

Nassau BOCES Joseph M. Barry Career and Technical Education Center

**Computer Game Design and Programming
CTE Skills (Special Education/Autistic Spectrum)
and
Regular CTE**

**Ms. Gene Silverman, Executive Director,
Department of Regional Schools and Instructional Programs
Virginia D'Alonzo, Teacher
Barry Tech**

**6th Annual Collaborative CTE Conference
CTE Technical Assistance Center of New York and
Hofstra University, School of Education**

**Friday, November 18, 2016
HOFSTRA UNIVERSITY**



Presentation

- * Program overview and presentation materials
- * Profile of Special Education students on the autistic spectrum
- * Course design and implementation
- * Value add: Student entrepreneurship and class companies
- * Student Outcomes and Program Videos

- * Questions

In June 2014, 50,000 students in the U.S. graduated HS on the Autistic Spectrum.....

Attributes of Autistic Secondary Students

Students need:

- * To avoid over-stimulation; set work areas free of lots of sound or visual distractions.
- * Set and clear schedules, routines and structures, and advanced warning if change is coming.
- * Need simple , concrete language.
- * Few, clear, discernable choices; avoid open-ended options.

A climate and course to meet their needs:

Classroom Design and Strategies

- * Gives very specific tasks in sequential order, and repeated instructions, if needed.
- * Addresses specific social skills and rules, such as turn-taking and social distance.
- * Treats students as individuals.
- * Uses a variety of presentation and learning methods: visual, physical, auditory, peer-modeling and pairing, tactile, technical, and computer-based.
- * Links learning and work to the student's particular interests.
- * Provides a teasing-free environment with peers who are aware of each student's uniqueness, likes and preferences.
- * Allows some access to excessive behaviors as a reward or acceptable in specific circumstances.

Designing the Course: How We Began

- * Michael Ploor, author/teacher, designed a 2.5 hour curriculum, modified for special education students. (See attachments: textbook, workbook, course syllabus years 1 and 2.)

Expanded Units/Text by adding:

- * Team based “Business simulation” projects based on skill set
- * Adobe Photoshop for advanced game art editing
- * Digital drawing tablets for original game art work
- * CAD (Computer Aided Design) for 3D objects for game builds
- * 3D printers to create prototypes & final game design related products
- * Creating and programming custom controllers designed for original game builds reinforces math, science and physics principles used in game programming.

How the course adapted to the students, and the students to the course, and teacher expectations:

- * Type of student – difference between Special Education, General Education and Students on the Spectrum
- * Teacher's role as the facilitator – I do-We do-You do
- * Constantly Adjusting – Flexibility
- * All work is done in units as a class



What's working

- * Students work in design teams – integrated academic and technical skills to build original computer games
- * Teams develop marketing strategies for each build
- * Students use peer feedback to continually evaluate their work and improve upon their projects
- * Entrepreneurship/SkillsUSA (see attachments: WEE Business Plan and PowerPoint (1st place Entrepreneurship NYS Skills USA 2015 and Kentucky for Nationals; 3rd place 2016: Entrepreneurship, Job Demo and Skills in Action)

Curriculum and Resources

- * GameMaker (online product, free)
- * Clickteam (online product, free)
- * Textbook/Workbooks
- * MS PowerPoint/Excel
- * Adobe Photoshop/illustrator
- * Digital photography
- * Audio: Audacity (online product, free)
- * Animation: Pivot (online product, free)
- * 3D Modeling (online products, free)
 - TinkerCAD
 - Bender
 - MakerBot Print
- * Legos, board games, card games
- * Team and individual presentations
- * Video (used to record presentations)
- * Speaker and microphone
- * Makey Makey circuit board kits
- * Headsets with microphones
- * Noise reduction headsets
- * Skills USA Competitions
 - Entrepreneurship-student business
 - Pre-pared speech
 - Job-Demonstration Open

Adding value: partnerships

- * Business Partners: Microsoft Store, Roosevelt Field, GameBuilders Academy; Maker Bot



- * Colleges: NYIT



Videos and Student Work

** Students in Action - video*

n a s s a u
BOCES
forward >>>

n a s s a u
BOCES*forward* >>>

References and Citations

- * *22 Tips for Teaching Students with Autism Spectrum Disorders, Teaching.com, by Pat Hensley*
- * *Recommendations for Students with High Functioning Autism, Teach.com, by Kerry Hogan*
- * *Understanding Autism: A Guide for Secondary School Teachers, OAR – Organization for Autism Research and CSESA – Center on Secondary Education for Students with Autism Spectrum Disorder*
- * *New Academy at Gulf High Prepares Students for Careers in Gaming Industry, Tampa Bay Times by Michele Miller, January 29, 2016*
- * *World Educational Entertainment – WEE- Business Plan, by Barry Tech students: David McAleese, Jason Garcia, David Garcia, Jazmine Cespedes, March 2015, p. 6*
- * *Video Game Design, D. Michael Ploor, MBA, Copyright © 2014 by The Goodheart-Willcox Company, Inc., Tinley Park, Illinois,*

For more information and all handouts/attachments on the Computer Game Design and Programming Skills course, please visit:

www.nassauboces.org/GameDesignPresentation



www.nassauboces.org