsible party.

- **Intellectual Disability (ID):** Significantly subaverage general intellectual functioning, existing simultaneously with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance.

- **Intelligence Quotient (IQ):** A standard measure of intelligence considering the ratio between an individual's "mental" age determined by assessments and chronological age. IQ tests have been historically criticized for being racist, sexist, and classist, and should be interpreted with caution.

- **Intersectionality:** A social construct that recognizes the fluid diversity of identities that a person can hold such as gender, race, class, religion, professional status, marital status, socioeconomic status, etc.

Mm

- **Medical Model of Disability:** Disability derives from a disease, trauma, or health condition that impairs or disrupts physiological or cognitive functioning, conceptualized as a condition or deficit that should be cured through treatment or intervention.

- **Meltdown:** A sudden, intense emotional release caused by a buildup of overwhelming anxiety, emotion, or sensory experiences. Meltdowns and tantrums are fundamentally different in that a tantrum is an attempt to manipulate, while a meltdown is outside the person's control.

- **Mental Illness:** An illness or impairment that has significant psychological or behavioral manifestations, is associated with painful or distressing symptoms and impairs an individual's level of functioning in certain areas of life (e.g., Anxiety Disorder, Depression, Bipolar disorder, Obsession-Compulsion, Schizophrenia).

- **Minority:** Literally meaning a smaller number, this term has been defined in the context of 20th century civil rights campaigns as a group of people that are discriminated against in their society. For disability activists and scholars, defining disabled people as a minority group similar to African Americans, women, and others has been a means to claim civil rights protections, define a more cohesive and empowered group identity, counter the medical model of disability, and advance the scholarship and academic legitimacy of disability studies.

Mobility Impairment: An impairment in movement ranging from gross motor skills such as walking to fine motor movement involving manipulation of objects by hand.

- **Multiple Disabilities:** Having two or more disabilities, such as being blind and deaf simultaneously.

- **Multi-Tiered System of Support (MTSS):** An integrated, comprehensive educational framework that focuses on state standards, core instruction, differentiation, and the alignment of systems necessary for students' academic, behavioral, and social success.

Nn

- **Neurodiversity:** The concept that conditions such as autism, ADHD, and dyslexia are not the signs of a defective brain but the result of natural variation in the human genome. Atypical thinking styles are recognized as valuable sources of insight, creativity and innovation.

Oo

- **Obsessive-Compulsive Disorder (OCD):** An anxiety disorder that presents itself as recurrent, persistent obsessions or compulsions. Obsessions are intrusive ideas, thoughts or images while compulsions are repetitive behaviours or mental acts that person feels they must perform.

- **Occupational Therapist (OT):** A professional who treats patients with injuries, illnesses or disabilities through the therapeutic use of everyday activities. They help these patients develop, recover and improve the skills needed for daily living and working.

- **Oppositional Defiant Disorder (ODD):** A psychological condition presenting itself as an ongoing pattern of disobedient, hostile, defiant and deliberately subversive behaviour toward authority figures / systems of authority which goes beyond the bounds of normal childhood behaviour.

- **Optical Character Recognition (OCR):** The mechanical or electronic conversion of images of typewritten or printed text into machine-encoded text.

- **Objectives of Orthodontic Treatment**
- Aesthetic Improvement: Correcting crooked, misaligned, or irregular teeth.
- Improved Chewing Function: Addressing jaw misalignments to ensure proper chewing of food.

- Preservation of Dental Health: Misaligned teeth are harder to clean, increasing the risk of tooth decay and gum disease. Orthodontic treatment reduces these risks.
- Correction of Speech Problems: Jaw structure or tooth alignment issues can lead to certain speech difficulties.

Pp

- **Paraeducator:** An individual who provides instructional or related support to students under the direction and supervision of a certified teacher. In the last two decades, the roles and responsibilities of paraeducators in inclusive schools have reached new levels of importance due to higher expectations for students, an increased focus on inclusive practices, and attention to closing the achievement gap.

- **Paralysis:** Condition involving loss of sensation or of muscle function.

- **Person-first Language:** Referring to someone with a disability with their disability placed after their name, in contrast to identity-first language. Person-first language is popular because it reduces unnecessary focus on a person's disability and avoids dehumanizing terms like schizophrenic, paraplegic, spastic, or vegetable. The best practice is to ask a person how they would like to be referred whenever possible.

- **Physical Disability:** One or more physical impairments that substantially limit one or more major life activities (e.g., seeing, hearing, speaking, walking, breathing, performing manual tasks, learning, or caring for oneself).

- **Physical Therapist (PT):** Professionals who help people who have injuries or illnesses improve their movement and manage their pain. They are often an important part of rehabilitation and treatment of patients with chronic conditions or injuries.

- **Picture Exchange Communication System (PECS):** A type of augmentative alternative communication (AAC) originally developed for children with autism. The primary purpose of PECS is to teach individuals with autism to initiate communication. Individuals are taught to initiate by handing a picture to a communication partner in exchange for a desired item.

- **Positive Behavioral Interventions and Supports (PBIS):** An evidence-based three-tiered framework for improving and integrating all of the data, systems, and practices affecting student outcomes every day. Researched outcomes include improved academic performance, social-emotional competence, and teacher efficacy, and reduced bullying behaviors, drug abuse, and exclusionary discipline.

- **Privilege:** Exclusive access or availability to material and immaterial resources based on the membership to a dominant social group.

- **Prosthesis:** An artificial device used to replace a missing body part, such as a limb, tooth, eye or heart valve.

Qq

- **Quality of Life (QoL):** An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns.

Rr

- **Rehabilitation:** A process that enables persons with disabilities to interact with their environments and maintain optimal physical, sensory, intellectual, psychological, and social function levels. In common usage, rehabilitation provides persons with disabilities the tools they need to attain independence and self-determination.

- **Response to intervention (RTI):** A process used by educators to help students who are struggling with a skill or lesson. Teachers use interventions for any student that needs support to succeed in a classroom. The RTI framework is generally thought of as a three tiered pyramid with varying levels of support.

Ss

- **Section 504:** Part of the Rehabilitation Act of 1973 which states that organizations that receive federal funding are legally obligated to provide students with disabilities equal benefits, services, and opportunities.

