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 three take-home, application exams comprised of 50 questions that the students complete. The exams demonstrate their knowledge of Unix/Linux commands and the ability to apply critical thinking skills. They are encouraged to use their textbook, Internet research. There was only one instructor for this course; the exams were the same for both sections. There is a decline in the exam scores as the concepts become more difficult. I also noticed that students 3 students out of 22 (two sections) did not take the final. This resulted in them failing the course.

Attendance: Attendance was great in both sections. A vast improvement from the previous semester. No explanation can be provided for that improvement.

Scripting: Unlike the previous semester, only three students (same three as from the exam) did not complete the script. Visitors were invited to each section (Dr. Vogel, M01; Mr. Horton M02). They were impressed by the quality of what the students presented considering this was not a scripting course and the students basically had the last two weeks of the semester to complete this assignment. The average grade (without the 0's) was 86.8. Detailed comments were added to their Moodle page so they would know exactly where they lost points. The average improved from the previous semester. The actual presentations were excellent. The presentation grades were much higher (students were penalized for not participating or listening to peers).

Scripting GradeComparison
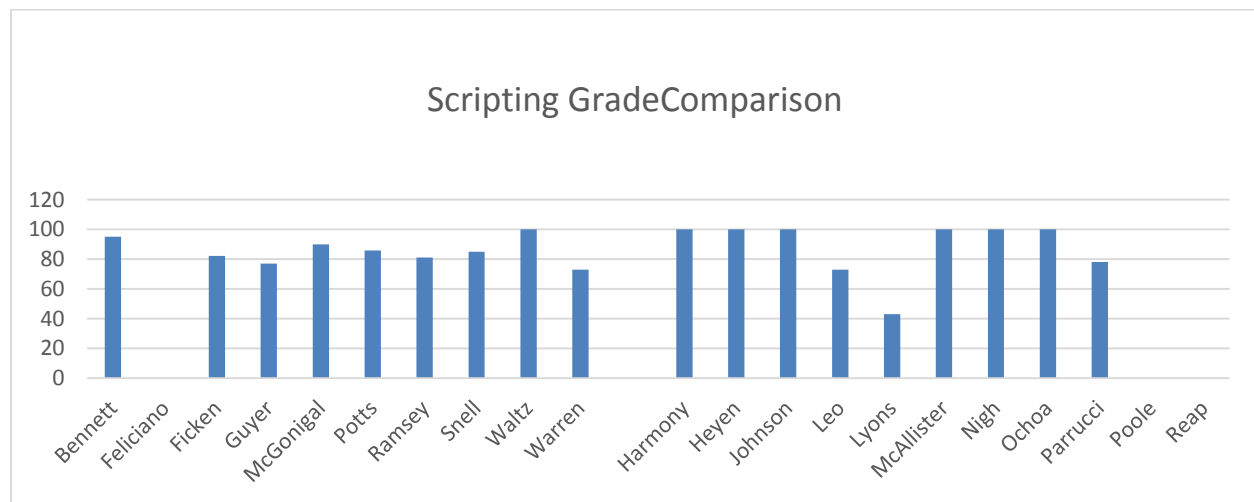
Netlabs continues to be a problem. Students do not complete the lab prior to doing the quiz. They choose to seek the answers online, textbook, or guessing. The data shows that those students that actually completed the Netlabs did better in the class (grade distribution versus completion of Netlabs with 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 inproved as compared to the previous semester completion rates (68% 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?)
I am 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.

Objectives of the course were mapped to the LPI exam I and were updated in fall 2015. 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.
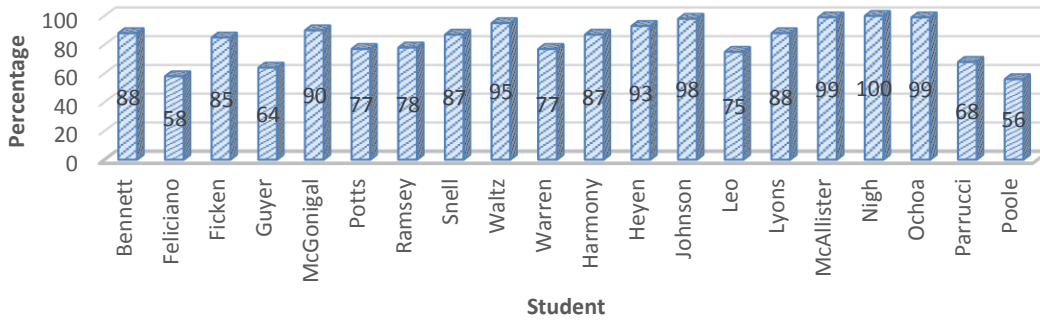
Results
(What does the data show?)
Those students that walked away from the course (without withdrawing) were not included in the results.

