

Some Commentary on the NC Community Colleges “2012 Critical Success Factors Report”

This paper presents some commentary in the form of data visualizations of the data presented in the “2012 Critical Success Factors Report.” The intent here is to interest readers in the richness of the report's data, even beyond the analysis already provided by the report's authors.

I have provided commentary on a very limited selection of the report's data tables. My intent is to display some interesting visualizations, not to engage in analytical debate about the significance of the report's findings. The graphics contained in this paper were produced using the R Statistical Analysis system, which is open source (i.e., free), remarkably powerful and used broadly in science, finance and many other areas. The data was obtained directly from the publicly report by “scraping” its pdf form. All the R programs are available for inspection.

Tables D and E lend themselves to visualization, which I suggest results in an opportunity for better understanding. Both these tables are “dense.” There are a lot of numbers, a lot of columns, and it takes quite a while to construct a mental image of their significance. The attached figures are my suggestion for a quick way to comprehend their significance. These tables present a well-used statistical approach, that of the cumulative distribution function (cdf). They all present along the horizontal axis the percentage figures that are the heart of Tables D and E. The vertical axis is a running count of the number of colleges that report at least the percentage directly below the cross, or plus, or whatever the appropriate symbol for the reporting period. A dashed vertical line is provided to show the state-mandated standard applicable to tables D and E. Durham Tech figures are shown as red symbols.

For instance, in the figures for Table D, it is immediately evident that Durham Tech did not perform well. For instance. In Figure D-Reading, you can see that the standard is 75%; that just over 95% of the colleges met the standard (that is, about 4% did not meet it); and that Durham Tech just made the standard in the 2010-2011 and 2008-2009 reporting periods, and missed it in the other two periods. Durham Tech's performance in the Table E matters is good. Trying to parse this out of the report's tables would be difficult indeed.

Just as a note, these graphics were generated by one R program that was designed to work for tables with varying numbers of columns. The techniques used here can be applied to quite a variety of tables.

