Course Title: IST/CSC109 UNIX/Linux Operating System 3 credits

Course Leader: Trudy Gift

Expected Learning Outcomes for Course

- Choose appropriate UNIX/Linux operating system commands to make effective use of the environment to solve problems
- Write efficient, effective scripts with documentation
- Research and present information and resources utilizing new commands

Assessment
(How do students demonstrate achievement of these outcomes?)
There are two take-home, application exams comprised of 50 questions that the students complete. During the spring semester, I noticed potential cheating problems so the final was taken in class. This did not cause a huge difference in the final results. The exams demonstrate their knowledge of Unix/Linux commands and the ability to apply critical thinking skills to all questions (which are application style). They are encouraged to use their textbook, Internet research.

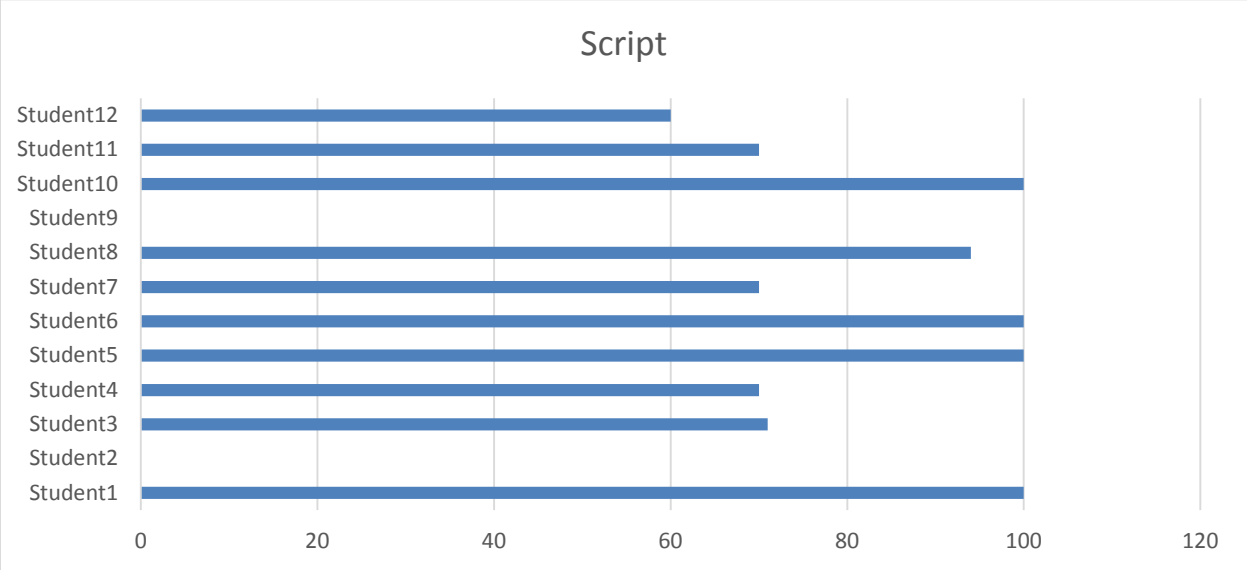
There are two instructors for this course in the spring (1 in the fall); the exams cover the same type of question but not the same wording. Filenames, options, scenarios were changed.

In looking at just the scores on the three exams, there is no huge difference in the percentage. I reason this to be the nature of the course. If students continually work on all projects, assignments, and do the hands-on in class, they will do well on the exam. If students 'pick and choose' the assignments they want to do, they consistently get lower scores.

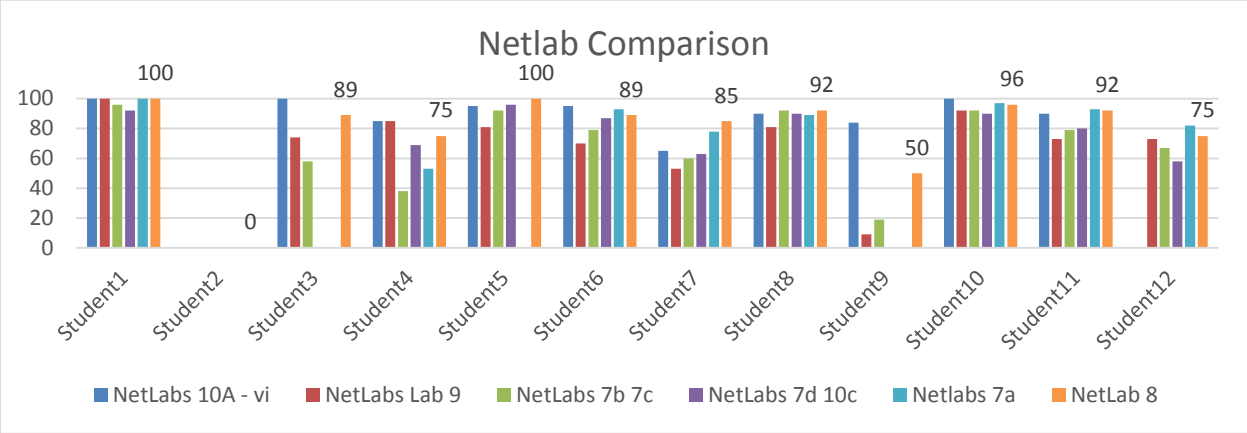
Attendance: Attendance was average in day sections while the night section had higher absentees. One of the reason could be most of these students are working (one was pregnant). Thought: when students realize that attendance is being taken every semester, this might be the motivation behind better attendance.

