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APPENDIX B: BARRIERS AND SUPPORTS IN MATH CLASS FROM A NEURODIVERSE PERSPECTIVE

Read the narratives below written by people with learning disabilities (such as dyslexia or dyscalculia). Think about the following questions:

- ▶ What supports learning in math for this student?
- ▶ What are the barriers to learning math for this student?

Narrative	What supports learning in math for this student?	What are the barriers to learning math for this student?
<p>1 Math is “hard” because of how boring and time-consuming it is. Homework usually consists of doing the same problem forty times in a row! Then tomorrow, we will do forty more of the exact same problem, except with one extra digit of complexity thrown in. The pages march by, an endless procession of mind-numbing paperwork, a treadmill of uninteresting problems. . . . What I fail to understand is that the “harder” classes are where math becomes far more interesting. Instead of forty dull problems, they give you five interesting ones. Instead of pointless drills, you can begin to see how to use math as a tool. They finally give you a pile of two-by-fours and let you start nailing things together.</p> <p>(Memoir by Shamus Young, 2011, p. 119)</p>		
<p>2 Learning . . . just learning real quick. It takes me time. I could tell you that it takes me a while to learn, especially in Math. It’s my worst subject. It could take me weeks to learn one single thing. There’s a lot of subjects I can learn, then I forget it, real quick, do it again, learn again. To me, it’s just learning it at that moment in an hour, and hour and a half, the class we have. It takes a couple of classes for me to get to know the subject. . . .</p> <p>It’s really weird how I’m labeled with a learning disability, but when it comes to a subject, I click onto things that interest me coz I know, I know already, I know what’s going on, I know what happened. It just clicks and I’m like one of the main students raising their hands and discussing it with the teachers.</p> <p>(Interview with Santiago, in Connor, 2007, pp. 205, 209).</p>		
<p>3 Soon after entering fourth grade the truth became apparent. While I could recite the numbers and the multiplication tables that I had memorized, they were only symbols with numerical names that didn’t mean anything to me. I didn’t understand the concepts behind them. Faced with the daily onslaught of progressively more difficult mathematical concepts, I could no longer deny there was a problem. I started to shut down completely. I found myself unable to cope, and for the first time I became clearly aware of the fact that I didn’t get things my classmates did. I began to feel less and less comfortable at school. I felt anxious that someone would find out I couldn’t understand everything. I always felt the most vulnerable during the math portion of the day.</p> <p>(Memoir by Samantha Abeel, 2005, p. 22)</p>		

Narrative	What supports learning in math for this student?	What are the barriers to learning math for this student?
<p>4 If the teacher came into the classroom snarling and spouting facts in rote fashion, with no explanation of the core meanings, my disabilities flared and I failed. But in subjects such as physics, biology, and algebra, taught using multisensory methods by kind, enthusiastic teachers, I had nearly perfect grades. (Memoir with Dr. Abraham Schmitt, 1994, p. 118)</p>		
<p>5 I first noticed there was something different about my brain in primary school. Dyscalculia was not a recognised condition at the time, certainly not at any of the schools I attended. As soon as I was expected to detach visual aids from maths, it became a problem for me. I could understand maths when I could see the things to count, even my fingers. Removing this, broke my fragile relationship with maths. No one understood why I could not grasp these supposedly simple concepts. My memory of this time was there were a lot of teachers who just didn't understand why I could excel in certain subjects and fail stunningly in anything related to maths. (Blog by LozMac, 2018)</p>		
<p>6 By eighth grade, I had learned the correct math procedures but still needed extra time. In that class we were doing "rapid math," which provoked terrible anxiety in me and which I would do almost anything to avoid. The task in this exercise was to complete an entire page of calculations in five minutes. I would sneak the book home the night before, answer all the questions, and then write the answers in my book lightly in pencil; in class the next day, all I had to do was copy over my answers. This was the only way I could complete the exercise in the allotted time. Though I had done the work (at home), I felt like a fraud. (Memoir by Barbara Arrowsmith-Young, 2013, p. 21)</p>		
<p>7 Among the advantages [of LD] was a better understanding at a young age of my limitations and weaknesses. Though this might not sound like much of an advantage, one must remember that every person has their own weaknesses and limitations. I was able to realize, for example, that to get through math, I should draw out the problems. This system let me visualize what I was trying to do. (Garret Day, in Rodis et al., 2001, p. 99)</p>		

Memoirs written by and with people with learning disabilities/dyslexia/dyscalculia:

Abeel, S. (2005). *My thirteenth winter: A memoir*. Scholastic.

Arrowsmith-Young, B. (2013). *The woman who changed her brain: How I left my learning disability behind and other stories of cognitive transformation* (Reprint ed.). Simon & Schuster.

Schmitt, A., (1994). *Brilliant idiot: An autobiography of a dyslexic*. Good Books.

Young, S. (2011). *How I learned*. CreateSpace Independent Publishing Platform.

Collections of narratives written by individuals with learning disabilities:

Connor, D. J. (2007). *Urban narratives: Portraits in progress; life at the intersections of learning disability, race, and social class*. Peter Lang.

Rodis, P., Garrod, A., & Boscardin, M. L. (2001). *Learning disabilities and life stories*. Allyn and Bacon.

Blog posts:

LozMac (2018, January 8). *Smart thick kid—Living with dyscalculia*. OxGadgets. <https://www.oxgadgets.com/2018/01/living-with-dyscalculia.html>