

An Innovative Assessment Paradigm: From Classroom to NSF-Funded Study









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Michael A. Posner, Associate Professor of Statistics, Villanova University
Nancy R. Lawrence, 21st Century Partnership for STEM Education & Research for Action

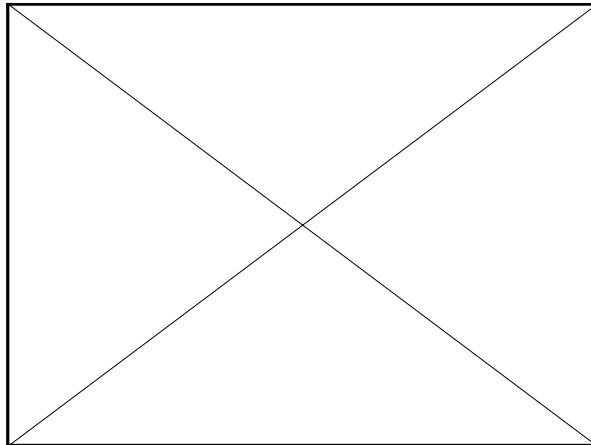
WHAT IS PARLO?

- ❖ Proficiency-based
- ❖ Assessment and
- ❖ Reassessment of
- ❖ Learning
- ❖ Outcomes

...also known as:

- Standards-based grading
- Mastery learning

- ❖ Based on Formative Assessment Theory



Theory Behind PARLO

- Formative Assessment
 - Assessment FOR Learning
 - Wiliam & Black: “all activities that teachers and students undertake to get information that can be used diagnostically to alter teaching and learning
- Teaching/Learning through Feedback vs. Grades
- There is no math gene
 - Gauss: “It is not knowledge, but the act of learning, not possession but the act of getting there”
- Accumulating knowledge/skills rather than points

THE THREE COMPONENTS OF PARLO

- ❖ Well-defined **Learning Outcomes** ensure that students, teachers, and parents/guardians understand the scope and specific goals of each course.
- ❖ **Proficiency-based Assessment** clearly communicates students’ skills and knowledge to future teachers, universities, and employers.
- ❖ **Reassessment** transforms the classroom to a student-centered learning environment that encourages students to remediate and master material they did not understand when it was first taught.

LEARNING OUTCOMES

- ❖ Observable and measurable skills or concepts
- ❖ Clearly defined for students, teachers and parents
- ❖ Grade-level appropriate and achievable
- ❖ Complex enough to allow for strategic thinking
- ❖ In PARLO...learning outcomes are defined by teachers (or groups of teachers) and are aligned with state standards

SAMPLE ALGEBRA I LEARNING OUTCOMES

- ❖ Solve single-variable inequalities and graph solutions.
- ❖ Represent patterns using tables, equations, and graphs.
- ❖ Determine the effect of slope on a graph, including parallel and perpendicular lines.

Proficiency-based Assessment

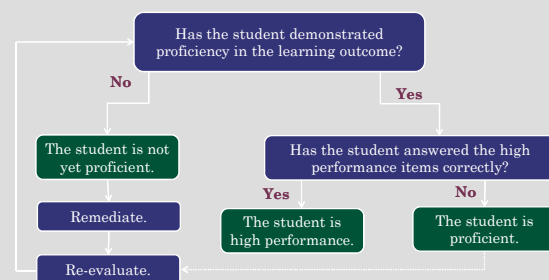
- ❖ Proficient – shows an understanding of the material
- ❖ High Performance – Demonstrates mastery, does not need to be perfect
- ❖ Not Yet Proficient

Pythagorean Theorem

- Proficient
 - If one leg of a right triangle is equal to 5 feet, and the hypotenuse is equal to 13 feet, what is the length of the other leg?
- High Performance
 - 10 and 14 are two sides of a right triangle. What are the TWO possibilities for the third side?

Nora Oswald, 9th grade PARLO teacher

FLOW CHART OF PROFICIENCY-BASED ASSESSMENT AND REASSESSMENT

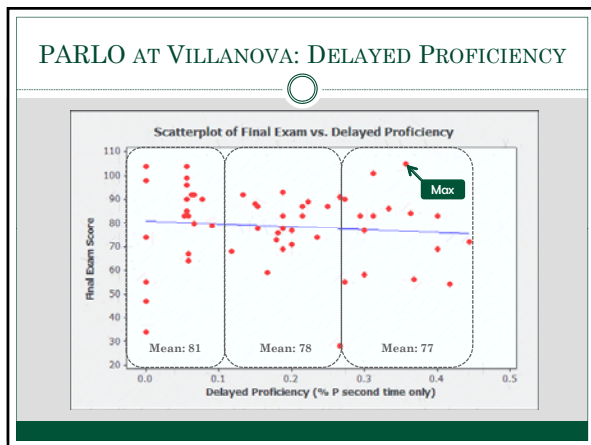
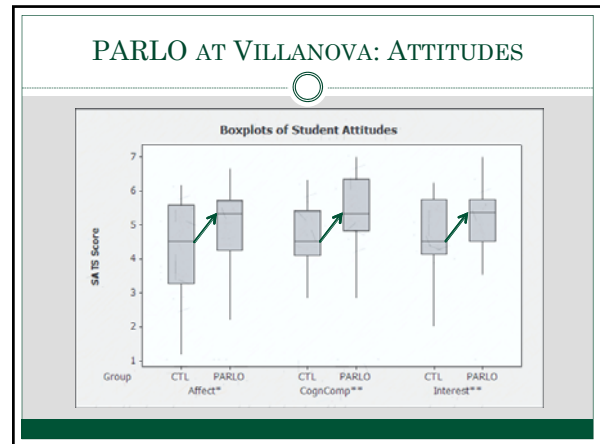
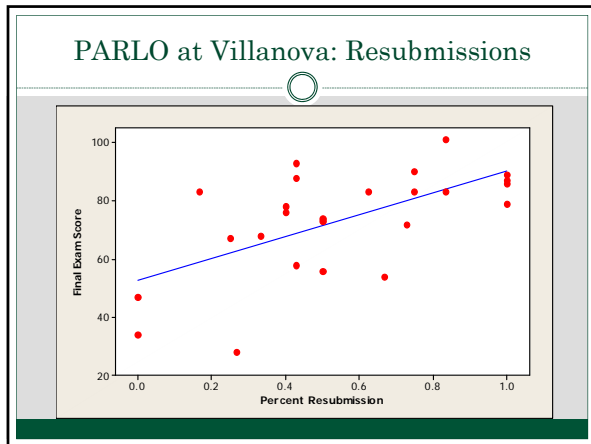