English

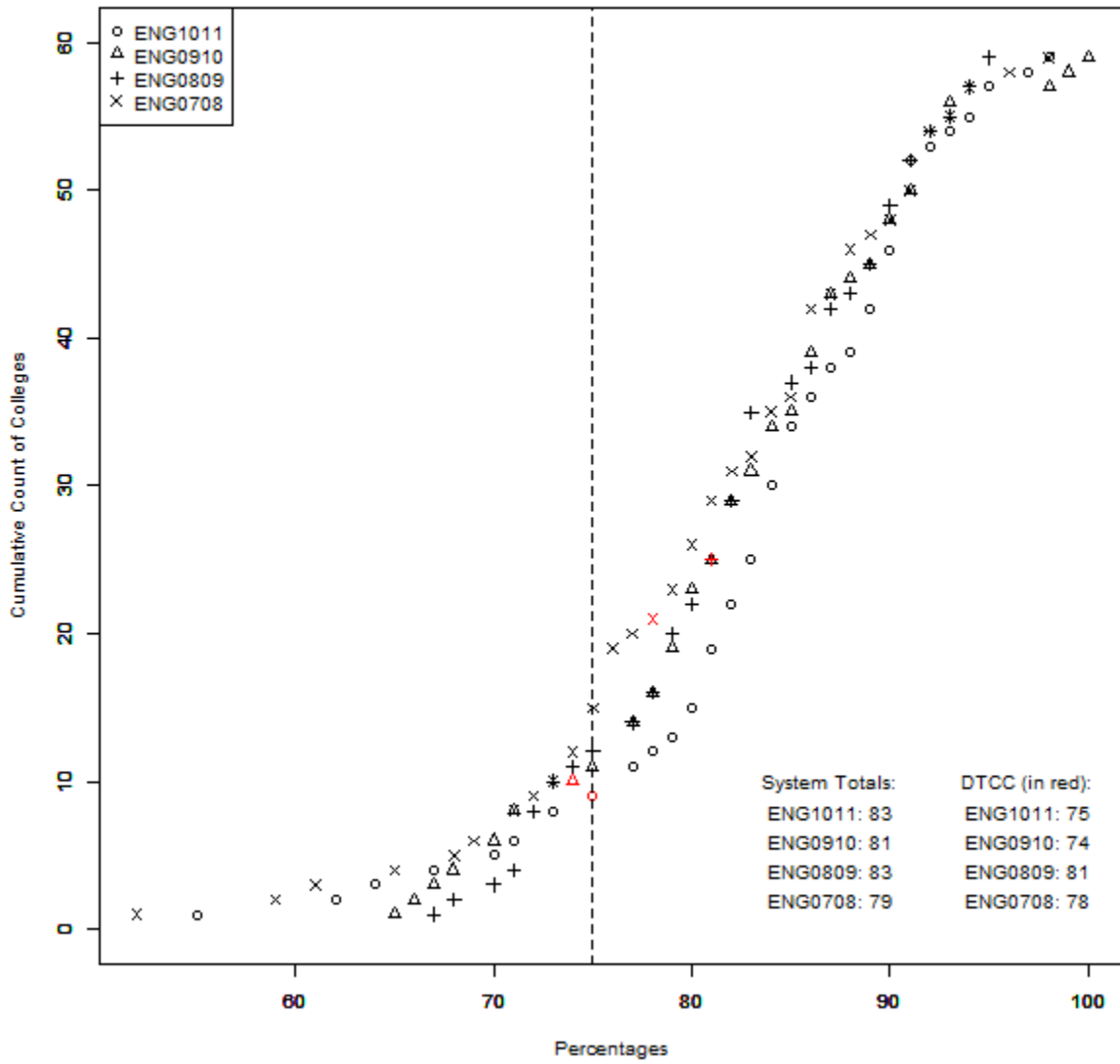


Figure for Table D: English

PASSING RATES OF STUDENTS IN DEVELOPMENTAL COURSES

Mathematics