Scripting: A total of 8 students for the 2016-2017 choose not to do the script. One more than the previous year. The average grade (without the 0's) was 83.5 as compared to 86.8 the previous year. Detailed comments were added to their Moodle page so they would know exactly where they lost points. In addition, the grade was broken into three parts: presentation, actual script, and email (via Linux) the script. The average was down 3.3% from the previous year.

The actual presentations were excellent. I am extremely proud of this portion of the grade as there are limited directions. Students are given a list of items that must be included in the script. Other than that, they are on their own. Examples: hangman game, sports trivia, back up files/directories, screen maze, guess the number, tutorial for beginners using Linux.



In 2017, Netlabs continues to be a problem. Students do not complete the lab prior to doing the quiz. They choose to seek the answers online, textbook, or guessing. The data shows that those students that actually completed the Netlabs did better in the class (grade distribution versus completion of Netlabs with a B or better). The instructor could tell those that did the Netlabs by two methods: checking last used dates and there were specific commands used in Netlabs that were required for the answers. Considering this is a good way for students to get additional practice outside of class, I will continue to use it.



Assignments: Both in-class and homework assignments completion rates improved as compared to the previous semester completion rates (75% of the students missed one or more assigned tasks which could reflect in poor grades as compared with 79%).

Validation

(What methods are used to validate your assessment?)

Continuing to use CompTIA Linux Certification Objectives with course content built around this national certification. The Linux Certification cannot be used as a capstone project because a minimum of 2 years work experience is suggested to pass the exam. In addition, there is limited system administration work completed in this course due to time constraints. A UNIX/Linux System Administrator (US Coast Guard, Martinsburg, WV) was consulted in the design of the course. His suggestions are incorporated into the course and updated yearly.

Objectives of the course were mapped to the LPI exam I and were updated in fall 2016. The results can be found in the IST SLOA .5 folder on Drive Y. The mapping has not changed since the exam has not changed.

Results
(What does the data show?)
Those students that walked away from the course (without withdrawing) were not included in the results.

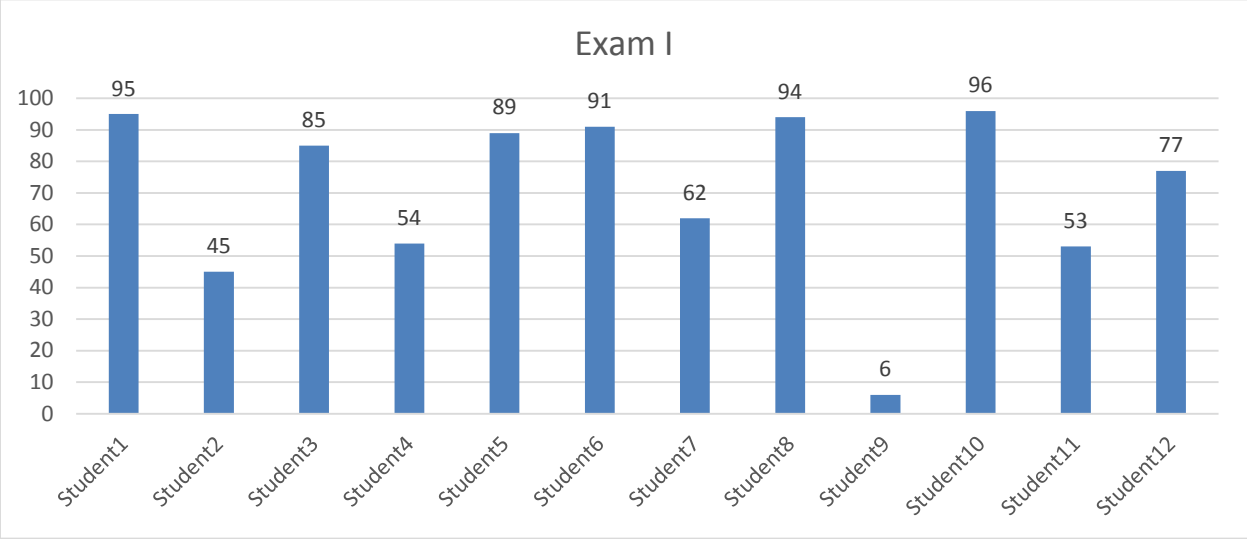
The course continues to be more hands-on and less demonstration by the instructor. Students are actively involved in all phases of the class. If they do not participate in the class activities, they are lost when it comes to the homework. They are asked to read chapters prior to coming to class (seldom happens). Activities formerly used as a homework assignment are now completed in class (implementing flip classroom technology).

