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

By Diana Skrzydlo

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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Navigating the Educational Rainbow: Creating an Inclusive Learning Environment for LGBT+ Students

By Dr. Jelena Milovanovic and Joe Davis

It is hard to believe how much cultural change has occurred in the past decade in the United States for the LGBT+ (Lesbian, Gay, Bisexual, and Transgender) community. Approximately 5 percent of the population currently identifies as LGBT+ (2017 Gallup Poll). Citing that percentage is very controversial however, as many people disclose their identity at different stages of life, if at all. Other estimates, like the old ones from the Kinsey Institute at the University of Indiana, suggested the percentage is more like 10 percent of the population, particularly when same sex experiences are reflected. In any case, even at 5 percent of the population, it is still well above 10 million people in the U.S. As a result of these numbers and the legality of marriage equality in most developed countries, we have experienced a shift in the cultures of our classrooms, places of work, and professional practice. By overviewing cultural changes and providing relevant best practices for the classroom, a more inclusive environment can be produced that assists in meeting the needs of our students and profession. As faculty, we hope to provide educational practitioners with some useful guidelines for best practices for creating an inclusive and productive learning environment in your actuarial science courses. For the purposes of this article, LGBT+ is used to recognize individuals who belong to various populations in regard to sexual and gender identities and expressions.

CURRENT CULTURE

One of the largest impacts to the LGBT+ community in the past decade was the result of *Obergefell v. Hodges* Supreme Court case in 2015. As a result of this court case, all states and territories of the U.S. were required to recognize and perform same sex marriages. The impact of this decision cannot be underestimated. On the personal level, individuals in same sex relationships are able to see their relationships recognized, legitimized, and supported by their government. Prior to this decision, it is easy to see the marginalization of the LGBT+ community and how they existed without the same rights as those who were able to marry and share the included benefits. Besides the personal value of recognizing the relationship, there is the significant financial impact related to spousal benefits. After the marriage equality decision, same sex married couples are now able to receive the standard benefits through marriage that includes tax and employment benefits mandated by law. Even with the Supreme Court rulings, there are still legal battles regarding the extent of benefits offered to same sex couples. In addition, LGBT people can still be fired, evicted from an apartment, and denied public accommodations, unless they live in one of the 22 states that has passed non-discrimination laws for them.

Almost five years post legalization of marriage equality, there is still evidence that the LGBT+ individuals face discrimination and double standards in STEM disciplines. The field of

actuarial science involves advanced studies of mathematical principles, making it included under the umbrella of STEM. While same sex couples in the United States can legally marry, there are several other areas in which this population may experience discrimination, such as with employment. In some states, individuals may be terminated from employment due to their sexual or gender identity. Initiatives by the governing societies, Society of Actuaries (SOA) and Casualty Actuarial Society (CAS), include diversity as a core value and a strategic imperative for the success of the actuarial profession. Insurance businesses, from individual company programs to industry-wide initiatives, have been committed to driving diversity at all levels and creating inclusive and engaging cultures that effectively serve all stakeholders (Insurance Information Institute). Many insurers require unconscious bias training for employees, especially for hiring managers, and the insurance industry as a whole now participates in the DIVE IN festival for Diversity & Inclusion in Insurance each year, in cities around the globe. Moreover, each year the industry comes together to educate themselves and share best practices on Diversity & Inclusion. One reason attributed to this transformed point of view is that actuarial science students perceive the profession as way ahead on LGBT+ issues. These students view the profession as an educated group where inclusion is correlated with education (Gebhardtsbauer, 2018). Thus, change needs to begin in the actuarial science classrooms, which at times may be particularly challenging places for students who identify as LGBT+.

One recent study found that the proportion of high schoolers identifying as LGBQ+ doubled from 7.3 percent in 2009 to 14.3 percent in 2017 (Boston University School of Medicine, 2020). In looking at students entering our classrooms today, they have very different thoughts about marriage and relationships. With LGBT+ individuals having more acceptance with younger generations, they are more likely to know and interact with LGBT+ people in their day-to-day lives. Additionally, they may have no recollection of a time where marriage equality was not available. The struggles that defined the older generations may not register as relevant for current generations.

While not strictly regarding the LGBT+ culture, it is worth noting how the new generations of students are having an impact. Many people mistakenly identify today's college students as millennials. Millennials were students entering college from around 2000 to 2014 and were generally born in the 1980s through the mid 1990s. They are often characterized as confident, entitled, technology fluent, and team oriented. The current generation is coined as Generation Z. These students, more often than not, have never lived in a world without advanced technology and the internet. While they seem to be always connected to their technology, they often crave personal interaction and exhibit a higher degree of independence. Some studies have found that these individuals are more likely to be sexually fluid (not identifying as completely one sexual orientation) (Whyte-Smith, 2017). Other studies highlight that undergraduate classrooms are particularly relevant places to examine the experiences of LGBT+ individuals because many individuals begin exploring their LGBT+ identity during college (Vaccaro, 2006).

What follows are some best practices for creating an inclusive space in higher education settings. These are of course not mandates, so the reader is encouraged to look at these critically to determine what will help their students thrive in an academic setting.