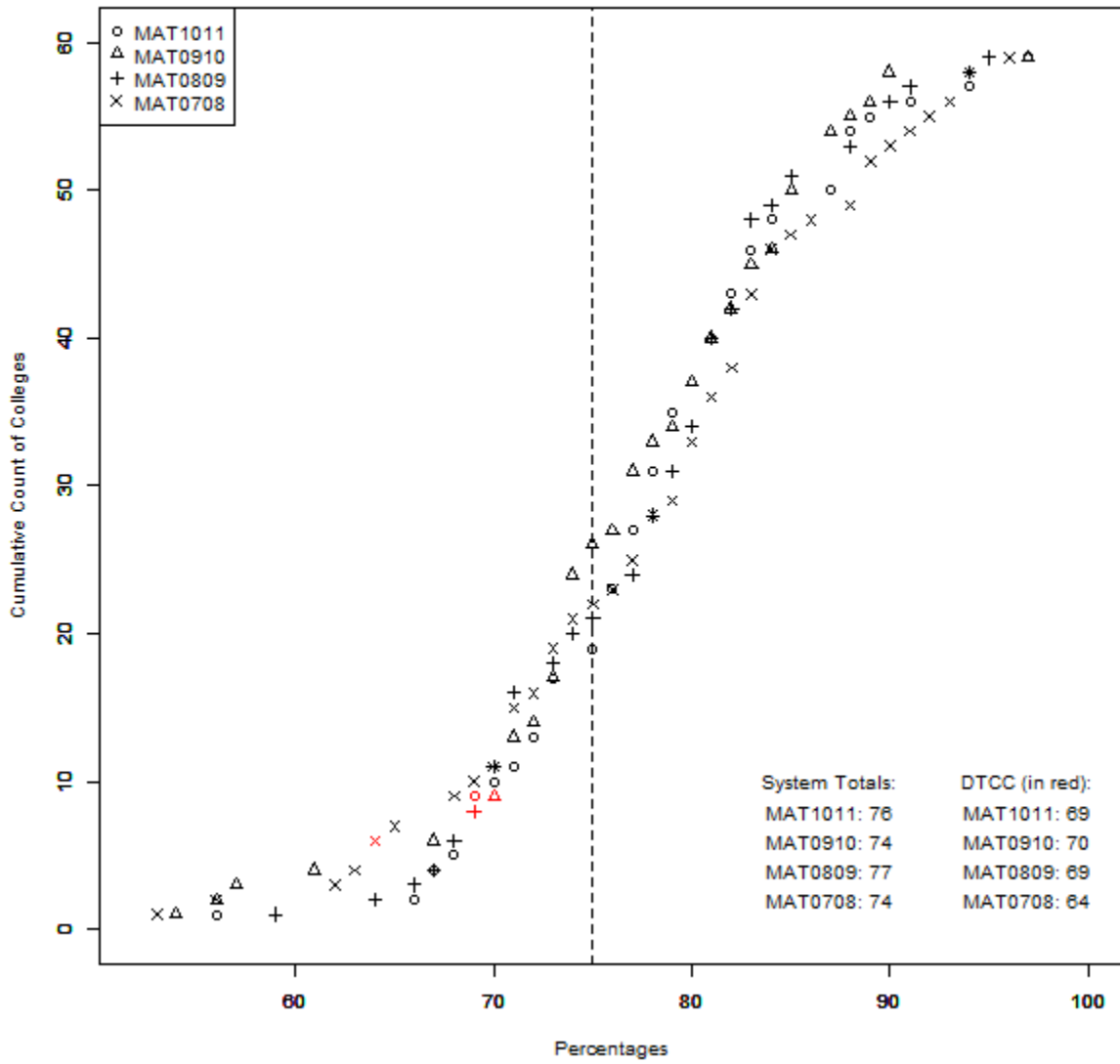


Figure for Table D: Mathematics

PASSING RATES OF STUDENTS IN DEVELOPMENTAL COURSES

Reading

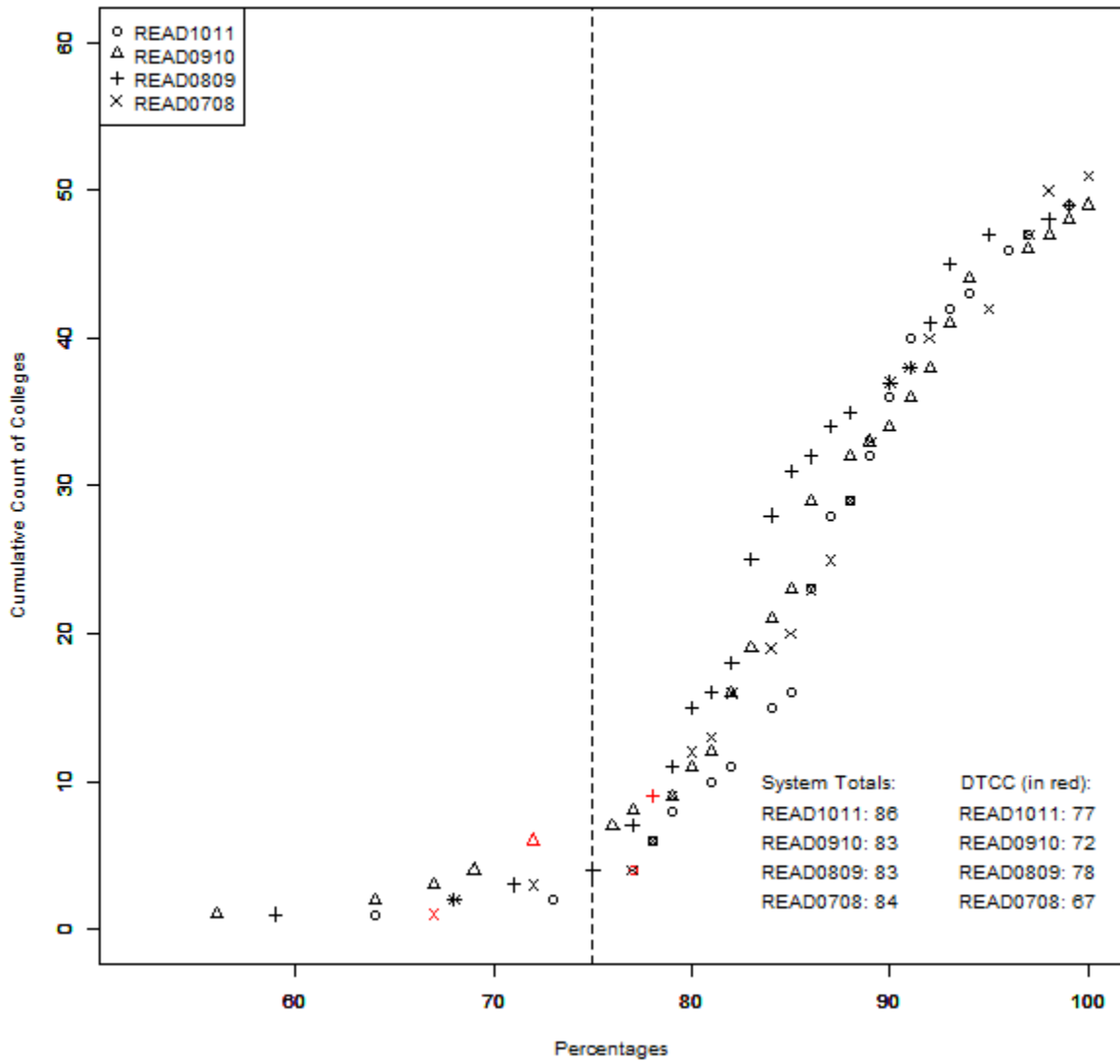