- **Self Advocacy:** The ability to communicate with others to acquire information and to recruit help in meeting personal needs and goals.

- **Social Model of Disability:** Disability derives from focusing on the barriers people face interacting with their social, physical, economic, and political environments, conceptualizing disability as a social construct wherein people with certain impairments are perceived as different or abnormal.

- **Social Security Disability Insurance (SSDI):** A government program that provides assistance in the United States to people with disabilities. To qualify for benefits, individuals or their family members must be "insured" by working long enough, recently enough, and paid social security taxes on their earnings.

- **Special Education:** Specially designed instruction, at no cost to the parents, to meet the unique needs of a child with a disability, including instruction in the classroom, home, hospitals and institutions, and other settings, as well as physical education, speech-language pathology services, travel training, and vocational education.

- **Speech Generating Device (SGD):** Technology that provides an individual who has a severe speech impairment with the ability to meet his or her functional, speaking needs through digitized speech using pre recorded messages or synthesized speech output.

- **Speech-Language Pathologist (SLP):** Also known as a speech therapist, a professional who diagnoses and treats communication and swallowing disorders.

- **Stigma:** The disapproval and disadvantage that is attached to people who are seen as different, often contributing to the transformation of impairment into disability. Stigma affects employment, social recognition, educational opportunities, friendship and sex, housing, and freedom from violence. Stigma in Greek means to prick or to puncture, and the word originally referred to a sharp instrument used to brand or cut slaves or criminals. Today, the term is more abstract and refers to social forms of stigma—the discredit or dishonor that attaches to a wide range of human variation.

- **Stimming:** Repetitive sounds, words, or movements (i.e., spinning, rocking, humming) that create sensory input as a means of self-soothing.

- **Student Learning Overview (SLO):** Individualized educational reports similar to an IEP that includes grades, present levels, state standards, updates from specialists, and goals. SLOs are updated three times a year, once a quarter.

- **Supplemental Security Income (SSI):** A government program that provides assistance in the United States to adults and children with disabilities who have limited income or resources.

- **Support Needs:** A psychological construct referring to the pattern and intensity of support necessary for a person to participate in activities linked with normative human functioning. The intensity of support is often categorized into “high” and “low” support needs.

- **Sustainability:** The ability to maintain conditions most often referring to the environment but also to economic, social or public health systems.

Tt

- **Teacher Efficacy:** A teacher's beliefs in their capacity to positively influence student learning and achievement.
-

- **Theory of Mind (ToM):** The ability to attribute mental states, beliefs, intents, desires, and knowledge to oneself and others. It is about understanding that others have beliefs, desires, and intentions that are different from one's own.

- **Tokenism:** Presence without meaningful participation. For example, a superficial invitation for the participation of members of a certain socially oppressed group, who are expected to speak for the whole group without giving this person a real opportunity to speak for themselves.

- **Tourette Syndrome:** A genetic, neurological disorder characterized by repetitious, involuntary body movements and uncontrollable vocal sounds.

- **Traditionalism:** An ideology that posits the proper social and academic educational context for students with disabilities is the special education classroom. Traditionalists argue for special education because of elements like small class size, specially trained teachers, auxiliary services, functional skills curricula, and individualized instructional materials and procedures. Traditionalism is rooted in the beliefs that diversity is problematic, labels are

objective and fair, and that students with disabilities best learn through specialized instruction that can't occur in a general classroom.

- **Traumatic Brain Injury (TBI):** An acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability and/or psychosocial impairment, that adversely affects a child's educational performance.

Uu

- **United Nations (UN):** An international organization founded in 1945 after World War II by 51 countries committed to maintaining international peace and security, developing friendly relations among nations and promoting social progress, better living standards and human rights.

- **Universal Design:** The design and composition of environments, products, and services so that they can be accessed, understood, and fully used by all people regardless of characteristics like age, size, or ability.

- **Universal Design for Learning (UDL):** The design of instructional materials and activities that make learning achievable by students with a wide variety of abilities and disabilities.

