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# Getting Students to Think Like Actuaries: Incorporating Professionalism in the Classroom

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One of the things that is most important to me as an educator is teaching my students what they will need to be actuaries, not just what they need to pass exams. I want to build up their intuition, problem-solving skills, communication, and ability to look at the big picture, as well as instill a strong sense of ethics and knowledge of external forces. I truly think it's never too early to get students to examine actuarial work in a more nuanced and sophisticated way.

I taught an introductory life contingencies course last winter, which was a perfect time to incorporate some of these ideas into my course design. Thus, I developed a segment called “Think Like an Actuary” (TLA) to get students to think about the more complex issues that actuaries face, not just the formulas.



I included TLA activities in many lectures (having students brainstorm ideas and collecting them on the board), in every tutorial activity (work they could do in groups and hand in, with instructors and TAs there to assist them), in every assignment (requiring them to write a one-page report), and on both midterms and the final exam (with limited time, somewhat more closed-ended questions), so it was truly fully integrated into the course.

Some TLA examples include:

- How can insurers afford to offer guaranteed issue policies? Would you buy one?
- Should it be allowable to use genetic testing information to price policies?
- What are the pros/cons/considerations of using firearm ownership as a rating factor?
- Compare the features of real insurance policies and make a recommendation to a client.
- Identify concerns with a commission structure that pays agents a large amount when policies are first issued.

Although students were hesitant at first, asking “so you want me to write a sentence?” and questioning why I was asking them things that were not specifically in the textbook, it didn't take long before students saw the value. They began having spirited discussions and debates, looking at underlying assumptions with a critical eye, considering multiple perspectives, and realizing the nuance of actuarial work. I was pleasantly surprised at the depth of thought that these young students (most only in second year!) were able to come up with, once they were encouraged to.

For part of their final assignment, they had to look back on all the TLA topics they had seen and write a reflective paper about what they found most surprising or interesting. I was overwhelmed by the responses. Students said things like:

- “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.”
- “I find it interesting how changes in technology constantly impact the insurance industry and how actuaries must use

their analytical skills to respond quickly and precisely to such changes.”

It was amazing to see how much the students learned, and how deep they were able to extend their knowledge in their first life contingencies course.

If you would like to incorporate some of these ideas into your own actuarial teaching, here are some of my suggestions:

- **Start small.** You can always incorporate actuarial thinking into class, assignments, and tests, whatever you’re comfortable with. You can start with one or two ideas and add more later.
- **Keep a list of ideas.** Whenever something strikes you (a question a student asks in class, or just random inspiration), write it down. Then when you’re creating your tests/assignments, you can draw from your list.
- **Use what’s in the news.** It’s always neat for students to see the relevance of what they do in class to the outside world. For example, how do they think COVID-19 will affect the insurance industry?

- **Don’t be afraid to ask hard questions.** Your students may surprise you!

Best of luck helping to develop the next generation of thoughtful, professional actuaries!

If you like these ideas and would like to hear more, join us for the E&R Section sponsored webcast “Innovations in Actuarial Education” on Wednesday Aug. 19. I will be joined by two other experienced actuarial educators (Vicki Zhang from the University of Toronto and Alisa Walch from the University of Texas at Austin) to discuss many teaching techniques you can use. For more information and to register, please visit <https://www.soa.org/prof-dev/webcasts/2020-innovations-actuarial-education/>. ■



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