from [**Discussion - Analysis of Effect Size Quiz - Discussion Group 11**](https://nwmissouri.instructure.com/groups/27106/discussion_topics/210284?headless=1&student_id=34121)

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[Tim Tutt](https://nwmissouri.instructure.com/groups/27106/users/34121)

In the comparative study of mock data  for our assignment in this module, two subsets of 20 test scores each were being evaluated - a pre-test and a post test.

The scores from the pre-testing range from a low of 43 to a high of 72. The mean of the pre-test scores is 60.4. The median from this pre-test data is 60.5, and the mode is 60. The standard deviation from this data set is 6.82, leaving two scores in the forties (43, 48) and two scores in the seventies (70, 72) as outliers.

The scores from the post-testing range from a low of 50 to a high of 75. The mean of the pre-test scores is 64.85. The median from this post-test data is 66.5, and the mode of the set of post-test is 71. The standard deviation from this data set is 6.97.  All of the scores in the fifties (50, 52, 55, 57, 59) and the top score (75) were outliers in the post test because of the high mode of 71.

That being said, there was a high, positive shift from pre-testing to post-testing, as the Cohen-D quotient effect size was 0.65.  This shows that there was a significantly large, positive effect on the intervention(s) used in the overall increase of test scores between pre- and post-testing for the mock study.

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For my study, my research question is:
***Is there a difference in second grade reading fluency scores, using word lists and repetition from the Fastbridge Learning program as an intervention strategy to increase reading fluency scores of second graders who are "not proficient", as defined by the Iowa Department of Education?***

To achieve the Cohen-D quotient, I will monitor, gather, and analyze the difference between pre- and post-test scores of a single group of students in my classroom, as we did with the mock data this week.

In Iowa,  the Iowa Department of Education (IDE) mandates that students in K-3 take tests in reading fluency.  In grades 2-3, every child in the state Iowa be given 60 seconds each to read the same three passages, as a reading fluency pre-assessment (i.e., pre-test) in late September and early-October. An average of the words per minute (WPM) read in each of the three stories will be documented at their Fall testing score. The same three passages are read by the students and averaged again for the winter (January) and in the spring (May).   In 2019, the IDE defined proficiency in for second graders to be 56 WPM in the fall, 84 WPM  in the winter, and 101 WPM in the spring.

My data samples will come from those students who do NOT reach the fall level of proficiency.  Over the years, the number of students in my classroom  who were not proficient after the fall testing period has fluctuated between 8-17 students. The fall pre-testing window for Des Moines Public Schools begins this coming Thursday, September 24, 2020.

The IDE requires regularly-scheduled interventions and weekly fluency testing to second and third grade students who do not achieve the fall fluency goal of 56 WPM. (Students *can* "test out" of an intervention program, if fluency goals are surpassed in the winter or spring tests.)  I will use the Fastbridge/Read Naturally fluency intervention program that highlights miscues (incorrectly read words) from weekly fluency passages, and reintroduces them in intervention work - including customized word lists and practice passages using those words.  IF students are making connections with word list recall, I would add different forms of those words, using prefixes, suffixes, rhymes, and transfer similar syllables or word parts into other words. My belief is that the use of these intervention strategies will lead to an increase in reading fluency, showing a Cohen-D quotient effect size that would be high enough to validate the use of these intervention strategies (Cohen-D quotient < 0.5).

My target in analyzing the qualitative data is NOT that all of the students in the study achieve the IDE definition of proficiency in reading fluency. Personally,  I would love that!  My research target is two-fold: I desire to evaluate the quantitative ***differences***between the fall pre-test and the spring post-test results.  I also want to make note of a qualitative difference not stated in the question. I would like have each student rate their fluency ability after the fall and spring assessments, using smiley faces, similar to the image below. For my record keeping, I will correlate  those four images to a 1-4 rating, similar to the standards-referenced-grading system used in the Des Moines Public Schools. I want to note any difference in students' esteem  toward fluency and reading in general over that same period of time.