Figure for Table D: Reading

PASSING RATES OF STUDENTS IN DEVELOPMENTAL COURSES

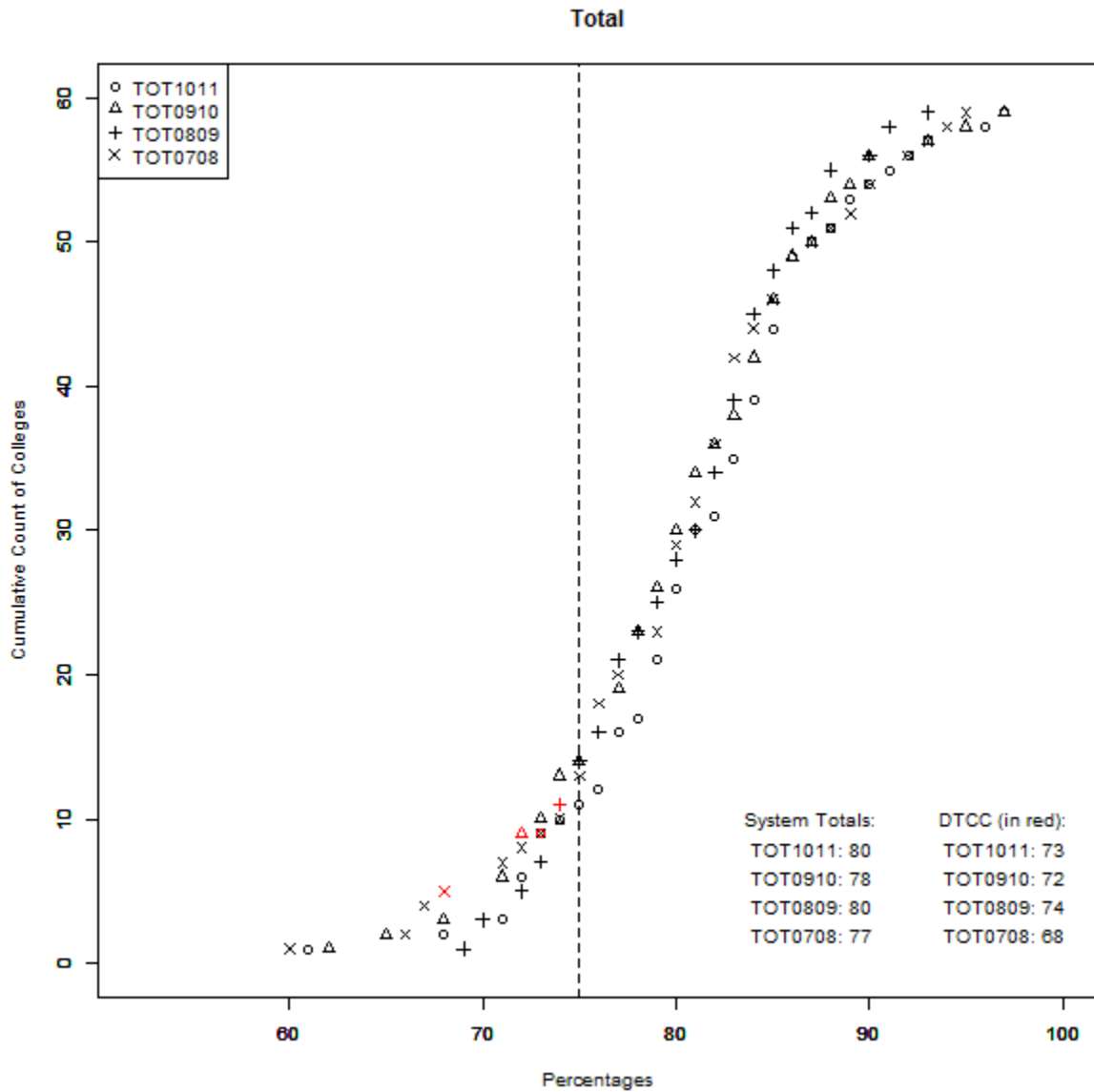


Figure for Table D: Total