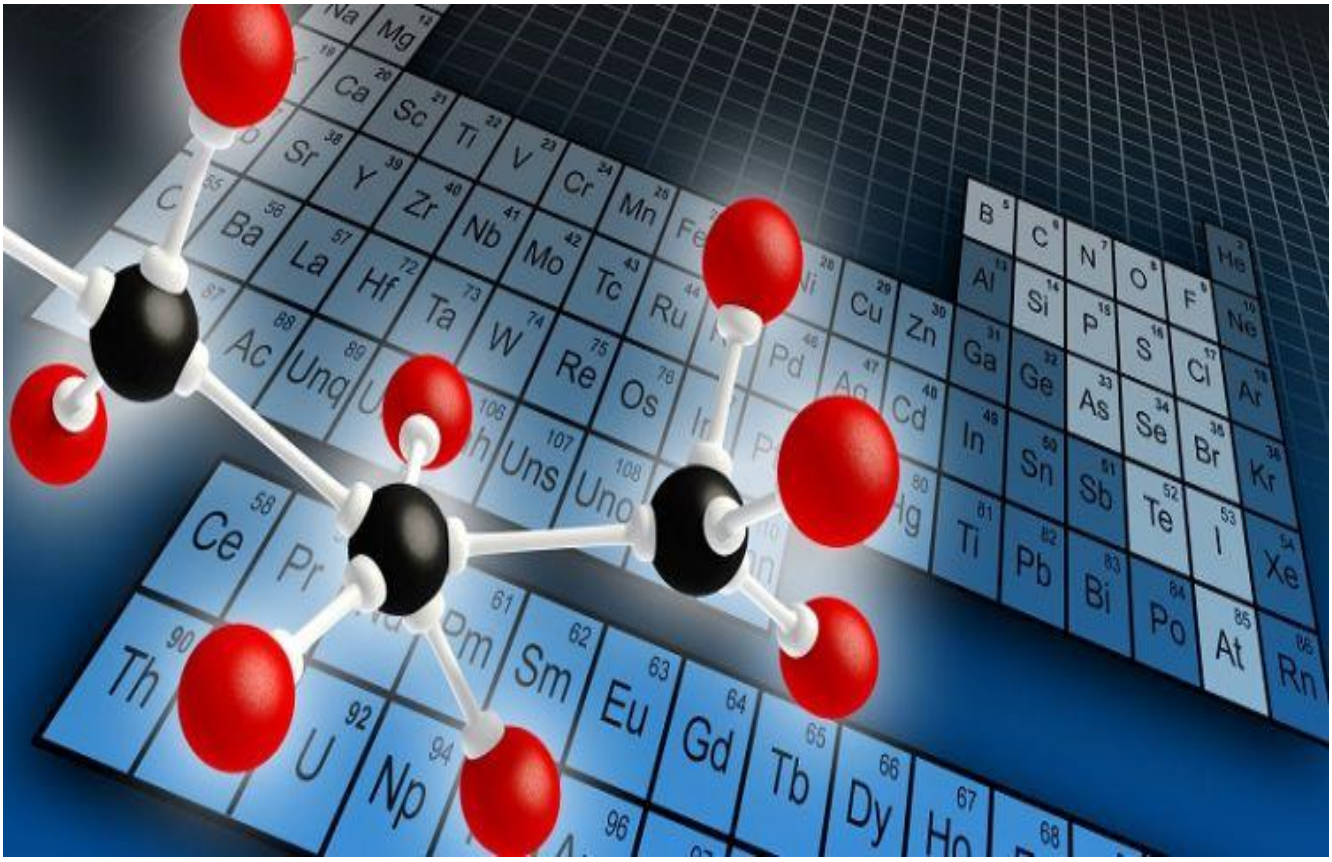
Vv

- **Visual Impairment (VI):** An impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

Ww

- **World Health Organization (WHO):** An agency of the United Nations responsible for international public health. Founded in 1948, WHO's objective is the attainment by all peoples of the highest possible level of health.

INCLUSIVE BIOTECHNOLOGY AND CHEMISTRY GLOSSARY



Bb

- **Biotechnology (or Biotech)**

Biotechnology (or Biotech) has evolved to include an array of complicated processes that utilize the natural systems found in living things. The resulting technologies are then applied to a wide range of purposes, including for the environment and health care as well as food production and food safety. For example, biotech tools called Marker Assisted Selection can provide the DNA sequence of specific traits in animals or crops without changing their DNA. Biotechnology has supported the creation of non-soil (hydroponic) methods to grow vegetables. However some have used the word "Biotech" interchangeably with "GMO", "Genetically Engineered" and "Bioengineered" to mean seeds or animals that have been changed to include DNA from another species.

To further confuse things, various organizations have created their own standards for what qualifies as GMO or for non-GMO. The criteria are varied and sometimes self-serving for the locality or industry involved. That's why, in 2016, Congress passed a law requiring a uniform nation-wide standard for disclosure (labeling) of "Bioengineered" foods. We've created the following guidance to help food retailers better respond as customers ask questions about product labels or see news reports on the topic.

- **Bioengineering/Bioengineered Food**

A mandatory labeling claim to be used on many foods and dietary supplements with at least one ingredient that has measurable DNA from another species. The law, to be implemented by 2022, does not include food made from animals that have either been fed or treated with bioengineered products. Nor does it require labeling of foods that

are so highly refined that no measurable DNA is present. See also “Derived from Bioengineering.”

Cc

- **Chromosome**

A strand of DNA stored in cells that can replicate itself and divide when each cell divides for growth or repair. Humans have 23 chromosomes in our genome which contains the genetic blueprint for every cell in our bodies.

- **CRISPR**

A gene editing tool that mirrors the way that cells repair damaged DNA. Was first demonstrated in 2013. CRISPR allows scientists to make edits in precise places along a DNA strand. Also known as Clustered Regularly Interspaced Short Palindromic Repeats.

- **Cross-Breeding**

Deliberately inter-breeding (crossing) related individuals to produce new varieties. For example, Pluots are the result of cross-breeding apricots with plums. Multiple generations of back-crossing are needed to obtain the desired traits with any unintended traits removed. Also called conventional, traditional or selective breeding.

Dd

- **Deoxyribonucleic Acid (DNA)**

Is a double stranded molecule that holds genetic codes and is found in all living things. DNA forms the genes that provide inherited traits. It tells cells what proteins to make for growth and metabolism.

- **Derived from Bioengineering**

A food labeling claim used voluntarily on any food or dietary supplement that does not contain DNA from another species. However, at least one ingredient in the product was made through bioengineering. Examples include dairy products from cattle treated with a bioengineered hormone (rBST) to enhance milk production or meats from animals that were fed bioengineered crops like corn, soybeans or alfalfa. This claim could also be used on products that are so highly refined that no DNA is present. Examples could include refined corn, soybean and canola oils.

Ee

- **Enzyme**

Are vital proteins that speed up the chemical reactions taking place within cells. For example, they aid in digestion, metabolism and immune function.

Gg

- **Gene**

The most basic unit of heredity. Includes a segment of a DNA strand that is able to direct a specific function in the body.

- **Gene Editing**

Involved in food production as a breeding method to improve both plants and animals. Also promising as a bio-medical tool to address inherited diseases. It starts with a clear understanding of the genetic sequence and DNA location of selected traits. Uses an enzyme system to precisely edit (turn on, turn off or add to) the DNA. Gene Editing typically does not add DNA from another species but rather works with traits that are already found in a given species, therefore labeling is not usually required.

- **Genetic Engineering**

Involves direct manipulation of the genetic material of a living thing, for example, creating a bacteria to produce human insulin and other medications. Includes a number of different technologies including Recombinant DNA (GMO) and Gene Editing. Can be used to insert genes or knock them out, either randomly or to a specific part of the genome. This term had previously been used interchangeably with Biotech or GMO. However, it is not currently a regulated food labeling term, like "Bioengineered".

- **Genetic Trait**

Characteristics of a plant or animal that are encoded within their genome and thereby inherited from generation to generation.

- **Genome**

The complete genetic blueprint of a living thing, containing all of its genes and DNA. Genome Editing

- **GMO (Genetically Modified Organism)**

A plant, animal or microorganism with new or enhanced genetic traits. A DNA sequence from another living thing, often from a different species, is introduced into the genome. Also referred to as Recombinant DNA technology, Gene Spliced, Genetic Engineered or Transgenic. See “Bioengineered” for mandatory labeling info.