BEST INSTRUCTIONAL PRACTICES

Let's start with your office space. While this is a place for you to work, it is also a reflection of your personality, beliefs, and values. Take a look at what you have chosen to display in your office. How could a student from a different background perceive your space? Would they be open to fully sharing their ideas with you if they perceived any form of bias against them? For the LGBT+ community, this is not simply about displaying a rainbow flag. Several universities have designated Safe Space programs. Going through this program can sometimes allow you to educate and identify yourself as an ally and designate your space as such. Small touches like magazine covers and even wall art can help your space become more inviting and welcoming for all students. This can be a bit of a touchy subject, but there can sometimes be a rift between the LGBT+ community and individuals with conflicting spiritual and political beliefs. The point here is not to hide your beliefs, but to consider how those beliefs may impact those you are serving. If a person feels silenced because of what they see around you, are you serving them to your fullest ability?

There is much more that can be done outside of the classroom. On the school or department level, consider discussing LGBT+ issues with your faculty leadership. Some schools have conducted meetings to discuss student success for this population. One idea that has often come up during these talks is the amount of bias and lack of inclusion in current textbooks. When students can identify with examples in what they are reading, it is easy to see how they can be more invested. It is also worthwhile to note that some problems in books use biased language. As an example, if a math problem asked how many couples you could make out of a group of 10 men and 15 women, would the author take into consideration that two men or two women could make a couple? Would the author consider other gender identities or only male and female? Would the author distinguish between one's gender identity and one's biological sex?

Inside the classroom, there are numerous methods that could assist your space in being more inclusive. Most universities populate their student roster based on what the student was required to give at the time of admission. This represents a potential problem for students who are transgender. There are a few potential solutions for something like this if attendance is going to be taken. While one option would be to ask for any changes to the roster, that can sometimes lead to a forced outing

of a student who may not wish for other students to know. Assignments for attendance or even a card-swipe check-in, if available, would assist in alleviating this concern. Some faculty also have their students create name cards to display on their desk. These name cards always remain present and assist the faculty with the student's chosen name recognition. Additionally, you could have the students introduce themselves along with their desired pronouns as you complete your roster. Sometimes mistakes happen, and when you make a mistake referencing a student's name or pronoun, please make sure to correct yourself quickly, briefly, and without fanfare. This allows you to repair the error while not making the student feel uncomfortable.

LGBT+ instructors often perceive that they could lose their professional authority if they came out to students (Russ, Simonds, and Hunt, 2002). However, faculty connection is paramount in improving freshman retention rates. Currently, 48 percent of college science majors who begin their college experience do not finish (Olson & Riordan, 2012). If a student has connected with a faculty, they are more likely to retain. Successful academic integration is easier if their faculty member accepts them and the student sees the faculty as supportive. Additionally, representation matters. Example: If a gay student sees a gay role model in the faculty, they begin to see more possibilities for themselves. Please note that, as always, an individual should only come out when they feel ready.

In terms of common practices in teaching future actuaries, it is relevant to point out that different insurance companies may still have distinct definitions defining what constitutes a couple. When teaching, it is important to instruct students on not only how these terms are used, but also how this can apply to different forms of relationships. As an example, in Massachusetts, providers are not required to provide qualified joint survivor annuities to same sex couples. In these cases, opposite sex partnerships are given survivor benefits while same sex partnerships are denied the same benefit. While there are potential solutions, they serve as additional hurdles to achieve the same result offered to opposite sex couples. In teaching life contingencies for example, it would be important to discuss applicable laws and regulations and their impact on life insurance products, specifically qualified joint and survivor annuities.

It is very common in modern classrooms to have a fair amount of discussion and group work. In these group settings, the students are encouraged to introduce themselves and even to disclose some personal information. LGBT+ students sometimes have to switch hats and decide what they wish to disclose as they consider how that information would be received. If they feel that their group would not accept them if they brought up a same sex partner, then they may be focused on that fact rather than engaging in the educational process. Like academic integration, social integration has also been linked to improved retention rates (Tinto, 1997). By setting appropriate boundaries for disclosure and providing a positive example for classroom expectations, you can assist in helping all students feel supported in your classroom.

Finally, please note that while you can create a classroom environment for success, there can be instances which will result in conflicts and confrontations. It is best not to ignore statements or actions that can be seen as offensive, ignorant, or even hateful. The recommendation is to be firm, but compassionate. Address the fact that while there are different views on controversial subjects, your classroom serves as a space for all to learn in a safe environment. The exchange of ideas is welcome as long as it is relevant and productive to the task at hand.

While there are several ways to create an inclusive classroom, please remember to respect your own boundaries as a part of this process. It is possible, even with the best intentions, to do more harm than good. As an educator, please continue to review the best practices regarding this population and take intentional steps toward creating a safe learning environment for all students. ■

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EDUCATION & RESEARCH SECTION ACTIVITIES

Working to support and encourage actuarial education and research

SECTION COMMUNITY

Have you had a chance to check out the SOA COVID-19 Updates page? Stay up-to-date on all of the changes that are taking place with SOA exams due to COVID-19 and explore information on many other topics as they pertain to the COVID-19 crisis.

PROFESSIONAL DEVELOPMENT

Repeated history of pandemics such as SARS, Swine flu, Ebola, Zika and COVID-19 have shown that contingency planning for pandemics is a necessary component of risk management for all organizations in modern society. Join us on Sept. 2 for the "Pandemic Risk Management: Contingency Planning and Allocation" webcast. This webcast will outline the concepts of reserving and capital management in classic insurance literature and aims to provide a quantitative framework for quantifying and assessing pandemic risk, developing optimal strategies for resources stockpiling, emergency acquisition, and spatiotemporal resource allocations. Registration deadline is Aug. 31.

Get access to more info at *SOA.org/sections/education-research*