



2024 CAE Community Symposium

A Practical Assessment of Practical Assessment

Joel D. Offenberg, CISSP
Assoc. Professor of Cloud/Cybersecurity
Howard Community College

2024 CAE

The issue & the approach

- Labs and other hands-on keyboard exercises allow students to demonstrate competence at realistic tasks
 - Footnote: 28 years in industry as a federal contractor, the number of multiple-choice questions I faced on the job was zero.
- How do we make realistic tasks fit into the structure of an academic course?
 - Final exam limited to 2 hours
 - How do students prepare?
- Can we make a single exercise cover a broad section of the course objectives?
- Note: this is an intro-level course.

Community Symposium

2024 CAE Final Exam Development Strategy

- Start with the Social Engineering lab from the textbook
 - Our textbook is **Network Security and Firewalls, 3rd Ed.** by J. Michael Stewart & Denise Kinsey (Jones & Bartlett)
 - ...included the online/cloud labs
- Students prepare by completing the actual lab before the exam time
 - This way they have time to complete the lab without a ticking clock.
 - Submit the lab report as evidence they completed the lab for part of the exam grade
- During the exam, students will repeat parts of the lab exercise and answer questions about the lab and what they discovered.
 - Questions relate to...
 - ...discoveries made during the exercise
 - ...how to leverage what they found in technical attack
 - ...how what they found can apply to cybersecurity principles
 - Some questions involve doing research on the internet relating to the findings.

2024 CAE

Advantages

- Tests the students' practical skills
- Students don't "cram" for a multiple-choice exam
 - Students really like that!
- Coming into the lab with the lab report means students walk into the exam knowing they have the points for that part of the exam
 - Popular!

Symposium

2024 CAE

Is this a true measurement of learning?

- Students are demonstrating practical skills, but...
 - ...the lab portion of the exam is not timed and is performed outside the class.
 - ...the in-class portion of the exam is timed, but involves doing research, so is open internet,
- Exam performance and performance in the rest of the course is moderately correlated ($r=0.7$)...
 - ...mostly because students who are weak in other areas of the course can do well on this exam.

Community Symposium

2024

CAF



Thank You!



The Rouse Company Foundation
Student Services Hall

Symposium