

Teaching Professional Skills in the Statistics Classroom through Authentic Assessment

May 26, 2022

Diana Skrzydlo

Assessment Is Curriculum

Professional Skills

- Teamwork
- Technical writing
- Presentations
- Feedback
- Reflection

Activities/Assessments

- Assignments/Tests/Exams
- Group Projects
- Reports
- Presentations
- Oral Exams
- Reflective Writing
- Wildcard!



Assignments/Tests/Exams

- At least 20% of marks are communication-based
 - Explain whether a model is appropriate for a situation
 - Logically justify why mathematical results make sense
 - Describe how results obtained
 - State conclusions in context
 - Make recommendations
- Best practices
 - Ask these kinds of questions consistently
 - Great principles from session yesterday!



Group Projects

- Pick a topic and model it with a Markov chain
 - E.g. music, degree progress, disease progression, elections
- Design, conduct, and analyze an experiment
 - E.g. cookies, effect of coffee/alcohol on math performance
- Pick a topic, find data, and forecast using models
 - E.g. unemployment, university enrollment, tourism, temp
- Best practices for group work
 - Accountability – within- and between-group peer evals
 - Guidance on effective team work, meetings



Reports

- Group projects
- Choice of articles to read and summarize
- Memo presenting findings and recommendations of technical analysis
- Summarizing product and making recommendation
- Best practices for writing assignments
 - Early-bird deadline to get feedback and resubmit
 - Exemplars



Presentations

- Group projects
- Persuasive
- Individual research project
- Summarizing material from other sources
- Best practices for presentations
 - Make material part of curriculum
 - Guidance on effective structure, slide design, delivery

Reflective Writing

- Reflect on goals and/or what they have learned
 - Summarize important course concepts in plain language
 - Describe a problem you struggled with but now understand
 - Discuss what made you want to study this topic
 - Explain whether you achieved your goals for the course
 - What did you learn from an in-class activity or project
- Best practices for reflections
 - Give a framework: “What? So What? Now What?”
 - Respond authentically

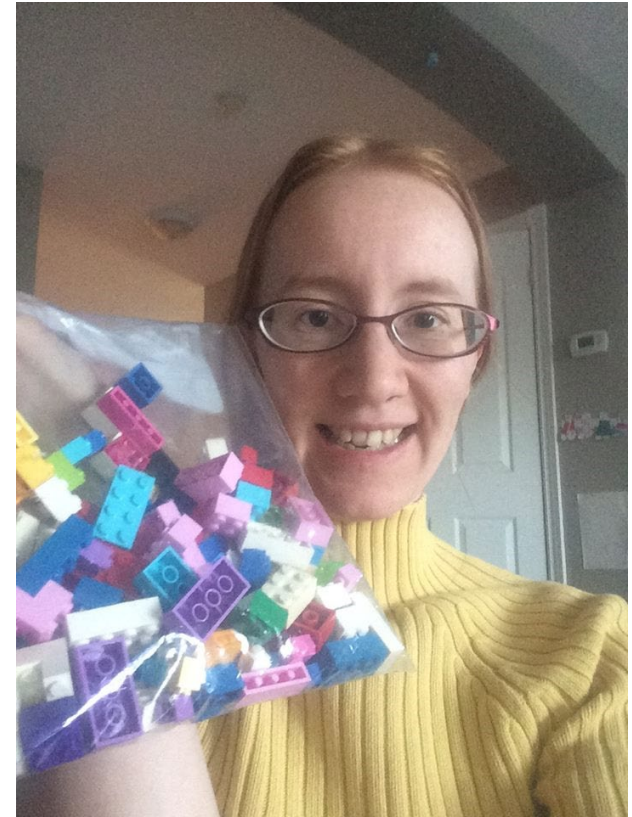


Oral Exams

- Focus on explaining conceptual ideas in words
- Able to ask for clarification
- My format: 15-minutes, 5 questions
 - Definition, Advantages/Disadvantages, Compare/Contrast, Describe a Process, Predict the Impact
- Best practices for oral exams
 - Clear expectations, rubric for fair grading
 - Give students time to practice

Wildcard Activities

- LEGO communication activity
- Answering sample client emails
- Article presentations with variable time limit
- Escape room in a box
- Debates
- Negotiation exercise
- Your ideas?



dkchisho@uwaterloo.ca

[@ActSciProf on Twitter](https://twitter.com/ActSciProf)

uwaterloo.ca/scholar/dkchisho/blog

