



Working with Students on the Autism Spectrum

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Instructor

- Parent of a son who is on the autism spectrum.
- Taught programming and game design for 16 years at Rochester Institute of Technology (RIT)
- Retired from RIT, discovered retirement is boring, went back to teaching:
 - Lake City Christian Academy: Prealgebra, Algebra 1 & 2, Geometry, Precalculus
 - RIT: Intro to Programming 2 (C#), Artificial Intelligence for Games



What is Autism?

- Autism is a lifelong, nonprogressive neurological disorder typically appearing before the age of three years. The word “autism” means a developmental disability significantly affecting verbal and non-verbal communication and social interaction.

<https://autismawarenesscentre.com/definition-autism/>



What is Autism Spectrum Disorder?

- Another term commonly used when defining autism.
- Recognizes the fact that there is range of severity and behaviors within autism.

Common Features of Autism (1)

- Insistence on sameness; resistance to change
- Difficulty in expressing needs; uses gestures or pointing instead of words
- Repeating words or phrases in place of normal, responsive language
- Laughing, crying, showing distress for reasons not apparent to others
- Prefers to be alone; aloof manner
- Tantrums
- Difficulty in mixing with others

Common Features of Autism (2)

- May not want to cuddle or be cuddled
- Little or no eye contact
- Unresponsive to normal teaching methods
- Sustained odd play
- Spins objects
- Inappropriate attachments to objects
- Apparent over-sensitivity or under-sensitivity to pain



Common Features of Autism (3)

- No real fears of danger
- Noticeable physical over-activity or extreme under-activity
- Uneven gross/fine motor skills
- Not responsive to verbal cues; acts as if deaf although hearing tests in normal range.

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Managing Classes with Students on the Spectrum

- Variety of ideas for dealing with students with ASD
- A couple of resources:
- “22 tips for Teaching Students with Autism Spectrum Disorders”
 - <http://teaching.monster.com/benefits/articles/8761-22-tips-for-teaching-students-with-autism-spectrum-disorders>
- “Classroom Tips for Working with Students on the Autism Spectrum”
 - <http://www.swccd.edu/Modules/ShowDocument.aspx?documentid=13018>

Structure

- Students with ASD like structure.
- Comforting to know what's coming next.
- Doesn't need to be a strict schedule
 - a familiar sequence of activities in a class will often suffice.

No Surprises

- Related to the last tip – try to avoid surprises
- If you know a change in routine will occur:
 - Talk to students a few days in advance about the upcoming change
 - Remind them the day before
 - Remind them the day of the change
- If you have little warning:
 - Talk to the students with ASD before you make the change or as the change occurs.



Limit the Tasks

- Ideally: One task at a time.
 - A single simple step, explained in detail.
- They don't do well with this:

“Color the tetrahedron’s sides, making each side a different color. Then cut out the model, fold the sides and tape each side separately. Bring the completed models up to the front so we can assemble them into a three sided pyramid.”

Clear, Simple Instructions

- Keep any instructions clear and to the point.
- Use as few words as possible.
 - I like to preplan out the instructions when I'm preparing lessons.

Avoid Sarcasm and Idioms

- Students with ASD tend to be very literal.
- Sarcasm is usually missed and may be taken as a direction:
 - Student: "Should I put the collected papers on your desk?"
 - Teacher: "No, dump them on the floor."
 - Student: "OK" and then dumps the papers on the floor.

Idioms

- Idioms are word combinations that have a different figurative meaning than the literal meanings of each word or phrase. (<http://examples.yourdictionary.com/idioms-for-kids.html>)
- Examples:
 - “Drawing a blank”
 - “Put a bug in his ear”
 - “It costs an arm and a leg”
 - “Hold your horses”

Limit Choices

- Students with ASD can be overwhelmed if you give them too many options.
- Bad: “Joseph, move away from me and wait until your ride gets here.”
 - Too many options of where to go
- Good: “Joseph, move over here (show the exact spot) and wait until your ride gets here.”

Limit Distractions

- This becomes hard to do when the entire 8th grade class consists of students who excel at being distracting.
- Some Ideas:
 - Separate seating area
 - Facing away from other students – front of the room works
 - Cubicle/computer desk with sides
 - Limiting use of electronics

Watch for Signs the Student is Struggling

- “The Blank Stare” – most common sign
 - They generally won’t ask you a question
- Some approaches:
 - Try rewording the instructions
 - Ask what the student is not understanding. (Instructions, part of the topic, etc.)
 - Try a different learning modality – visual, written, etc.
 - Could be they have no interest in the topic – a bit harder to deal with.

Redirect if Student Goes Off Topic

- ASD students will wander off topic.
- Sometimes there's a connection to what is being covered. If that happens, tie it back to the original topic and continue on.
- Other times they just want to talk about a different topic. Try to nicely redirect the discussion back to the original topic.

Link Work to Student's Interests

- Try to find what the ASD students are interested in.
 - Technology
 - Games
 - Sports
- Try to find a way to work that topic into the class and assigned work.