PARLO FAQ

- What counts as evidence?
 - Homeworks, quizzes, exams, projects
 - Working a problem at the board
 - Explaining an answer (in office hours)
 - A conversation between teacher & student
 - Teaching the concept to another student
 - Identifying flaws in an argument
- How much credit is awarded for reassessments?
 - FULL!
- Do students get grades?
 - No...in an ideal world. A conversion is done.
 - Ex: Grade = 30 + 55 P or better + 15 H
 - Some require a specific number of P to pass

PARLO Evidence

- ❖ PARLO-like systems currently used in many districts nationally
 - ❖ An urban school in Chicago
 - ❖ Highest grad rate of non-selective public schools
 - ❖ >95% of graduates admitted to college
 - ❖ >85% of initial cohort still in college in 2005-06
 - ❖ Quakertown Community School District
 - ❖ Lead to increased performance on standardized tests
 - ❖ Villanova University - intro statistics for non-majors
 - ❖ Students who resubmitted more did better on final exam
 - ❖ Students demonstrating proficiency the second time performed equally well on final exam
 - ❖ PARLO class showed better attitudes towards statistics



PARLO STUDY

- ❖ \$2.4 million, 4-year study: a randomized controlled trial on the effects of the PARLO system on 9th grade algebra & geometry students' engagement, attitude, & achievement currently in 29 High Schools in SE Pennsylvania
- ❖ Required teacher buy-in as well as administrators
- ❖ Participants
 - ❖ District type: mix of urban, suburban, & rural
 - ❖ School Types: public, charter, and single sex (girls) Catholic
 - ❖ 29 schools with 80 teachers and 3,000+ student

- ### PARLO Teacher Support
- **Training**
 - All Teachers: Training in learning outcomes
 - PARLO teachers: Reassessment and Tracking Software
 - **Professional Learning Communities**
 - Monthly for PARLO teachers
 - **PARLO Assessment & Content Coach**
 - **Compensation**
 - Teachers are compensated for their time

- ### Outcomes of PARLO Study
- ❖ **Achievement**
 - ❖ Improved content mastery on pre/post algebra/geometry instrument
 - ❖ **Attitudes**
 - ❖ Improved enjoyment, motivation, self-confidence, and value of mathematics (ATMI)
 - ❖ **Engagement**
 - ❖ Increased effort leads to increased performance
 - ❖ **Promoting STEM educated students**
 - ❖ Intention to take more STEM classes or major in STEM in college

Changes in Teachers' Instructional & Assessment Practices

- *This is a grading policy that I have been waiting for all my career, I just didn't know I was waiting for it.*
- **I feel like a brand new teacher again because I am looking at different ways to reach the different kids.**
- *I have a student who was at the lower end of the interquartile range. She now has one of the highest grades in the class because of this. She's really been on top of it.*
- **Formative assessment helps me catch little errors along the way...I can respond with detailed notes on these little slips of paper...I want to check their learning right now. Students can also write notes on their exit slips, 'I don't understand.' 'Can I come in tomorrow for help?' And it's a good way to touch every single kid on the way out the door.**

Administrators' Perspectives on PARLO

- *As the Supervisor of Secondary Curriculum at [King] School District, I attended the PLC yesterday to talk with our teachers & see how they are doing. I left on a high! Our 4 teachers are so excited about PARLO. They said their students have shifted away from the accumulation of points to wanting to be highly proficient in a skill area. That is a huge jump for our students to take.*
- *As a believer in performance-based assessment & a practitioner in this over 20 years ago when I taught vo-tech ed, I have firsthand experience on the benefits of this type of assessment. I am so pleased that our teachers are a part of this pilot program. It can truly change student attitudes towards learning.*

PARLO Contact Information

Web Site: <http://www.parloproject.org>

E-Mail: Nancy Lawrence, PI nlawrence@21pstem.org
 Michael Posner, Co-PI michael.posner@villanova.edu
 Kathleen Krier, Co-PI kkrier@21pstem.org
 Barbara Stankus, Co-PI bstankus@21pstem.org

Phone: (610) 825-5644

Change is Hard!

If you would attain to what you are not yet, you must always be displeased by what you are. For where you are pleased with yourself there you have remained. Keep adding, keep walking, keep advancing.

--- Saint Augustine

*This talk will be available on
www.parloproject.org
homepage.villanova.edu/michael.posner*