FERRIS STATE UNIVERSITY

# General Education Thresholds*

Standardizing the criteria of success for the revised General Education program

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## Contents



## Abstract

"Assessment is not a spreadsheet; it's a conversation." — Irmeli Halinen

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*Report number 1701, DOI 10.17605/OSF.IO/6KFDV

# Ferris State University

## 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

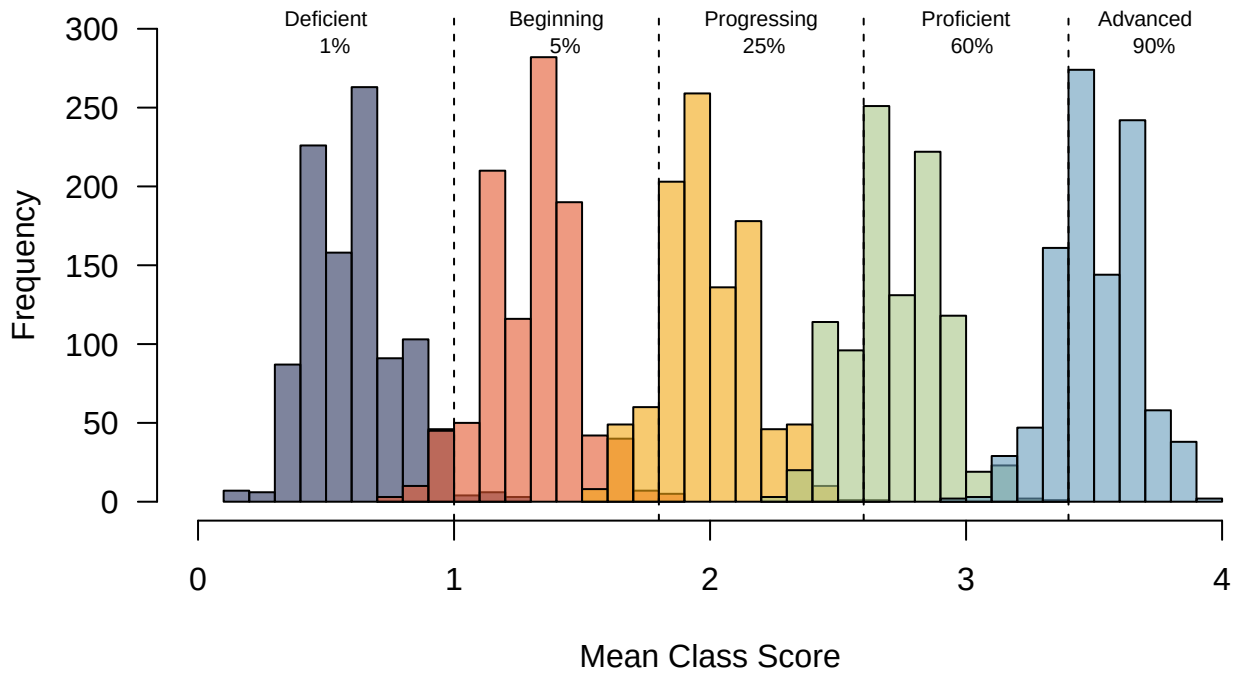


Figure 1: Score distributions from the simulated data

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

Buneman, P., Khanna, S., and Wang-Chiew, T. (2001). Why and Where: A Characterization of Data Provenance, pages 316–330. Springer Berlin Heidelberg, Berlin, Heidelberg.

Nosek, B. (2012). An Open, Large-Scale, Collaborative Effort to Estimate the Reproducibility of Psychological Science. Perspect. Psychol. Sci., 7(6):657–660.

R Core Team (2013). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria.

RStudio Team (2015). RStudio: Integrated Development Environment for R. RStudio, Inc., Boston, MA.