Inclusive Design & Learning Differences

Neurodiversity paradigm

- suggests that we take the positive attitudes and beliefs that most people hold about biodiversity and cultural diversity and apply them to differences among human brains. We don't look at a calla lily and say that it has "petal deficit disorder"; we appreciate its beautiful shape.
- Each learner may have different needs and require specific accommodation in the following categories:

  - **Spoken language**—listening and speaking.
  - **Written language**—reading, writing, and spelling.
  - **Arithmetic**—calculation and mathematical concepts.
  - **Reasoning**—organization and integration of ideas and thoughts.

Focusing on assets and strengths:

- We need to find ways to collect positive information about these individuals' strengths in order to provide personalized learning options, e.g. strength inventories, journals, work samples, list of accomplishments, etc.
  - Individuals with autism, for example, appear to do better than typically developing people on the Embedded Figures Test, which requires focusing on small details within more complex patterns (Baron-Cohen, 1998). They also tend to be systemizers rather than empathizers: They have a fascination with logical structures
  - Students with dyslexia often demonstrate superior artistic abilities (Appleyard, 1997). In another study, people with dyslexia showed a capacity to identify impossible three-dimensional objects (like those made famous by the artist M. C. Escher) more quickly and with greater efficiency than a matched group of typically developing individuals (Karolyi, Winner, Gray, & Sherman, 2003).
  - Students with learning disabilities also often show higher-than-average entrepreneurial ability. A survey of U.S. businesspeople, for example, indicated that one-third of entrepreneurs reported having dyslexia, compared with only one percent of middle managers in large corporations (Warren, 2008).
  - Many kids with ADHD, for example, have a tendency to seek novelty, an important prerequisite for creative behavior (Cramond, 1995).
  - Children with bipolar disorder have scored higher than other children on a popular test of creative thinking (Simeonova, Chang, Strong, & Ketter, 2005).
  - People with Williams syndrome often show welldeveloped musical capacities and interests (Levitin et al., 2004).
  - Children with intellectual disabilities often have strengths related to the emotions and personality—Down syndrome, for example, has been referred to as "Prince Charming syndrome" because of the friendly attitude and disarming smiles of many people with this genetic difference (Dykens, 2006).

Positive Niche Construction:

- Once we recognize the strengths of individuals with special needs, we can start to create positive environments within which they can thrive; "the least restrictive environment."

Strength based learning strategies:

- Who are these learners? How do they learn best? What strengths, cultural backgrounds, learning styles, and interests do they bring to the learning situation? What forms of communication do they use? How do they execute a plan for learning? What are their talents?
- Once the individual strengths are known, we can design learning options that are tailored to their individual needs. e.g. student with autism will probably do better with small details than with the big picture, a teacher can design lessons that begin with concrete examples and then move toward generalities. Understanding that students with ADHD are often more playful and physical than their peers enables teachers to create learning strategies that integrate games, role-play, and hands-on exploration into academic lessons. Realizing that students with learning disabilities may often show artistic tendencies, a teacher can integrate drawing, cartooning, or other art-related activities into reading and writing assignments.
- holding Neurodiversity Fair at school " where both typically developing kids and kids with various learning differences would showcase their gifts and strengths through art, plays, musical performances, sports, and other creative channels
- for students, create a classroom curriculum on the importance of diversity (in general) and neurodiversity (in particular) for creating positive changes in the world

- Presuming competence is a vital communicative ideal. It is the starting point for interactions that honor "another human being . . . as a true equal" (Zurcher, 2013), particularly interactions involving neurodivergent individuals who may be nonspeaking or labeled 'low-functioning.'

Considering alternative learning methods:

- Provide multiple means of representation, action & expression and engagement to enable individuals with learning differences receive, process, recall and communicate information:
  - Verbal - Lingusitic
  - Naturalistic
  - Logical - Mathematical
  - Visual - Spacial
  - Musical - Rhytmic
  - Kinaesthetic
  - Interpersonal
  - Intrapersonal

Learning Process

Thinking about who might be excluded in each stage of a learning process:

- Input (getting information into brain)

- Auditory perception and processing—the student may have difficulty processing information communicated through lectures or class discussions. He or she may have difficulty distinguishing subtle differences in sound or knowing which sounds to attend to.
- Visual perception and processing—the student may have difficulty distinguishing subtle differences in shape (e.g., the letters b and d), deciding what images to focus on when multiple images are present, skip words or repeat sections when reading, or misjudge depth or distance. He or she may have difficulty processing information communicated via overhead projection, through video, in graphs and charts, by email, or within web-based distance learning courses.
  - Non-Verbal Communication
- Integration (making sense of information)
  - Information processing speed—each learner may process auditory and visual information at a different speed. For example a student may be a slow reader because of the need for additional time to decode and comprehend written material.
  - Abstract reasoning—the student may have difficulty understanding the context of subjects such as philosophy and logic, which require high level reasoning skills.
- Memory (storing and retrieving information)
  - Memory(long-term, short-term)—the student may have difficulty with the storing or recalling of information during short or long time periods.
  - Auditory Memory
  - Visual Memory
- Output (getting this information back out)
  - Spoken and written language—the student may have difficulty with spelling (e.g., mixing up letters) or with speaking (e.g., reversing words or phrases).
  - Mathematical calculation—the student may have difficulty manipulating numbers, may sometimes invert numbers, and may have difficulty converting problems described in words to mathematical expressions.
  - Executive functioning (planning and time management)—the student may have difficulty breaking larger projects into smaller sub-projects, creating and following a timeline, and meeting deadlines.
  - Motor Skills (fine motor or gross motor