The course continues to be more hands-on and less demonstration by the instructor. Students are actively involved in all phases of the class. 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 is improved class participation. 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. Students report (via HCC student evaluations) they like the hands-on approach.
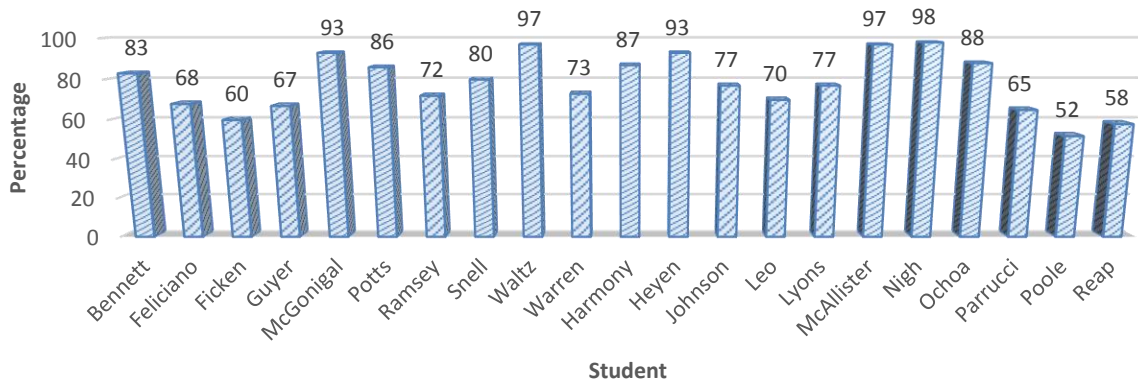
Every question on the exam is an application/critical thinking question. This correlates directly to Outcome 1: Choose appropriate UNIX/Linux operating system commands to make effective use of the environment to solve problems. Therefore, the three exam results reflect the success or failure of the outcome.

EXAM I

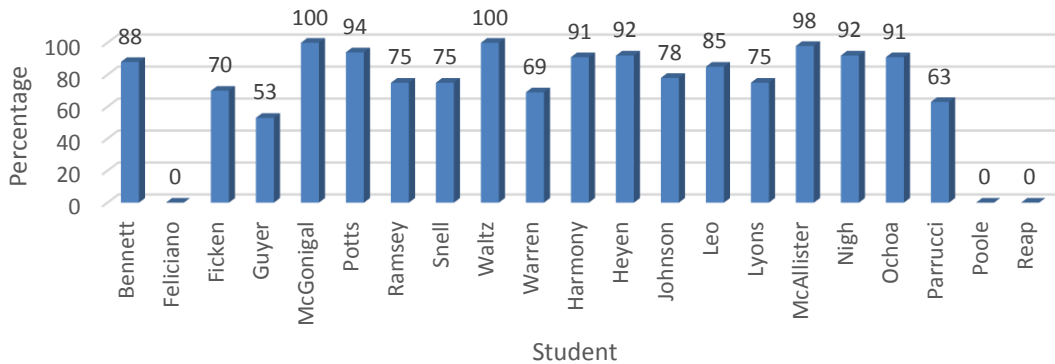Exam I scores (Percentage vs Student): Bennett 88, Feliciano 58, Ficken 85, Guyer 64, McGonigal 90, Potts 77, Ramsey 78, Snell 87, Waltz 95, Warren 77, Harmony 87, Heyen 93, Johnson 98, Leo 75, Lyons 88, McAllister 99, Nigh 100, Ochoa 99, Parrucci 68, Poole 56

EXAM II

Exam II scores (Percentage vs Student): Bennett 83, Feliciano 68, Ficken 60, Guyer 67, McGonigal 93, Potts 86, Ramsey 72, Snell 80, Waltz 97, Warren 73, Harmony 87, Heyen 93, Johnson 77, Leo 70, Lyons 77, McAllister 97, Nigh 98, Ochoa 88, Parrucci 65, Poole 52, Reap 58

Exam III

Exam III scores (Percentage vs Student): Bennett 88, Feliciano 0, Ficken 70, Guyer 53, McGonigal 100, Potts 94, Ramsey 75, Snell 75, Waltz 100, Warren 69, Harmony 91, Heyen 92, Johnson 78, Leo 85, Lyons 75, McAllister 98, Nigh 92, Ochoa 91, Parrucci 63, Poole 0, Reap 0

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. We are dropping the textbook for an online version of the same book. If students want a hard copy, they can purchase it cheaper online ($49 versus $207 at the HCC store). The online version is free. The only foreseeable problem: students in other courses that only have an online text view it as an option and not a requirement to read. Hopefully that will not be the case in this course since we

will be referring to the textbook within the class and assignments will be coming from the questions at the end of the chapter.

Budget Justification
(What resources are necessary to improve student learning?)
Currently no budget request items are needed.