Polishing Exams Like Building A Skyscraper

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This short essay is to discuss how to design exams efficiently. The main idea is to build on previous question statements and collect potential confusion to polish question statements.

Confusion is everywhere. It is very important to remember that it takes repeated efforts to refine a well-defined question. There is no reason to take for granted that questions are raised well-defined. Even in peer-reviewed journal papers, questions are articulated via a series of work building on previous endeavors.

Confusion causes disputes in understanding and grading, which are time-consuming for faculty and students. Exams with well-defined questions incentivize students to work hard. Asking well-defined and clarified questions also sets examples of academic writing.

I.   Question Types

From my teaching experiences, "Multiple Choices," "Filling a Blank," and "True or False" are among the top choices for two reasons. First, the answers required are concise. There is little space for statement flexibility. These answers are machine-readable, so **manual grading errors** can be avoided. What is more important, a well-answered question should not be ambiguous. Instead, the answer should be succinct and measurable.

II.   Declaration of Answer Formats

Confusion arises when answers have multiple expressions. Give explicit requirements of formats. Clarify any deviation from the correct answers gets zero points. **Being accurate is a necessary habit in finance industries.**

- Clarify whether the format should be in percentage or decimal forms
- Only correct answers will get full points. Any other answers get zero points. No exceptions can be made for: 1. partial correctness; 2. providing steps and failing to give the right answer.

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III.   Successful Submissions

Submission via digital equipment is convenient and flexible. No hard copies mean data corruption needs more attention. **Saving, backing up, and checking file completeness** are extra steps in the digital era, which are often ignored until learning from a big loss of work.

- Put this in front of any online tests or homework: Students have the responsibility of saving, backing up, and checking file completeness of the materials required to submit **even after finishing submission**. Download the files you submit and check whether they are complete and look correct. If (1) submitting the wrong files, or (2) the files submitted are corrupted and not resubmitted before the announced deadlines, grading is based on what you submitted before the deadline. Resubmission after the deadline cannot recover the points.

I can teach students about this lesson in a hypothetical setting. Ask them to submit via a system which automatically corrupts every single file. Then ask how many of them check the files.