Ii

- **Inclusive chemistry**

Ensures that chemical education, laboratory spaces, and scientific research are accessible, safe, and welcoming for everyone—including people with disabilities, neurodivergent learners, and historically underrepresented groups. It combines physical accessibility, adaptive tools, and flexible teaching methods.

Mm

- **Mutagen**

Substances such as radiation or chemicals that can create random changes in the genetic material of living things.

- **Mutagenesis**

A biotech tool used by plant breeders for over 75 years. NOT considered genetic engineering or bioengineering. Seeds are treated with mutagens such as ionizing radiation or strong chemicals to induce random mutations to their genetic material, aiming for a desired trait. Examples include seedless watermelon and ruby red grapefruit. Currently allowed in both conventional and organic agriculture.

Nn

- **Non-GMO**

A voluntary labeling claim promoted by a group of food companies in 2009 when they formed the Non-GMO Project Verified. Requires a paper trail of affidavits to determine that ingredients in food products have not in any way been bioengineered or fed/treated with bioengineered substances. The absence of bioengineered disclosure does not mean that a product can be labeled as non-GMO. That's because bioengineered disclosure is only required when DNA from another species is present. Many non-GMO ingredients contain no measurable DNA even though they were made from or fed bioengineered crops.

Pp

- **Polyploidy**

Both wild and cultivated plants can have entire extra sets of chromosomes. Polyploidy (such as triploid and diploid) has been a major tool for plant breeders using traditional breeding techniques over the past century. NOT considered bioengineering. Plants with polyploidy can outperform relatives in several aspects. Hybrid corn can be an example.

- **Protoplast Fusion (Somatic Fusion)**

A type of genetic engineering where cells or cellular components from two different living things are combined. Able to transfer traits between species and potentially create an entirely different variety of plant. Currently allowed in both conventional and organic agriculture. One example: Triticale, a grain first made from fusing wheat with rye in the 1950s.

Rr

- **RNA**

Ribonucleic acid (RNA) is present in all living cells and acts as a messenger to translate instructions from DNA in order to make various proteins.

Ss

- **Species**

A group of living organisms that are capable of sharing genetic information through breeding (ie, they are sexually compatible)

- **Sustainability**

The ability to maintain conditions most often referring to the environment but also to economic, social or public health systems.

Tt

- **Transgenesis**

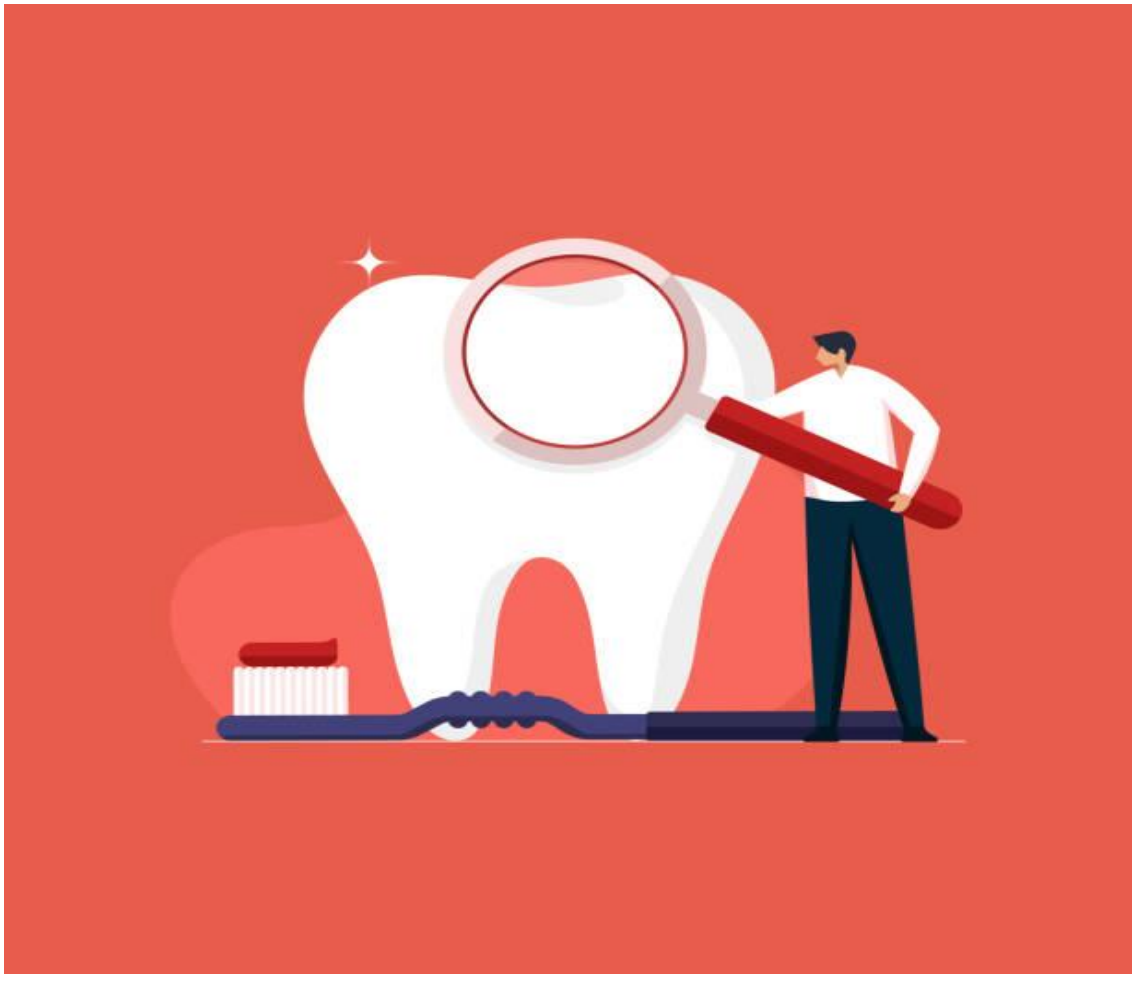
Involves addition of genetic material (DNA) from another species to create a new variety of plant or animal with desired traits. Also known as a GMO. Bioengineered labeling will be required in most food products that contain transgenic DNA.