PASSING RATES OF STUDENTS IN DEVELOPMENTAL COURSES

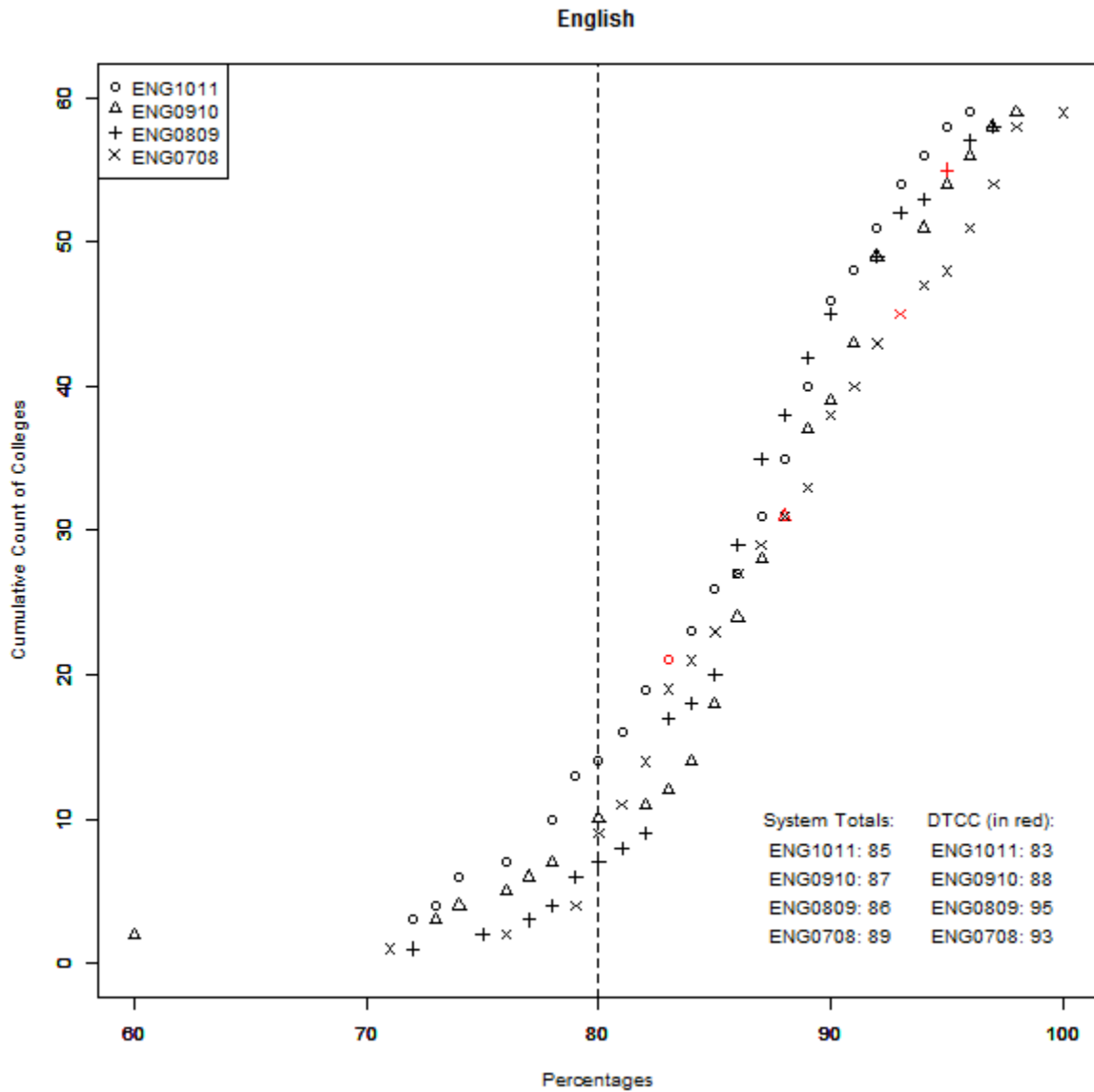


Figure for Table E: English

PERFORMANCE OF DEVELOPMENTAL STUDENTS IN SUBSEQUENT COLLEGE-LEVEL COURSES

