

General Education Thresholds^{*}

Standardizing the criteria of success for the revised General Education program

Dr. Clifton Franklund
General Education Coordinator

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Abstract

“Assessment is not a spreadsheet; it’s a conversation.” — Irmeli Halinen

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Introduction

Standardized scoring

VALUE rubrics for individuals

Need thresholds for courses

Methods

Data provenance

Data provenance refers to a system that permits tracking of the origin, movement, modification, and utilization of data sets (Buneman et al., 2001). The provenance of General Education data will be explicitly declared to facilitate the reproducibility and extensibility of these studies.

Location of public website files

All files related to this report can be found online at the Open Science Framework (Nosek, 2012). This site contains all of the files needed to reproduce this report from the de-identified data set. The site's url is <https://osf.io/t6u8m/>.

Session information

This report was written using RStudio (RStudio Team, 2015) and the R statistical programming language (R Core Team, 2013). These products are free to download for PC, Macintosh, and Linux operating systems. The following information pertains to the session parameters used to generate this report. If you have trouble reproducing this report, it may be due to different session parameters. You may contact Dr. Franklund if you need assistance.

R version 3.4.1 (2017-06-30)

****Platform:**** x86_64-apple-darwin15.6.0 (64-bit)

locale: en_US.UTF-8|en_US.UTF-8|en_US.UTF-8|C|en_US.UTF-8|en_US.UTF-8

attached base packages: stats, graphics, grDevices, utils, datasets, methods and base

other attached packages: pander(v.0.6.1), dplyr(v.0.7.2), purrr(v.0.2.3), readr(v.1.1.1), tidyr(v.0.7.0), tibble(v.1.3.4), ggplot2(v.2.2.1) and tidyverse(v.1.1.1)

loaded via a namespace (and not attached): Rcpp(v.0.12.12), cellranger(v.1.1.0), compiler(v.3.4.1), plyr(v.1.8.4), bindr(v.0.1), forcats(v.0.2.0), tools(v.3.4.1), digest(v.0.6.12), lubridate(v.1.6.0), jsonlite(v.1.5), evaluate(v.0.10.1), nlme(v.3.1-131), gtable(v.0.2.0), lattice(v.0.20-35), pkgconfig(v.2.0.1), rlang(v.0.1.2), psych(v.1.7.5), rstudioapi(v.0.6), yaml(v.2.1.14), parallel(v.3.4.1), haven(v.1.1.0), bindrcpp(v.0.2), xml2(v.1.1.1), httr(v.1.3.1), stringr(v.1.2.0), knitr(v.1.17), hms(v.0.3), rprojroot(v.1.2), grid(v.3.4.1), glue(v.1.1.1), R6(v.2.2.2), readxl(v.1.0.0), foreign(v.0.8-69), rmarkdown(v.1.6), bookdown(v.0.5), modelr(v.0.1.1), reshape2(v.1.4.2), magrittr(v.1.5), scales(v.0.5.0), backports(v.1.1.0), htmltools(v.0.3.6), rvest(v.0.3.2), assertthat(v.0.2.0), mnormt(v.1.5-5), colorspace(v.1.3-2), stringi(v.1.1.5), lazyeval(v.0.2.0), munsell(v.0.4.3) and broom(v.0.4.2)

Table 1: Proportions for simulated data for classes of different abilities

Rubric	Level	Deficient Sim	Beginning Sim	Progressing Sim	Proficient Sim	Advanced Sim
0	Deficient	0.50	0.10	0.00	0.00	0.00
1	Beginning	0.40	0.55	0.26	0.01	0.00
2	Progressing	0.09	0.30	0.49	0.39	0.10
3	Proficient	0.01	0.50	0.24	0.46	0.27
4	Advanced	0.00	0.00	0.01	0.14	0.63

Processing instructions

This project produced a computationally reproducible assessment report (this document). Anyone wishing to recreate this report from the source document will need to install the following on their computer:

1. An installation of the R programming language
2. An installation of the RStudio IDE
3. An installation of LaTeX

The necessary source files include the de-identified data set (BIOL200Data.csv), Rmarkdown code files (index.Rmd, 01-Introduction.Rmd, 02-Methods.Rmd, 03-Results.Rmd, 04-Discussion.Rmd, and 05-References.Rmd), bibtex reference file (references.bib), and custom art file in the /art folder.

