Peer Teaching Reflection Guide – Mike Sorice – Make a Saving Throw Against Losing Your Seat

Mathematical Practice	Evidence of Success	Missed Opportunities/Rationale for not addressing
Make sense of problems and persevere in solving them	• After long struggle, students produced viable answers to problem 4 which they were able to explain. • Student answers to questions regarding 4a and 4c in particular indicate use of structure to ease computation ("We don't need to do 4a because 4c will be the same thing, because these all sum to 1…") • Students shared and debated results to problems 1-2 (class discussion) and 5 (student-led discussion.)	• A great deal of time was spent in unproductive struggle on especially problem 3 and problem 4a. Clearly, more accommodation was required for students unprepared for these. (Teacher notes after run-through indicated students found problem 3 slightly subtle – more preparation along those lines might have gone a long way.) • As a result of slow progress on problems 3-4a, problems after 7 were not engaged, missing entire major parts of lesson and concomitant opportunity for problem-solving, especially designed struggle area at 10c/11.
Reason abstractly and quantitatively	• Student answers to 2 and discussion thereof indicate reasoning about expectation. • Student answers to 5, and 6 show a beginning level of abstraction/generalization of familiar model (dice) to new setting (airline no-shows,) a key goal of lesson. • While a sidebar to the main lesson, fair student answers in discussion of relation of "probability" to "expectation" are good evidence of this sort of thought.	• Statistical nature of lesson mainly entails concrete reasoning. • Apparent student unfamiliarity with random variables coupled with sheer difficulty of launch in this regard to leave little chance to recover and progress. In fact, responses to 3 show students concretizing exclusively, stating numeric formulae where a much quicker abstract or even verbal answer was called for. Problem was clearly not clear enough! • More abstract parts (relations between random variables – problems 8-10) not reached.
Construct viable arguments and critique reason of others	• Class discussed and debated results for problem 5 in ersatz share/summarize phase. • Further, this seemed structured well: Student on behalf of one group presented results while other groups were prompted to ask questions.	• Not a major focus of lesson, though of course present as inherent in all proper mathematics. • Unproductive struggle with early problems and computation foreclosed time designed to be spent here.
Model with mathematics	• The major focus of lesson engaged: student answers to 1-2 and 4 indicate recall/reconstruction of somewhat familiar model. • Further, answers to 5 show abstraction/extension of model to unfamiliar situation. • Student replies to debate/discussion on 5 will have advanced student understanding in this regard.	• Incompletion of lesson prevented further modeling/application of model to determine further quantities of interest. • Especially unfortunate in this regard is lack of exposure to question 13.

Mathematical Practices	Evidence of Success	Missed Opportunities/Rationale for not addressing
Use appropriate tools strategically	• Students used various functions, "on paper" and using calculator, especially to answer question 4. • Student responses to 4a especially indicate refinement in use of c.d.f. and p.d.f. due to structural considerations.	• Not an explicit focus of lesson, though retrospect indicates that this is a major implicit focus! (Initial teacher expectation was that these tools would be fairly well known to students, which was not evident in result.) • Slog through 4a especially and lack of time due to unproductive struggle left little opportunity to discuss which tools best suited for computation, as intended.
Attend to precision	• Student papers show fair degree of proper use of terms such as p.d.f. and c.d.f. • In verbal exchanges, student language seemed to grow more precise and refined.	• Teacher failed to anticipate or quickly measure and react to degree to which random variables would be unfamiliar to students – as with tool use, this could have been a major lesson focus to allow further progress. • Students indicated fairly high degree of reticence to discuss math accountably ("I'm bad at English") which led teacher to tread lightly in this area.
Look for and make use of structure	• Student written and especially verbal responses to 4 show growing awareness of structure to ease computation, a major goal of lesson. (C.f. "Make sense of…" evidence.)	• Further opportunities for progress in this standard lost to time, leading to lesson unbalanced toward modeling standard.
Look for and express regularity in repeated reasoning	• Some evidence in written approaches to 4a vs. 4b and 4c vs. 6, though these are mainly structural.	• Not a major focus of lesson; number of situations modeled are too few to properly engage. • Possibility to engage further mostly lost to premature end of lesson.