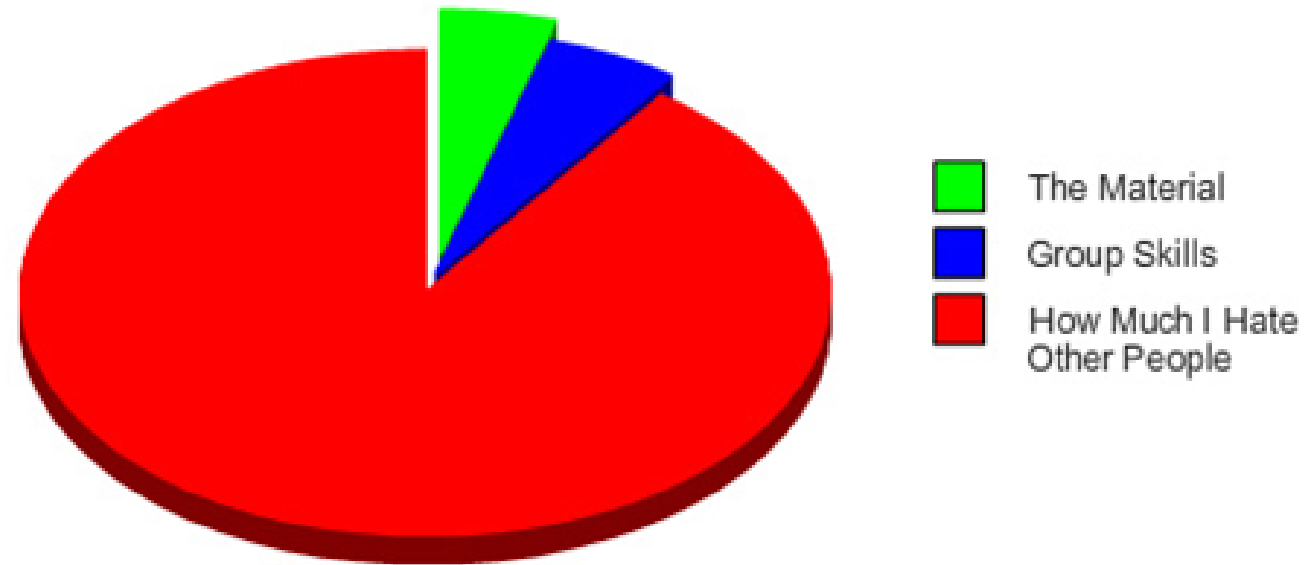
Use of Technology

- Students with ASD like computers and technology
 - Sense of control
 - Knowing what will (or should) happen when you write code.
 - Many of the students in RIT's Interactive Games and Media program had ASD or other learning issues like ADD or ADHD.
- Finding resources that take advantage of this interest in technology helps your student maintain focus on the material.

Group Work Issues

- Another major issue for students with ASD
 - Often teachers do group work in classes
 - Once in college, group projects are very common
 - Some college projects take the entire semester
- When you don't interact well with others, group work becomes very scary.

What Group-Projects Teach Me





What Makes Group Work Scary?

- Unpredictability – may happen without warning
- Finding a group – tough to do if you don't know your classmates
- Sensory overload – people moving around, talking,
- Shared physical space – if you're all working closely around a table
- Chaos of being in a group – spontaneous, not organized or scheduled
- Need for social skills – needed for a lot of team work
- Understanding and negotiating roles – what job and tasks do I do?

How to Address These Problems (1)

- Give advance notice about team work
- Assign groups – eliminates the fear of finding a group
 - I've used surveys if I need specific skills in a group
 - Random assignment using cards or other approach (count off, etc.)
- Have the same groups throughout the course
 - Students become comfortable with the same teammates

Survey Example

3	Planning Ability: 1 - I am surrounded by chaos, 2 - sort of know what I must do, 3 - given direction I can come up with a plan, 4 - generally plan out my work, 5 - familiar with PERT charts and other planning tools
4	Artistic Skill: 1 - I am challenged drawing stick figures, 2 - if someone gave me an art kit I would regift it, 3 - if I draw a dog, 75% of all viewers would identify it correctly, 4 - I draw for fun, 5 - have gotten awards for my art
5	Team Work: 1 - I use Darth Vader as a role model for team work, 2 - I'm sort of grumpy, 3 - I usually get along with others as long as they're not jerks, 4 - I can even get along with jerks, 5 - I should run for political office since I can get along with everyone.

How to Address These Problems (2)

- Keep groups small (3 – 4 people)
 - Fewer people to get to know/interact with
- Shared expectations
 - What is the goal of the project?
 - What results should the team create?
 - What is acceptable behavior when interacting?
- Specify the tasks
 - I often assign roles with a list of tasks for each role

How to Address These Problems (3)

- Milestones
 - For a large project, break it down into multiple parts, each with their own deliverables.
 - Gives you an early indication of problems
 - Peer evaluations
- Allow different ways to use space
 - Maybe meet for a while to coordinate tasks, then separate to do work.
 - You don't always need to crowd around a table.
- Frequent check-in with teams
 - See how they are doing, address problems

This Definitely Doesn't Work

- Don't put all of the students with ASD in one group, on the assumption this will make your job a bit easier.
 - Had this accidentally happen once – didn't turn out well
 - Students didn't get a good social experience
 - Nobody wanted to talk
 - Nobody wanted to lead
 - Everyone worked on their own part, but didn't coordinate with others
 - Nobody wanted to do the final presentation, so they put it off until the last minute.



Questions?