

## Potential Utility of Self-Learning Modules to Supplement Instruction for Students in Speech-Language Pathology

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### Commentary

For over twenty years, I have taught graduate classes on language disorders in preschool and school-aged populations. In addition to the typical content covered in such classes (i.e., identification, evaluation, and management of language disorders, the role of language in educational contexts, formal and informal assessment strategies, and specific strategies for intervention), I have routinely included a unit on individuals with developmental disabilities who have associated language and communication difficulties.

Developmental disabilities can substantially restrict an individual's functioning in several major life activities. For example, individuals with autism often experience significant communication, social and behavioral challenges and have reduced communicative opportunities with others.

Working with a colleague, Dr. Joseph Cullen, who at the time was an Associate Professor in the Department of Special Education at Appalachian State University, we developed a self-learning resource to provide prospective teachers and clinicians with an understanding of effective strategies for supporting children with autism in general education classrooms and clinical settings. The self-learning resource we developed was a web-based module on autism that used the following format:

- Statement of learning objectives
- Menu of topics
- Brief review of key concepts and terminology
- Problem-based case study followed by introductory questions
- Presentation of the topical content
- Quiz to ensure mastery of content
- Brief evaluation survey

In order to ascertain the potential utility of using the self-learning module to supplement instruction on autism, it was utilized in two graduate level classes I taught on language disorders. With one group of 50 students (i.e., 25 in the preschool language disorder class and 25 in the school-age language disorder class), I presented information using a lecture format combined with an assignment to complete the self-learning module.

The next semester, with a second group of 50 students (i.e., 25 in the preschool class and 25 in the school-age class), I presented the same information using a lecture format only. All 100 students took a 10 item multiple choice and true/false quiz after completing the unit on autism. Quiz scores for Group 1 who received instruction using a lecture format with the assigned self-learning module ( $M=8.90$ , standard deviation  $[SD]=0.97$ ) were significantly higher ( $P<0.001$ )

than quiz scores for Group 2 who received instruction through a lecture format only ( $M=6.58$ ,  $SD=1.98$ ).

Although this outcome was encouraging, caution must be exercised when interpreting these results. The module assignment and unit quiz were implemented as routine activities in both courses, therefore, students who participated were not randomly selected. However, it is my belief that use of self-learning module served as an effective tool to help "level the playing field" for students whose background knowledge about developmental disabilities and experiences with individuals who have autism varied widely. The self-learning module allowed students to delve as deeply as they wished into particular topic areas as noted in the following anecdotal feedback one student provided.

*"I felt so intimidated at the beginning of this unit because I have not had any experience working with people who have autism like some others in the class. But the material in the module was very well organized and easy to follow. I found the material very interesting and I liked how the reference documents were posted at the end. I was able to read further about topics that I did not know anything about or found most interesting. It helped me to feel more confident in class and join in the discussions."*

Self-learning resources can take many forms including written materials, videotapes, images, computer assisted learning software, data, web-based materials, etc. There are sound pedagogical reasons why students may be motivated to use self-learning resources. For example, they can review the content in multiple formats at their own pace and reread material multiple times if needed as noted in this quote from one student.

*"It was really straight to the point and was structured and easy to understand. I loved all the different ways to learn about autism like the insertion of clip art and video clips! I also liked the charts that were provided and there was a puzzle at the end of biological development to review the material and wrap it up. It was great to be able to review things when I had the time between classes or late at night. It felt a lot different from taking notes in class because I could go back and review anything I didn't get the first time."*

Self-learning resources can also encourage students to accept responsibility for their own learning. This quote summarized one student's thoughts about no longer needing to rely on the instructor to provide answers to all of her questions.

*"I really liked the "Practice what you've learned" section at the end of Resource 1.2.1: Typical and Atypical Biological Development. I had many questions about how development differed from other children. I think it was a fun and interactive way to find out the answers. I spent a lot of time clicking on the links to learn more about things that were*

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*not covered in class. I think this module is a very helpful informative resource and I enjoyed reading the information.”*

Since then, I and other colleagues have developed seven additional web-based self-learning modules that have been utilized in an inter-professional exploratory pilot study designed to examine the efficacy of theatre as a therapeutic intervention context for adolescents and young adults with developmental disabilities, all of whom have moderate to severe communication impairments. In addition to the module on autism, the seven additional modules focus on:

- Intellectual disabilities

- Traumatic brain injury
- Assessments appropriate to use with individuals who have developmental disabilities
- Activity-based intervention
- Video modeling
- Theatre warm-up exercises, movement, and vocal technique
- Acting exercises, performance, and text work

Our hope is to gain a more complete understanding of the benefits and limitations of using self-learning modules to supplement instruction for undergraduate and graduate students.