Uu

- **USDA Certified Organic**

Does not allow several production methods common to modern agriculture. Organic products cannot be bioengineered, irradiated or be produced with antibiotics or certain pesticides. Nor can animals be fed bioengineered crops or be treated with medications produced through bioengineering. Other biotech methods, such as Mutagenesis, Marker Assisted Selection, Gene Editing, Hydroponics, Polyploidy and Protoplast Fusion have not yet been excluded from Certified Organic, however they are current topics of debate among organic stakeholders.

ENGLISH FOR INCLUSIVE DENTISTRY



Aa

- **Active Treatment**

The stage of orthodontic treatment is when teeth are being moved and/or jaws aligned.

- **Advanced periodontitis**

The most severe form of gum (periodontal) disease. It is a chronic infection of the gums caused by accumulation of plaque under the gum line. The plaque contains bacteria that produce toxins that destroy the soft tissue and bone that hold teeth in place. Pockets (spaces between the gum and the teeth) appear and deepen. Gums recede, and bone dissolves. Teeth can become loose and may have to be removed.

- **Aligners**

Clear, thin, removable trays that are formed to fit an individual's teeth and are used to straighten teeth. Patients are responsible for insertion and removal.

- **American Association of Orthodontists (AAO)**

The AAO is a professional association of educationally qualified orthodontic specialists who create healthy, beautiful smiles for their patients. The AAO only admits orthodontists as members. Orthodontists first graduate from dental school and then complete an additional two to three years of education in the orthodontic specialty at accredited orthodontic residency programs. Selecting an AAO member for orthodontic care is your assurance that the doctor is an orthodontist.

- **Anterior**

Front.

- **Appliances**

Any device used by an orthodontist, attached to the teeth or removable, designed to move the teeth, change the position of the jaw, or hold the teeth.

- **Arch**

Upper or lower jaw. The “dental arch.”

- **Archwire**

The metal wire that is attached to the braces and used to move the teeth.

- **Attachments**

The tooth-colored “bumps” are placed on teeth during clear aligner treatment. They help move the teeth while a patient wears aligners. They are removed once treatment is complete.

Bb

- **Band**

A metal ring, usually on a back tooth, that is cemented to a tooth for strength and anchorage.

- **Bite**

How top and bottom teeth come together. Ideally, each tooth meets its opposite tooth in a way that promotes functions such as biting, chewing and speaking. A bad bite is called a malocclusion. The goal of orthodontic treatment is to create an individualized healthy bite (ability to bite, chew, speak). Additionally, when teeth and jaws are in proper positions, it creates a pleasing appearance.

- **Blue Grass Appliance**

Used to help in the correction of a tongue thrust. Helps the patient retrain the tongue when swallowing, and can help correct an open bite.

- **Board-Certified Orthodontist**

An orthodontist who has completed the American Board of Orthodontics Specialty Certification exams. A board-certified orthodontist is known as a Diplomate of the American Board of Orthodontics. The American Board of Orthodontics is the only orthodontic specialty certifying board that is recognized by the American Dental Association. Board certification is voluntary for orthodontists.

- **Braces**

A word commonly used to describe a fixed orthodontic appliance, usually consisting of brackets, bands and wires.

- **Bracket**

The small metal, ceramic, or plastic attachment is bonded to each tooth with a tooth-colored adhesive. The bracket has a slot that the orthodontic wire fits into. Also known as a "brace."

- **Bridge**

A replacement for a missing natural tooth/teeth that fills the opening between adjacent teeth. Most often, the existing adjacent teeth receive crowns and a prosthetic (false) tooth is attached to the crowns. This restores function, provides a good appearance, and maintains the shape of the face. Bridges do not last forever, eventually this will require replacement.

- **Brushing**

Brushing the teeth is part of an individual's daily home dental care. Patients with braces should follow the orthodontist's instruction on how often to brush.

- **Bruxism**

Grinding of the teeth, usually during sleep. Bruxism can cause abnormal tooth wear and may lead to pain in the jaw joints, facial and/or neck muscles and difficulty opening and closing the mouth.

- **Buccal**

A term orthodontists use to describe the cheek side of the back teeth in both jaws

.

- **Buccal Tube**

A small metal part of the bracket is welded to the cheek side of the molar band. The tube may hold an archwire, lip bumper, headgear, facebow or other type of appliance an orthodontist may use to move the teeth.

Cc

- **Cephalometric Radiograph**

A side view x-ray of the head.

- **Chain**

A stretchable series of elastic o-rings connected together and placed around each bracket to hold the archwire in place and close the spaces between teeth. Also known as a “power chain.”

- **Class I Malocclusion**

A malocclusion in which the back molars meet properly, but the front teeth may appear to be crowded together or spaced apart. There may be an overbite, an openbite, a posterior (back) crossbite or an anterior (front) crossbite with a Class I Malocclusion.

- **Class II Malocclusion**

A malocclusion the lower teeth and/or jaw is positioned back relative to the upper teeth and/or jaw. This results the upper front teeth protruding forward.

- **Class III Malocclusion**

A malocclusion where the lower teeth and/or jaw is positioned ahead relative to the upper teeth and/or jaw.

- **Closed Bite/Deep Bite**

Also known as deep overbite, this occurs when the upper front teeth overlap the bottom front teeth an excessive amount.

- **Comprehensive Treatment**

Complete orthodontic treatment is performed to correct a malocclusion.

- **Cone Beam CT/CBCT**

A 3D x-ray.

- **Congenitally Missing Teeth**

A genetic occurrence in which permanent teeth do not develop.

- **Crossbite**

Upper back teeth are in crossbite if they erupt and contact inside or outside of the lower back teeth. Lower front teeth are in crossbite if they erupt in front of the upper front teeth. A crossbite can be a single tooth or groups of teeth.

- **Crown**

The part of the tooth that is visible above the gums; OR, A tooth restoration placed by a dentist. A crown restoration covers a tooth that may have had severe decay, was badly discolored, or was broken or otherwise misshapen. The crown covers the entire tooth and functions as a replacement for the natural tooth. Crowns placed by dentists can last for many years, but they are not permanent.

Dd

- **DDS or DMD**

DDS (Doctor of Dental Surgery) and DMD (Doctor of Dental Medicine) are degrees awarded to dental school graduates. Some dental schools award DDS, and some dental schools award DMD. The American Dental Association considers them equivalent degrees. All orthodontists educated in the U.S. or Canada will have either a DDS or DMD after their names. Orthodontists, who are also known as “orthodontic specialists,” are required to follow their dental school education with the completion of two to three years of orthodontic specialty education in an accredited orthodontic residency program. This additional education makes orthodontists specialists in the field of orthodontics.

