**Value of Mistakes**

**Overview:** This adaptation of Value of Mistakes consists of a PowerPoint presentation of Value of Mistakes.V2 handout with interactive question slides (UDL Checkpoint [5.1](http://udlguidelines.cast.org/action-expression/expression-communication/use-multimedia) & [7.2](http://udlguidelines.cast.org/engagement/recruiting-interest/relevance-value-authenticity)) and a revised reflection assignment. In-class questions range from a review of growth and fixed mindset (UDL Checkpoint [3.4](http://udlguidelines.cast.org/representation/comprehension/transfer-generalization)) to open ended questions about their experience with RStudio (UDL Checkpoint [7.2](http://udlguidelines.cast.org/engagement/recruiting-interest/relevance-value-authenticity) & [9.3](http://udlguidelines.cast.org/engagement/self-regulation/self-assessment-reflection)). These interactive slides are woven into the full class period discussing their experiences so far with R coding.

**Context:** This version of Value of Mistakes was created for a 1 credit hour introductory course in reading and writing scientific papers (SEMR 2051: Scientific Literacy). Students are mainly 2nd semester freshmen. My course generally has 50 students and is taught by a single instructor.

In class period 2, the module Introduction to Growth Mindset was utilized. This class activity reviews the concepts of growth and fixed mindset before connecting that information to the topic of making mistakes. The Value of Mistakes revision was used in class period 6. This activity was designed to be used for the entire 50-minute class period.

Students in our program are introduced to R/ RStudio during their freshman year and use of this tool continues in upper-level courses. In addition, the concepts of growth and fixed mindset are discussed in freshman seminar and again in Scientific Literacy. The adaptation focuses on the practical application of a growth mindset in the face of a challenging task (learning to use and code in RStudio) in hopes of both encouraging students to persist in the task and, ultimately, within major.

**Activity Overview**: This activity addresses the following learning objectives:

1. Address common errors in R coding from Swirl modules 1 & 2 (www.swirlstats.com).
2. Add data set and successfully create a scatter plot in R.
3. Apply a framework that sees the benefit that making mistakes provides in the learning process.

**Resources Needed**

* Value of Mistakes.V2 handout
* Value of Mistakes slides (interactive slides updated with your chosen tool and linked to your personal account)
* Access to R Studio and links to Swirl Stats
  + Directions for installing R, RStudio, and Swirl are included in the link above.
  + Students with a Chromebook or similar device should register for a QUBES account (<https://qubeshub.org/register>) and should use the site-hosted software (<https://qubeshub.org/tools/rstudio>) which is available for free.
* “R Data” file (or another of your choosing – just update the reference in the slides)

**Activity Description**: To prepare for this class session, students should review the Value of Mistakes.V2 handout and complete modules 1 & 2 in Swirl. Instructors should create their own interactive slides using the tool of their choice and remind students to bring their devices to class.

During the class period, the instructor leads a discussion of the information presented in Value of Mistakes and the interactive questions. In addition, students are asked to work during the class period to create a scatter plot from a given data set using instructions from their course textbook (Beckerman, Childs, and Petchey 2017).

The follow-up assignment provides an opportunity for both self-assessment and deeper reflection (UDL Checkpoint [9.3](http://udlguidelines.cast.org/engagement/self-regulation/self-assessment-reflection)). Students are asked to reflect on the mistakes they have made while learning R and talk about their actual reaction and future goals in relation to these mistakes. This may be submitted as a written or visual reflection (UDL Checkpoint [4.1](http://udlguidelines.cast.org/action-expression/physical-action/response-navigation)).

**Works Cited**

Beckerman, Andrew P., Dylan Z. Childs, and Owen L. Petchey. 2017. *Getting Started with R: An Introduction for Biologists*. OUP Oxford. ISBN: 978-0198787839