

Slaying the Cram-Pass-Forget Dragon

SCL 2014 Summer Conference

John D. Mays, Novare Science and Math/Regents School of Austin

1. Mastery: Why is this pill so hard to swallow?
 - a. Is talk of mastery only lip service?
 - b. Thought experiment: How would your students do?
 - c. Program for International Student Assessment (PISA) 2012 ratings place US students 36th in math literacy and 28th in science literacy (cf. 17th in math literacy in 2009)
2. The CRAM-PASS-FORGET cycle: Bane of our nation
 - i. The norm for nearly every school
 - ii. The worksheet blues: Education as entertainment, activity, busy work
 - iii. Final exam review: The impossible dream
 - iv. Teachers depend on failed conventional practices and cajoling
 - v. Content overload and educational tourism
 - vi. A travesty we can end
 - vii. A powerful witness
 - viii. Replacing Cram-Pass-Forget with Learn-Master-Retain
3. Slaying the cram-pass-forget dragon: Major principles for mastery-based pedagogy
 - a. First principles
 - i. No superfluous content
 - ii. No busy work; assignments support specific learning objectives
 - iii. Review and rehearse time 30–40% of total time on subject
 - iv. Embedding the tools as a way of life
 - b. Implementing mastery-oriented pedagogy
 - i. Promoting retention: Structural elements that need to be there
 1. Cumulative assessments
 2. No credit for homework (screams of protest!)
 3. Optimize assessments for student age
 - a. Grades 7-10: Weekly cumulative quiz
 - b. Grades 11-12: Major exams with Standard Problems List
 4. Teacher expectations for prerequisite retention
 5. Host occasional review days with competition (younger grades)

- ii. Enabling strategies: Aids to help the horses reach the drinking water
 - 1. Objectives lists
 - 2. Weekly review guide (grades 7–9)
 - 3. Answers along with the assignment
 - 4. “Daily Question” routine for verbal practice
- 4. These strategies have proven to be effective—scores of testimonials from teachers, students and parents
- 5. Final advice: expecting mastery doesn't require being mean
 - a. Advocate for students
 - b. Loving, friendly environment
 - c. Be eager to help them succeed
- 6. With steady, persistent effort your students will know the pleasure and confidence that comes from *real* achievement