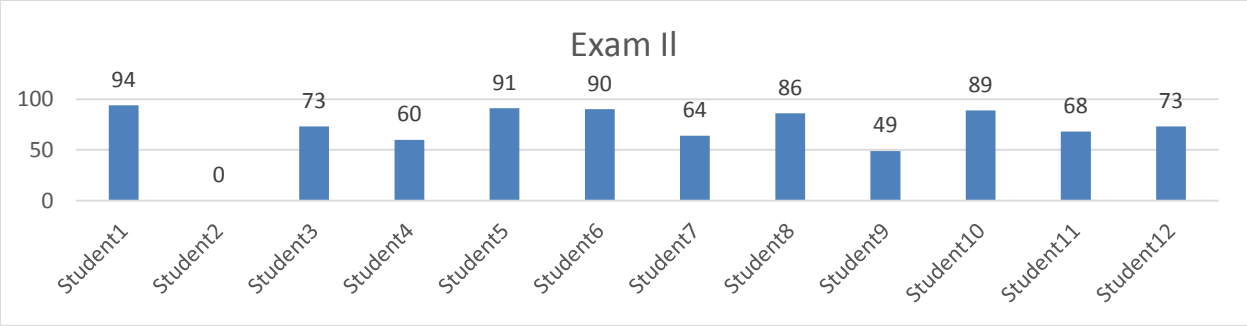
There needs to be an IST support person in the Learning Support Center. Even though this was discussed at unit planning last year, nothing happened this year. There were several student (5) that could have benefited from someone to give them additional help. Sometimes it just takes another person to explain the same concept in a different approach. Some students just need step by step instruction which cannot occur in the classroom. I tried to work with the LSC to hire an outside consultant (even though it was approved at the unit planning meeting) but nothing happened. Because of this 5 students failed the course.

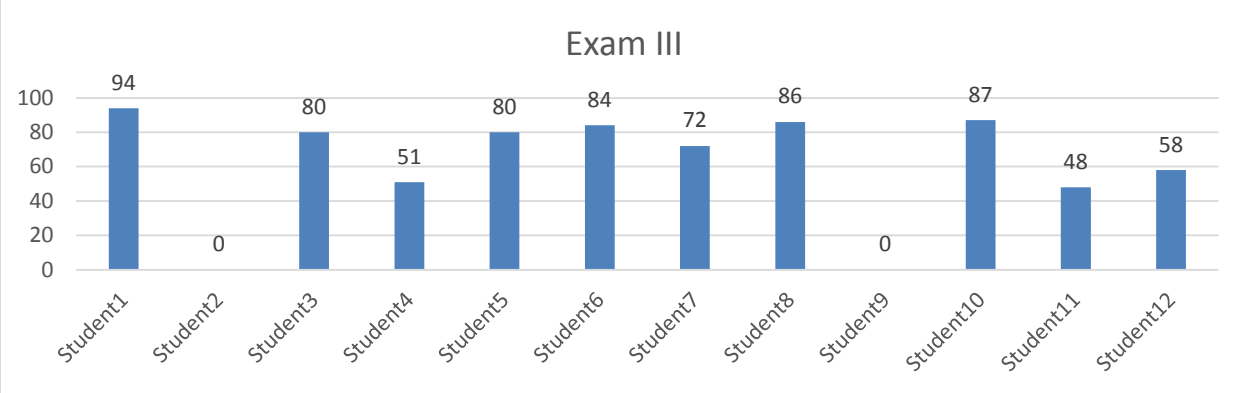
There was more class participation than last year. Those students who did not join in on the class demonstrations do not do well in the course. Students are encouraged to work together to solve error messages (which is a reflection of what they will have to do on the job). More assignments were included from the textbook.

We are using an online textbook which did not cause any problem (unlike last year).

Every question on the exam is an application/critical thinking question. In the spring semester, I added activities from the textbook (both tutorial in nature and critical thinking). The results show improvement of the fall semester with the same exam. This correlates directly to Outcome 1: Choose appropriate UNIX/Linux operating system commands to make effective use of the environment to solve problems. Therefore, the three exam results reflect the success or failure of the outcome.







Follow-up
(How have you used the data to improve student learning?)
The new textbook and format seem to be working well. We will continue to use Netlabs.

Budget Justification
(What resources are necessary to improve student learning?)
Requesting a part-time learning assistant for the Learning Resource Center.