- **Decalcification**

White marks on the teeth that can become cavities in the future. They are caused by poor brushing, and the consumption of sugary and acidic drinks.

- **Dentist**

Practicing general dentists are healthcare professionals concerned with overall oral health. Dentists diagnose oral diseases, treat decayed teeth (fillings) and remove failed teeth (extractions). They usually provide services such as crowns, veneers or bonding to improve the appearance and function of teeth that have extensive decay, or are misshapen or broken. Dentists look for abnormalities in the mouth and teach patients how to prevent dental disease.

- **Diagnostic Records**

The materials and information that the orthodontist needs to properly diagnose a malocclusion and plan a patient's treatment. Diagnostic records may include a thorough patient health history, a visual examination of the teeth and supporting structures, an electronic scan or plaster models of the teeth, extraoral and intraoral photographs, as well as a panoramic and cephalometric x-rays.

Ee

- **Ectopic Eruption**

Term used to describe a tooth or teeth that erupt in an abnormal position.

- **Elastics**

Rubber bands. During certain stages of treatment, small elastics or rubber bands are worn to provide individual tooth movement or jaw alignment.

- **Enamel**

The hard, white outer layer of a tooth, and the hardest substance in the human body. Enamel makes it possible to bite and chew. If enamel breaks away from a tooth, or is worn away due to abnormal forces generated by a bad bite (or malocclusion), it is gone forever. Enamel does not regenerate.

- **Eruption**

The process by which teeth enter into the mouth.

- **Essix Retainer**

A removable retainer made of a clear, plastic-like material.

- **Expander**

An orthodontic appliance that can widen the jaws.

- **Extraction**

The removal of a tooth.

- **Extraoral Photographs**

Photographs taken of the face from the front and side views.

Ff

- **Facebow**

An orthodontic appliance worn with orthodontic headgear, used primarily to move the upper first molars back, creating room for crowded or protrusive front teeth. The facebow has an internal wire bow and an external wire bow.

- **Fiberotomy**

A surgical procedure designed to cut part of the gum tissue around teeth, usually performed to reduce the chance of relapse or post-orthodontic tooth movement.

- **Fixed Appliances**

An orthodontic appliance that is bonded or cemented to the teeth and cannot be or should not be removed by the patient.

- **Flossing**

An important part of daily home dental care. Flossing removes plaque and food debris from between the teeth, brackets and wires. Flossing keeps teeth and gums clean and healthy during orthodontic treatment.

- **Forsus Spring**

An orthodontic appliance made of a fixed spring mechanism that moves the lower jaw forward, usually to correct an overjet (protruding upper teeth). It can also be used as an anchor for other types of movements.

- **Frenum**

The tissue attachment between the lip and the tongue or the lip and the upper jaw. A large frenum can cause spacing between the front teeth or cause the tongue to be "tied." A large frenum can also cause the gum tissue on the lower front teeth to be pulled down.

- **Frenectomy**

The surgical removal or repositioning of the frenum.

- **Function**

Refers to biting, chewing and speaking. Teeth and jaws in their correct positions facilitate proper function.

- **Functional Appliances**

A type of orthodontic appliance that uses jaw movement and muscle action to place selective force on the teeth and jaws. They are usually removable. They are also known as orthopedic appliances with names such as orthopedic corrector, activator, bionator, Frankel, Herbst or twin block appliances.

Gg

- **Gingiva**

Soft tissue around the teeth, also known as the gums.

- **Gingivitis**

The mildest type of gum (periodontal) disease, usually caused by poor dental hygiene that allows a build-up of plaque and subsequent inflammation in the gums . Symptoms include red and/or swollen gums, and bleeding when you brush or floss. Gingivitis can be reversed with professional treatment and good dental care at home. If left untreated it may progress to periodontitis.

- **Growth Modification**

Placing braces or appliances to help modify and correct the growth of the jaws and teeth.

- **Gum disease**

Another name for periodontitis. A chronic infection of the gums that stems from a build-up of plaque (link to glossary). Also called periodontal disease. Untreated gum disease can lead to tooth loss. Patients having orthodontic treatment need to remove plaque frequently by brushing their teeth after meals/snacks and before bed, and by flossing at least once a day. There are three stages of gum disease: gingivitis, periodontitis and advanced periodontitis. Many people are unaware that they have gum disease because there is little or no pain.

- **Gummy Smile**

Showing an excessive amount of gingival (gum) tissue above the front teeth when smiling.

Hh

- **Hawley Retainer**

A removable retainer made of wire and a hard plastic-like material.

- **Headgear**

An appliance worn outside of the mouth to provide traction for growth modification and tooth movement.

- **Herbst Appliance**

This appliance is used to move the lower jaw forward. It can be fixed or removable. When it is fixed, it is cemented to teeth in one or both arches using stainless steel crowns. An expansion screw may be used to widen the upper jaw at the same time.

- **Holding/Lingual Arch**

Bands on the upper or lower molars are connected using a bar behind teeth; used to maintain space.

Ii

- **Impaction**

A tooth that does not erupt into the mouth or only erupts partially is considered impacted.

- **Implant**

An artificial replacement for a missing tooth/teeth. The process involves placing a metal post in the jawbone. A crown is placed on the implant so that the patient is able to bite, chew and speak. Implants can be used to anchor a single tooth or multiple teeth. An orthodontist can create space or hold space open in the mouths of patients who may need implants to achieve good dental function. Dental implants cannot be moved by conventional orthodontic forces.

- **Inclusive dental care**

Means treating all people with respect. It adapts oral health services for patients with physical, cognitive, or sensory disabilities, diverse cultural backgrounds, LGBTQ+ identities, and special healthcare needs. It removes physical, financial, and social barriers to ensure safe, comfortable treatment.

- **Interceptive Treatment**

Orthodontic treatment is performed to intercept or correct a developing problem. Usually performed on younger patients that have a mixture of primary (baby) teeth and permanent teeth. Sometimes called Preventive or Phase I treatment.

- **Intraoral Photographs**

Photographs taken of the inside of the mouth, usually showing the biting surfaces of the teeth and sides of the mouth while biting down.