Mathematics

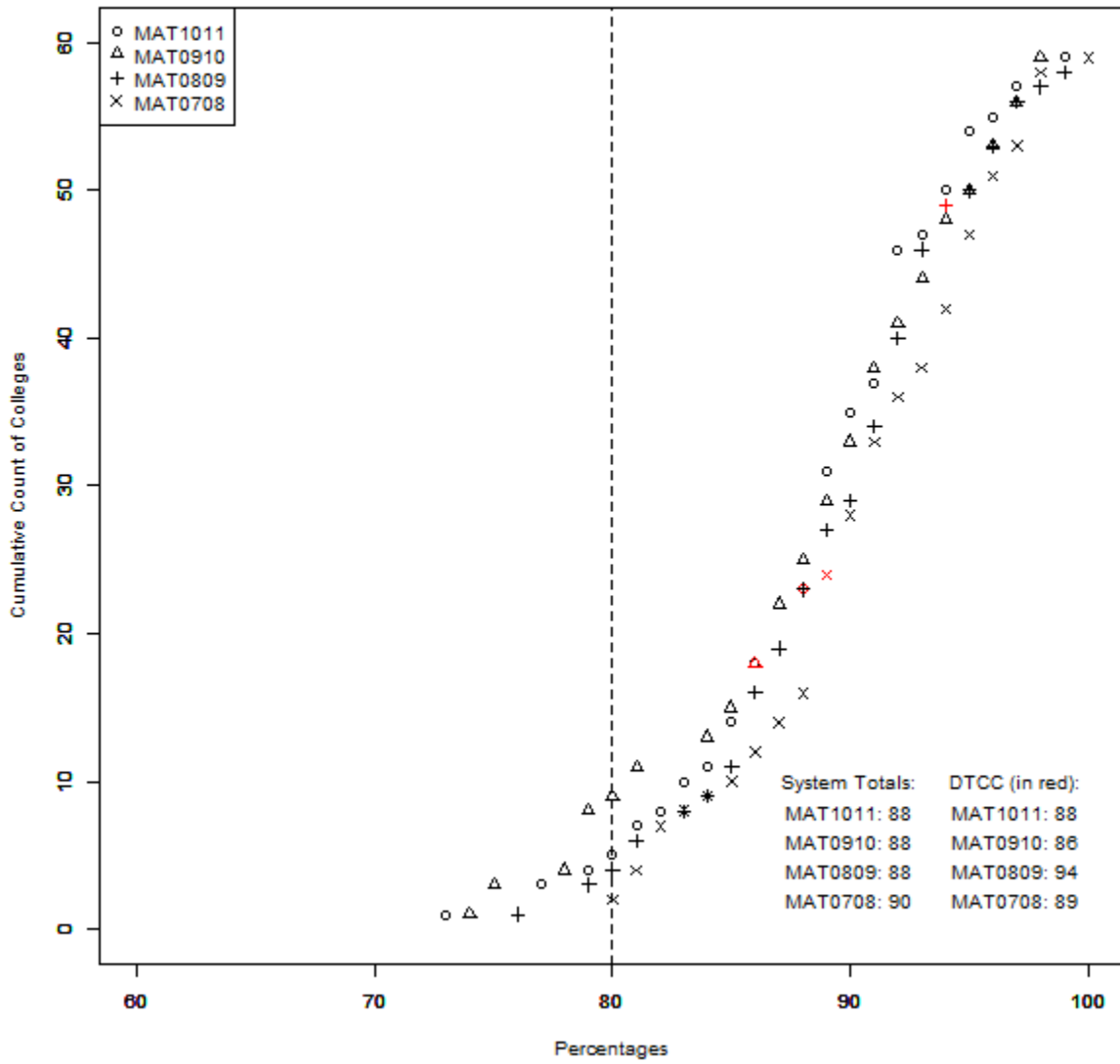


Figure for Table E: Mathematics

PERFORMANCE OF DEVELOPMENTAL STUDENTS IN SUBSEQUENT COLLEGE-LEVEL COURSES