To process the files, you must first open the project in RStudio. Click on the “Build Book” button in the Build menu. Bookdown allows you to build this project as `git_book` (html site), `pdf_book` (via LaTeX), or `epub_book` (compatible with iBooks and other e-book readers).

Citation of this work

All of the de-identified data, analysis code, and documentation that constitute this report project may be freely used, modified, and shared. The de-identified data set, BIOL200Data.csv, is released under the Creative Commons CC0 license. All documentation, including README.md, Codebook.md, and this report, are released under the Creative Commons CC-BY licence. Any questions, comments, or suggestions may be sent to Dr. Franklund.

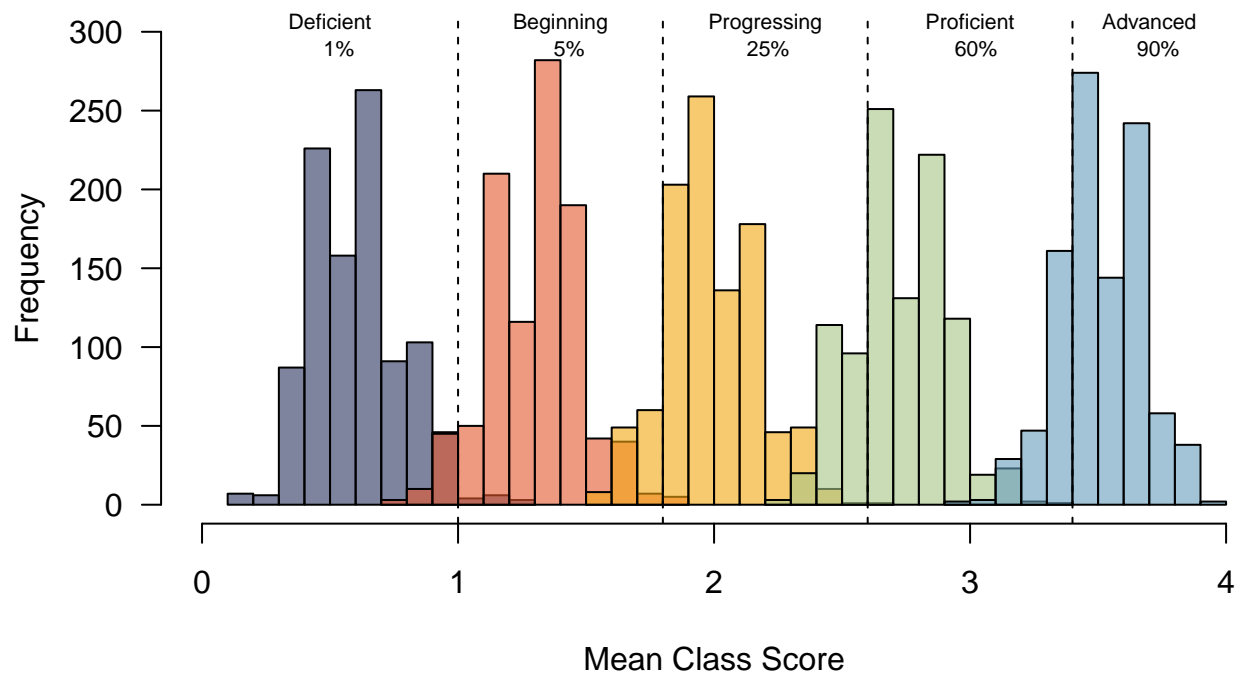


Figure 1: Score distributions from the simulated data

Table 2: Color pallet for score interpretation

Level	Score Range	Color (HEX)
Deficient	[0.00 - 1.00)	#29335c
Beginning	[1.00 - 1.80)	#e4572e
Progressing	[1.80 - 2.60)	#f3a712
Proficient	[2.60 - 3.40)	#a8c686
Advanced	[3.40 - 4.00]	#669bbc



Figure 2: Color scheme

Create proportional distributions

Generating simulations

Analysis

Results and Discussion

Summary statistics

Histograms

Color scheme

References

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