- **Interproximal Brush**

A tiny brush used to reach between teeth, and between teeth and braces, to remove plaque and food debris.

- **Interproximal Reduction**

Removal of a small amount of enamel from between the teeth to reduce their width. Also known as reproximation, slenderizing, stripping, polishing, enamel reduction or selective reduction.

Ll

- **Labial**

The surface of the teeth in both jaws that faces the lips.

- **Ligating Modules**

A small elastic o-ring, shaped like a donut, used to hold the archwire in the bracket. Also called “o-rings” or “o-ties.”

- **Ligature**

A tiny rubber band, or sometimes a very thin wire, that holds the orthodontic wire in the bracket slot/brace.

- **Lingual**

The tongue side of the teeth in both jaws.

- **Lip Bumper**

An orthodontic appliance used to move the lower molars back and the lower front teeth forward, creating room for crowded front teeth. The lower lip muscles apply pressure to the bumper creating a force that moves the molars back.

- **Lip Incompetence**

The inability to close the lips together at rest, usually due to protrusive front teeth or an excessively long face.

Mm

- **Malocclusion**

Latin for “bad bite.” The term used in orthodontics to describe teeth that do not fit together properly.

- **Mandible**

The lower jaw.

- **MARA Appliance**

A type of functional appliance used to bring the lower jaw forward to correct an overjet.

- **Maxilla**

The upper jaw.

- **Mixed Dentition**

The dental developmental stage in children (approximately ages 6-12) when they have a mix of primary (baby) and permanent teeth.

- **Mouthguard**

A removable device used to protect the teeth and mouth from injury caused by sporting activities. The use of a mouthguard is especially important for orthodontic patients.

Nn

- **Nightguard**

A removable appliance worn at night to help an individual minimize the damage or wear that occurs while clenching or grinding teeth during sleep.

Oo

- **Orthodontic treatments**

Orthodontic treatments are a branch of dentistry aimed at correcting irregularities in the teeth and jaw structure. These treatments help resolve both aesthetic and functional problems. Proper alignment of the teeth is crucial not only for maintaining oral health but also for boosting an individual's self-confidence.

- **Objectives of Orthodontic Treatment**

1. Aesthetic Improvement: Correcting crooked, misaligned, or irregular teeth.
2. Improved Chewing Function: Addressing jaw misalignments to ensure proper chewing of food.
3. Preservation of Dental Health: Misaligned teeth are harder to clean, increasing the risk of tooth decay and gum disease. Orthodontic treatment reduces these risks.
4. Correction of Speech Problems: Jaw structure or tooth alignment issues can lead to certain speech difficulties.

- **Orthodontic Treatment Process**

Orthodontic treatment typically occurs in several stages:

1. Evaluation and Planning: X-rays are taken, dental impressions are made, and a treatment plan is prepared.
2. Treatment Application: Braces or aligners are placed.
3. Follow-Up and Adjustments:** Regular check-ups are conducted throughout the treatment.
4. Post-Treatment: Retainers are used to ensure teeth remain in their correct positions permanently.

- **Advantages of Orthodontic Treatment**

1. A more aesthetic smile.
2. Reduction of pain and discomfort in the jaw and teeth structure.
3. Improved chewing and speech functions.
4. Long-term healthier teeth and gums.

- **Occlusion**

Latin for “bite.” In orthodontics, occlusion describes how the upper and lower teeth meet.

- **Open Bite**

A malocclusion in which teeth do not make contact with each other. With an anterior open bite, the front teeth do not touch when the back teeth are closed together. With a posterior open bite, the back teeth do not touch when the front teeth are closed together.

- **O-ring**

A tiny, o-shaped rubber band that is used as a ligature and holds the archwire to bracket slots. O-rings come in a variety of colors, and are generally changed at each adjustment appointment.

- **Orthodontics**

The specialty area of dentistry concerned with the diagnosis, supervision, guidance and correction of malocclusions. The formal name of the specialty is orthodontics and dentofacial orthopedics.

- **Orthodontist**

A specialist in the diagnosis, prevention and treatment of dental and facial irregularities. Orthodontists are required to complete college requirements, graduate from an accredited dental school and then successfully complete a minimum of two years of full-time study at an accredited orthodontic residency program. Only those who have completed this education may call themselves "orthodontists." Orthodontists limit their scope of practice to orthodontic treatment. Only orthodontists may be members of the American Association of Orthodontists (AAO).

- **Orthognathic surgery**

Also called surgical orthodontics, orthognathic surgery is corrective jaw surgery performed to remedy skeletal problems that affect the ability to bite, chew and speak. Orthodontic treatment is done before and after surgery so that upper and lower teeth meet appropriately.

- **Orthopedic Appliance**

A removable functional appliance designed to guide the growth of the jaws and face.

- **Overbite**

The upper front teeth excessively overlap the bottom front teeth when back teeth are closed. Also called a closed bite or deep bite.

- **Overjet**

The upper front teeth protrude in front of the bottom front teeth when back teeth are closed. Sometimes called buck teeth.

Pp

- **Panoramic Radiograph**

An x-ray that shows all the teeth and both jaws at once.

- **Palatal Expander**

A fixed or removable orthodontic appliance used to make the upper jaw wider.

- **Periodontal Disease**

A chronic infection of the gums and jaw bones that stems from a build-up of plaque; many times there is little or no pain. Untreated periodontal disease can lead to tooth loss. There are three stages of periodontal disease: gingivitis, periodontitis and advanced periodontitis.

- **Periodontal Tissue**

Refers to the hard and soft tissue, or supporting structures, around the teeth.

- **Periodontitis**

A more serious form of gum (periodontal) disease as compared to gingivitis. It is a chronic infection caused by an accumulation of plaque under the gum line. The bacteria in plaque produce toxins that lead to destruction of the soft tissue and bone that hold teeth in place. Pockets (spaces between the gum and the teeth) form. Unless

treated professionally in conjunction with careful home care, the disease process will continue to break down tissues.

- **Phase One (Phase I) Treatment**

Orthodontic treatment performed to intercept or correct a developing problem. Usually performed on younger patients that have a mixture of primary (baby) teeth and permanent teeth. Sometimes called Preventive or Interceptive treatment.

