



SOCIETY OF ACTUARIES

Article from:

The Actuary

June/July 2011 – Volume 8 Issue 3

Education

SOA EXAMS THEN AND NOW

BY DANIEL P. CASSIDY

“Life was simpler in the old days.” This adage could be used to describe the actuarial education and examination system of old. Pass 10 exams, become an actuary—friends at cocktail parties could understand that. Now, an actuary, particularly those of a certain “vintage,” may have difficulty describing what it takes to become an actuary. This article is focused on comparing the “old” system to the new.

“You may ask yourself, well, how did we get here?” – Talking Heads, Once in a Lifetime

The education system seems to have been in constant flux for more than two decades—I should know, having been involved as a volunteer for more than 15 years. First the change to the Flexible Education System (FES), then the 2000 redesign. Elements of these prior systems included the 10-credit exam on executive compensation, professional development projects, and others.

Now, after all this self-imposed change, the Education Committee believes we have the architecture for an education system that will more easily handle future needs of the profession, without the need of a full revamp. This does not mean there won’t be changes, but that the elements we currently

employ are flexible enough to accommodate needed updates and enhancements. This is evidenced by the relatively minor changes noted in the article, “Broadening ERM Horizons,” published in the April/May 2011 issue of *The Actuary*.

In summary, our current education system breaks down into five categories: Validation by Educational Experience (VEE), preliminary examinations, e-learning modules, fellowship examinations, and professionalism courses. To help understand each one, I have included:

- **The primary purpose**—the basic reason why it’s in our system; and
- **Numbers**—since we’re actuaries, it is hard for us to resist calibrating anything we discuss.

The five different categories have specific purposes, educational objectives, etc. I think it best to compare each one of these five categories and compare it to prior SOA education systems to see how things have changed.

VEE

Validation by Educational Experience (VEE) was born out of the desire to focus the SOA’s limited resources on core actuarial education. Three topics

(Economics, Corporate Finance and Applied Statistics) were determined to be required knowledge for actuaries; however, there is nothing “actuarial” about them. Candidates comply by showing completion of SOA-approved courses. This frees up SOA resources to focus on those topics core to our mission.

VEE has no counterpart in prior SOA examination systems but some of the topics used to be part of the examinations (e.g., Corporate Finance). It is interesting to note that Calculus—long a part of the SOA examination system—is no longer examined or even among the VEE requirements. Calculus is now treated as a prerequisite to our entire system. We tell candidates, “A thorough command of the supporting calculus is assumed.”

PRELIMINARY EXAMINATIONS

There are five exams that make up our preliminary examinations. Candidates know them by their initials (P, FM, MFE, MLC, and C). All are multiple-choice exams with P, FM and C being offered through computer-based testing (CBT)—MFE will be joining them in May 2011.

Compared to old multiple-choice exams, these exams look on the surface to be very similar; ask a question, give candidates



Daniel P. Cassidy

five possible answers—A, B, C, D, and E. However, the examination committees now focus candidates on using their mathematics training to help answer questions they will face as actuaries, not simply to answer interesting mathematics questions with no specific business context.

In addition, CBT exam administrations provide candidates with several advantages including:

- More opportunities (up to six times a year for Exam P) to take the exam

rather than two days a year (November or May); and

- Immediate feedback at time of exam with unofficial results.

CBT administrations provide the SOA with significant advantages including:

- Consistency across time periods; and
- Possibility of adding new examination tools, e.g., spreadsheet access that would not be possible under standard paper and pencil exams.

In our efforts to constantly improve our exams, we also recently added an additional step during exam preparation—pre-testing. We pre-test the entire exam with a select group of volunteers. This provides the exam committees with concrete feedback on the questions before releasing them on the exams.

The topics included in the Preliminary Examinations are core to all actuaries and are examined at a high hurdle rate, i.e., candidates must demonstrate significant understanding in order to pass the examination. As mentioned, with CBT-administered exams, we can be more confident that our pass rates are consistent over time—a critical goal for all our stakeholders.

E-LEARNING MODULES

Like VEE, there is no counterpart to e-learning modules in any prior SOA education system. E-learning modules move far beyond the self-study approach of our traditional exams. Adopting new, powerful instructional design methodologies and instructional technologies, we use a wide range of interactions and assessments (multiple-choice self-check questions, thought questions, scenarios, case studies, Excel files, end-of-module tests, end-of-module exercises and rigorous performance assessments) to deliver e-learning modules to our candidates. The modules enable higher cognitive levels of application, evaluation and synthesis for a wholly new educational experience for candidates.

