Dear manager,

I am a PhD student at Montclair State University and, alongside my advisor, we’ve developed a visualization of test item characteristics that we think your end-users (instructors) would appreciate. Currently you present item difficulty and discrimination in color coded numerical values, as you can see in the screenshot below.

A screenshot of a computer

Description automatically generated

Our visualization takes these numbers and presents them as a item characteristic curve, where the x-axis shows the level of ability and the y-axis a 50/50 percent chance of answering the item correctly. Instructors would be able to tell which items are acting good and which are acting poorly by looking at the shape and position of the curve. As you can see in the plot below, items whose curves are flatter indicate that the item doesn’t discriminate well between good and bad students; additionally, items that are to the left of the x-axis indicate that most students get the item correct regardless of ability, while curves to the right of the x-axis indicate items that mostly high ability students get right.

A graph of different colored lines

Description automatically generated

The formulas and processes are open source and fully free to any end user but we would be willing to help integrate these visuals into your LMS product if you need assistance. If interested in this general idea please feel free to reach out to us. Thanks for your product, we used it as both instructors and students. Look forward to hearing from you,

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