- **Plaque**

Plaque is a colorless, sticky film which is a mixture of bacteria, food particles and saliva that constantly forms in the mouth. Plaque combines with sugars to form an acid that endangers teeth and gums. Plaque causes cavities, white marks (decalcification) and gum disease. Plaque is removed by brushing and flossing.

- **Posterior**

Back.

- **Power chain**

Interconnected elastic ligatures that are stretched across multiple teeth, holding the archwire to bracket slots. Orthodontists use power chains for some patients during specific times during their treatment to apply additional forces to move teeth.

- **Preventive Treatment**

Orthodontic treatment to prevent or reduce the severity of a developing malocclusion (bad bite). Also called Interceptive or Phase I treatment.

- **Primary Teeth**

Baby teeth. Also called deciduous or milk teeth.

Rr

- **Radiograph**

Also called an x-ray, a radiograph is a diagnostic tool that is used to see inside the body. Orthodontists take panoramic radiographs to see a complete horizontal image of a patient's upper and lower teeth. A cephalometric radiograph is a side view of a patient's head.

- **Removable Appliance**

An orthodontic appliance that can be removed from the mouth by the patient. Removable appliances are used to move teeth, align jaws and/or to keep teeth in their new positions when the braces are removed (retainers).

- **Retainer**

A fixed or removable appliance worn after braces are removed or aligner therapy is complete. A retainer is fitted to upper and/or lower teeth to hold them in their finished positions. When worn as prescribed, retainers are the best tool available to minimize unwanted tooth movement after active treatment ends.

- **Rubber Bands**

During certain stages of treatment, small elastics (rubber bands) are worn to provide individual tooth movement or jaw alignment.

Ss

- **Surgical Orthodontics**

Supported by surgical interventions in cases of severe problems in jaw and facial structure.

- **Separators**

An elastic o-ring or small wire loop is placed between the teeth to create space for placement of orthodontic bands. Separators are usually placed between the teeth a week before bands are scheduled to be placed on the teeth.

- **Self-Ligating Brackets**

Brackets that have a “door” on the front that holds the orthodontic wire to the bracket. With self-ligating brackets, an elastic ring is not needed to hold the orthodontic wire to the bracket.

- **Serial Extraction**

Selective or guided removal of certain primary (baby) teeth and/or permanent teeth over a period of time to create room, reduce crowding and create a better environment for the permanent teeth to erupt.

- **Skeletal maturity**

A time when an individual has stopped growing, and bones have reached their full development.

- **Spacers**

Tiny elastics (rubber bands) that are inserted between molars. Spacers are placed one or two weeks before getting braces to create space between molars if molar bands will be used as part of the orthodontic appliance. Occasionally, spacers fall out before braces are placed.

- **Space Maintainer**

A fixed appliance used to hold space for an unerupted permanent tooth after a primary (baby) tooth has been lost prematurely, due to accident or decay.

- **Specialist**

In dentistry, being a specialist usually requires:
General education – Completing college requirements (usually four years)
Dental School Education: Four-year program leading to a DDS or DMD in dentistry
Specialty education – Successful completion of two or more years (usually) of additional education in an accredited program in the chosen specialty area (such orthodontics in dentistry).
Thus the doctor's experience is focused on the area of specialization
Orthodontists are the dental profession's specialists in the field of orthodontics and dentofacial orthopedics. Nine dental specialties are recognized by the National Commission on Recognition of Dental Specialties and Certifying Boards. After dental school, those who intend to be orthodontists must be accepted by, and successfully complete, an accredited orthodontic residency program lasting two years or longer (minimum of 3,700 hours). There are about 15 applications for each opening in an accredited orthodontic program. Those who attain this level of formal education may call himself/herself an orthodontist. Only orthodontists are admitted for membership in the American Association of Orthodontists.

- **Supernumerary Teeth**

An occurrence in which there are more teeth than the usual number. These teeth can be malformed or erupt abnormally. These teeth can also interfere with the normal pattern of tooth eruption and contribute to an orthodontic problem. Supernumerary teeth often need to be removed.

Tt

- **Types of Orthodontic Treatment**

1. Fixed Orthodontic Treatments (Braces):
- Metal Braces: The most commonly used method, known for its durability.
- Clear Braces: Provide a more aesthetic appearance.
- Lingual Braces: Attached to the back of the teeth, making them invisible from the front.
2. Removable Orthodontic Treatments:
- Clear Aligners (Invisalign): Removable and nearly invisible.
- Jaw Appliances: Used to correct jaw structure.
3. Functional Orthodontic Treatments:
- Special appliances used during jaw development to guide growth and development.

- **Temporary Anchorage Device (TAD)**

A miniature surgical screw that resembles an earring stud when it is in place. Positioned in gum and bone tissue, a TAD is used as an anchor – a fixed point from which to apply the force needed to move teeth in a direction that braces alone cannot move them. The TAD is removed when it is no longer needed.

- **Tongue Crib**

A fixed orthodontic appliance used to help a patient stop habits or undesirable tongue forces exerted on the teeth and bone that supports the teeth.

- **Tongue Thrust**

A habit where an individual's tongue pushes against the teeth when swallowing. This type of force generated by the tongue can move the teeth and bone and may lead to an anterior or posterior open bite.

Uu

- **Underbite**

The lower front teeth or jaw sit ahead of the upper front teeth or jaw. Also known as a Class III malocclusion.

Vv

- **Veneer**

A thin, tooth-colored shell that is glued to the fronts of teeth to improve their appearance. A veneer can cover up a discolored or broken tooth. Veneers cannot correct malocclusions (misaligned teeth and/or jaws). However, veneers can be easier to place and last longer after an individual has had orthodontic treatment and teeth are properly positioned.

Ww

- **Wax**

Orthodontic wax is placed on the brackets or archwires to prevent them from irritating the lips or cheeks.

- **Wires**

Also known as archwires, they are held to brackets using small elastic o-rings (rubber bands), stainless steel wire ligatures, or by a door on a self-ligating bracket. Wires are used to move the teeth.

Xx

- **X-ray**

Also called a radiograph, an x-ray is a diagnostic tool that is used to see inside the body. Orthodontists take panoramic x-rays to see a complete horizontal image of a patient's upper and lower teeth. A cephalometric x-ray is a side view of a patient's head.

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