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?

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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

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“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

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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

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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

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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?

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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

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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

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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?"

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Student Outcomes - End

> “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.”

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Student Outcomes - End

> “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.”

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Student Outcomes - End

> 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.

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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!

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Thank You

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