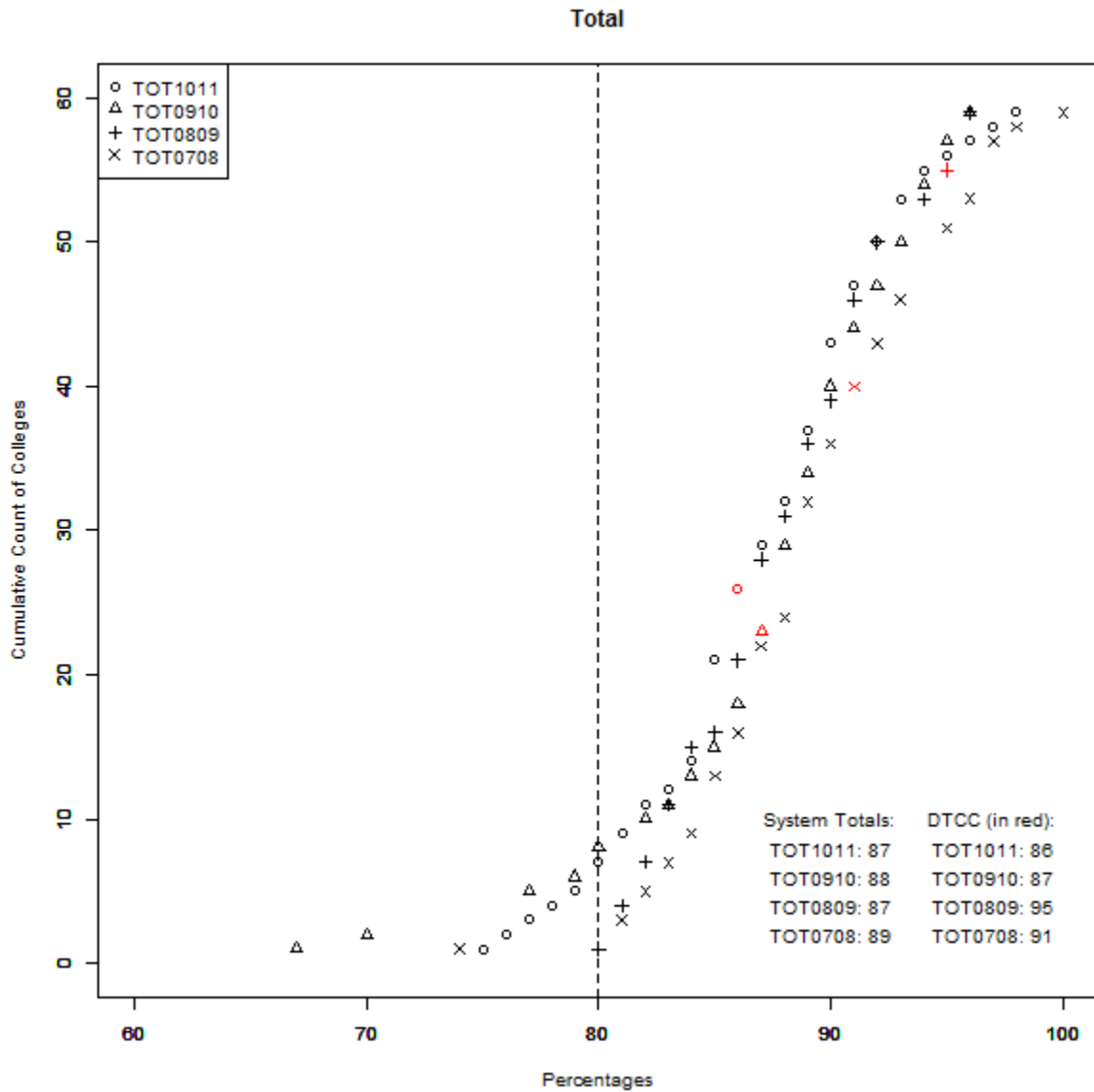


Figure for Table E: Total

PERFORMANCE OF DEVELOPMENTAL STUDENTS IN SUBSEQUENT COLLEGE-LEVEL COURSES