Getting Students to Think Like Actuaries

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Outline

• Motivation
• “Think Like an Actuary” Integration
• Student Outcomes
• How Can You Use These Ideas?
Motivation

• Recently completed FAP
• Now teaching Life Contingencies again
• Gap between exam-prep calculation questions and nuance of actuarial work
• Communication of ideas as important as ideas
• Professionalism/ethical issues
• Goal: Prepare students earlier for these challenges
“Think Like an Actuary”

- In Class: brainstorming in many classes
- Tutorials each week: one question
- Assignments: one question each requiring a one-page report
- Tests: one part of one question each
- Final Exam: many parts of questions
In Class

Brainstorming
• Factors that affect mortality
• Sources of expenses for insurer

Explaining
• Why variance/mean is higher/lower for different products
• Why mathematical results make sense
Tutorials

- Guaranteed/simplified issue products
- Impact of self-driving cars
- Debate on genetic testing
- Relationships between values
- Covariance between PVRVs
- Charity as beneficiary
- Concerns with high commissions
Assignments

• Discuss advantages, disadvantages, and considerations of including certain rating factors in mortality models
• Compare choice of two different actual insurance policies for a theoretical client
• Reflect on all the “Think Like an Actuary” questions – what was most interesting?
Tests and Exams

- 20% of marks on all my assessments is for explaining results in words
- Insurable interest
- Recommendation for client
- Why certain relationships exist
- Effect of age on impaired mortality reduction
Student Outcomes

- Extremely impressed with depth of thought
- Quality of writing varied widely
- Insight into complexity of actuarial work
- Learned to consider external factors/context
Student Outcomes - Beginning

“Do I have to actually write a sentence?”

“How many words? Double or single spaced? What margins should we use?”

“So... this is basically an English course now?”
Actuarial work is **art - not just science**. One brings together their **actuarial judgement** and views, collects data, and then modifies their views.

Actuaries have to make decisions **not only based on numbers** but also based on economical, social, and political factors.
I have learned to consider actuarial topics from a different perspective than I typically would have. I realized that it is important for actuaries to be skilled in more than just crunching numbers, but to be well rounded and capable of analytical thinking.

The most insightful skill I have acquired is to consider the perspective of the public as well as the insurance industry.
These aspects really brought the actuarial career into a new light for me. Being an actuary is not only being able to calculate risk using complex mathematical equations, but also adapting to the changing society both technologically and socially. It's about tackling problems from different angles and creating the best solution that will benefit all parties.
How Can You Use These Ideas?

• You can always incorporate actuarial thinking into class, assignments, and tests
• Keep a list of ideas
• Use what’s in the news
• Don’t be afraid to ask hard questions – your students may surprise you!
Thank You

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