The Monte Carlo Quiz

*Encouraging completion of pre-class assignments with the roll of a die*

Let’s face it: most of our students just do not do the pre-reading or homework that you want them to do prior to coming to class.  Why?  Those who research this sort of thing would suggest that it is because they do not see the need or value in doing so.  And, they do not have the intrinsic motivation to overcome this perceived lack of value.  Unfortunately, simply telling students that something is important and that they will need it later – either for the test or in the workforce – just does not carry enough weight to increase intrinsic motivation and get them to do the pre-reading and/or other pre-class assignments.  So, how can we help them find a little more motivation?  By creating extrinsic motivation and helping students find value in the assignment by making them routinely accountable for it.

There are many options for increasing accountability and encouraging students to do the pre-reading and many incorporate some sort of assessment – usually at the beginning of the class in which students will need and use the information.  Making these assessments periodic and random is more useful than a routine schedule (Ruscio, 2001).  One such tool that students seem to value and enjoy is Fernald’s Monte Carlo Quiz (MCQ).  Fernald (2004) originally developed the MCQ for upper division undergraduate psychology courses to not only inspire students to do the reading, but to also encourage them to read at a deeper level, to truly try to understand the content, and to enhance retention.

Design

In Fernald’s original iteration of the MCQ, he wrote five standard questions that could be applied to all assigned readings: 1) Knowledge of the content, 2) Comparison of two ideas in a reading, 3) Application of the concepts to the student’s life, 4) Critique of an idea within the reading with a rationale for agreeing or not, and 5) Passion in which students identify some passage from the reading that elicited an emotional response.  Students were routinely assigned six chapters or articles for pre-reading.  The Monte Carlo name of the method comes from the way in which randomness was determined – by up to three rolls of a die.

Implementation

At the beginning of class, a student rolls a die.  An odd number on this first roll means “no quiz” and class proceeds.  If an even number is rolled, there will be a quiz and the student rolls the die a second time to determine over which of the assigned readings the quiz will be.  The student’s third roll of the die then determines which of the five previously mentioned questions students will address, with six being student’s choice.  Student question responses were limited to one paragraph of no more than eight sentences and graded on a four-item scale from Exceptional to Unsatisfactory.

Results

Fernald reported that students reported increased motivation, doing more pre-reading, and preparing more deeply than they might otherwise.  In addition, they liked the format and felt as if they had more control of the process.  He also stated that his teaching transitioned to more active learning and problem solving because the students were better prepared.

Modifications

The MCQ format can be modified to fit almost any instructor’s needs by adjusting the question types and formats, the pre-class assignments, and who generates the questions (students vs. instructor).  Others have found similar student and teaching outcomes.

References

Carney, Amy G, Sara Winstead Fry, Rosaria V Gabriele, and Michelle Ballard. 2008.  "Reeling in the big fish: changing pedagogy to encourage the completion of reading assignments."  *College Teaching* 56 (4):195-200.

Fernald, Peter S. 2004.  "The Monte Carlo Quiz: encouraging punctual completion and deep processing of assigned readings."  *College Teaching* 52 (3):95-99.

Ruscio, John. 2001. "Administering quizzes at random to increase student reading."  *Teaching of Psychology* 28 (3):204-206.

Simonson, Shawn R. 2017.  “Modifying the Monte Carlo Quiz to increase student motivation, participation, and content retention.”  *College Teaching* 65(4):158-163.

**Submitted by:**

Shawn Simonson

Faculty Associate, Center for Teaching and Learning

Professor, Department of Kinesiology

Boise State University