Operating under an examination-only model, education committees would get feedback from examination committees and candidates like:

CATEGORY	PRIMARY PURPOSE	NUMBERS
VEE – Validation by Educational Experience	Topics important for actuaries to understand, but no particular actuarial expertise—i.e., save SOA resources for topics core to actuarial work	Typically, six three-hour university courses
Preliminary Technical Examinations	Financial math and modeling needed by all actuaries with rigor of examination	15 ½ hours of exam time
E-learning Modules	Practical training in actuarial models and techniques, as well as communication skills, that are best taught in an interactive mode rather than self-study followed by examination	An eight-module course with two assessments at ASA level and four FSA-level modules
Practical Fellowship Examinations	Practice-specific advanced topics with rigor of examination	12 hours of exam time (with some variation by track)*
Professionalism Courses	In-person seminars focused on business issues, professionalism and communication	Half-day Associateship Professionalism Course and three-day Fellowship Admissions Course

*14 hours for those choosing an option that grants both FSA and CERA (effective July 1, 2013).

- “Great topic, really important for candidates to know, but no way could we write a question on it.”
- “Great question, but we would need to give the candidates an Excel spreadsheet to really answer this.”
- “Good answer, but the really interesting part is when you change this one parameter—then see what happens.”
- “You made us read this 20-page paper, but you have never asked a question on it in the last five years.”

In our new system, e-learning modules provide the space for education to take priority over examination. For example, communications and business skills are introduced as part of e-learning in the Decision Making and Communication (DMAC) course—these topics are also taught in our professionalism courses.

While maintaining examination rigor through formal assessments at critical stages, e-learning modules take full advantage of the Internet to help us deliver education to actuaries now and, just as importantly, in the future. The entire architecture of our e-learning modules provides a very flexible platform for future changes in the SOA’s education program. For example, this same technology is being used to support continuing professional development educational opportunities.

FELLOWSHIP EXAMINATIONS

On the surface, the advanced examinations seem to be the most comparable to the prior systems. In fact, these examinations are vastly different both in terms of questions asked as well as grading. Some of the significant changes include:

- **Case study**—Many fellowship exams include a case study. This provides

a real business context for exam questions;

- **Cognitive level**—Specific focus on the cognitive level needed to answer questions with examinations more focused on the highest level of synthesis and recommendations;
- **Integrated questions**—Leveraging off the case study, exam committees are encouraged to ask integrated questions, which we define as questions that span across individual syllabus material. It would be unusual for a fellowship exam question to simply be a regurgitation of a list from one source, which was a common situation in the former system;
- **Question writing/grader training**—Significant effort has been put into providing training for all volunteers involved in our exams; and
- **Sorting**—For many fellowship exams, an independent grading process that we call sorting is performed. This provides the committees with additional feedback both on questions and candidate papers from an independent source.

PROFESSIONALISM COURSES

Under the 10-exam system, there was no professionalism course. You passed the exams and got your FSA. Now, we have two in-person courses. The Associateship Professionalism Course (APC) is completed near the end of the Associate requirements and the Fellowship Admissions Course (FAC) is the final step to becoming a fellow. These courses provide an important capstone experience for candidates as they complete these major steps in their actuarial education. The FAC emphasizes small group discussion of real business cases and ethics as well as requires an oral presentation.

This last requirement directly addresses one of the major concerns about actuaries—that we can calculate numbers, but can’t communicate them.

SUMMARY

“What a long, strange trip it’s been” – Grateful Dead, Truckin’

The SOA’s education offerings have come a long way from the old 10-exam system—through the FES, the 2000 redesign and now finally to our current system, with plans for enhancements in the near future. While the convenience of having a nice simple response to “How does one become an actuary?” is lost, the SOA has gained a system that:

- focuses on actuarial education;
- balances examination rigor with educational experience; and
- uses technology—where appropriate—to facilitate and enhance learning outcomes.

So, if anyone asks you that question, one possible answer is, “We have a five-part education system making use of external course requirements, technical exams, practical exams, online learning and in-person training.” Not as slick as “10 exams,” but a lot more focused on educating the actuaries of the future. ▣

Daniel P. Cassidy, FSA, CERA, FCA, MAAA, EA, is president of Cassidy Retirement Group. He can be contacted at dan@cassidyretirement.com.