Inclusive Education

- Inclusive education means that all students attend and are welcomed by their neighbourhood schools in age-appropriate, regular classes and are supported to learn, contribute and participate in all aspects of the life of the school.
- Inclusive education is about how we develop and design our schools, classrooms, programs and activities so that all students learn and participate together.

UDL Strategies for Inclusive Classrooms

1. **Posted Lesson Goals__**Having goals helps students know what they're working to achieve. That's why goals are always made apparent in a UDL classroom. One example of this is posting goals for specific lessons in the classroom. Students might also write down or insert lesson goals in their notebooks. The teacher refers to lesson goals during the lesson itself.
2. **Assignment Options__**In a traditional classroom, there may be only one way for a student to complete an assignment. This might be an essay or a worksheet. With UDL, there are multiple options. For instance, students may be able to create a podcast or a video to show what they know. They may even be allowed to draw a comic strip. There are tons of possibilities for completing assignments, as long as students meet the lesson goals.
3. **Flexible Work Spaces__**UDL promotes flexibility in the learning environment. That's why in a UDL classroom, there are flexible work spaces for students. This includes spaces for quiet individual work, small and large group work, and group instruction. If students need to tune out noise, they can choose to wear earbuds or headphones during independent work.
4. **Regular Feedback__**With UDL, students get feedback—often every day—on how they're doing. At the end of a lesson, teachers may talk with individual students about lesson goals. Students are encouraged to reflect on the choices they made in class and whether they met the goals. If they didn't meet the goals, they're encouraged to think about what might have helped them do so.
5. **Digital and Audio Text__**UDL recognizes that if students can't access information, they can't learn it. So in a UDL classroom, materials are accessible for all types of learners. Students have many options for reading, including print, digital, text-to-speech and audiobooks. For digital text, there are also options for text enlargement, along with choices for screen color and contrast. Videos have captions, and there are transcripts for audio.

Others strategies to have in mind:

- Help improving interpersonal network (includes interactions with teachers, specialists, support personnel, tutors, administrators, peers, volunteers, parents, relatives, and friends from the community)
- provide quite and private spaces for emotional outbursts
- design lessons around concrete examples
- providing classroom/workplace trials
- avoid asking abstract questions in verbal assessments/interviews
- Allow students multiple ways to demonstrate that their learning goals have been met (integration of drawing, sketching, mapping, doodling, games, role play and hands-on exploration in writing and reading assignments)
- In a classroom setting break students into small groups and teach kids according to their specific learning needs.

**Accommodations change *how* a student learns the material. A modification changes *what* a student is taught or expected to learn. Learners who receive modifications are *not* expected to learn the same material as their classmates. It's true that modifications can make the learning process less of a struggle for learners, but they may result a student learns less than his peers. He might fall behind on important skills. Over time, this can put a learner at a big disadvantage.

Learning Differenc... and Inclusion.pdf

Please feel free to edit or add your comments to the above mindmap: https://docs.google.com/drawings/d/1p4SMMdAvtUyFe_Y6dDSXbyrhl8NAg-3nHTr29z78h-Y/edit?usp=sharing

Related Links and Documents

- http://www.ascd.org/publications/books/113017/chapters/Neurodiversity@-The-New-Diversity.aspx
- http://www.ascd.org/publications/educational-leadership/apr17/vol74/num07/Neurodiversity@-The-Future-of-Special-Education%C2%A2.aspx
- http://web.uvic.ca/~gtreloar/20%20Latest%20Research%20Articles/First,%20Discover%20Their%20Strengths.pdf
- http://brainhe.com/
- https://murkygreenwaters.com/2015/04/01/how-to-make-your-social-movement-more-inclusive-of-neurodiversity/
- http://autisticadvocacy.org/wp-content/uploads/2016/06/whitepaper-Increasing-Neurodiversity-in-Disability-and-Social-Justice-Advocacy-Groups.pdf
- http://neuroknowhow.com/
- https://www.understood.org/en
- https://www.w3.org/WAI/PF/cognitive-a11y-tf/
- https://ldaamerica.org/
- http://www.washington.edu/doit/academic-accommodations-students-learning-disabilities

Related Videos

- SWIFT by Dan Habib
- Neurotypical by Adam Larsen
- Loving lampposts by Todd Drezner

Meeting Notes

Community meeting notes - September 13, 2017