William Paterson University
College of Science and Health - Department of Computer Science

Fall 2015 – Spring 2017 Assessment Cycle
Analysis of the Program's Student Outcome Assessment Data

Program's Student Outcome:

S5: Demonstrate abilities to locate and make effective use of information.

ABET's Related Student Outcomes (h)

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A. Analysis of the Assessment Data

For the assessment period Fall 2015 to Spring 2017, this student outcome was assessed in the following four courses: CS3450, CS3820, and CS4800. The data of CS3450 and CS3820 were collected in Spring 2016, Fall 2016 and Spring 2017. The data of CS4800 were collected in Spring 2016 and Fall 2016.

In CS3450, 4, 14, and 22 students respectively took the course and 3 of them (which represents 7.5%) had less than adequate ability. It was noticeable that some students just lifted some passages from their only source of reference which was the book.

In CS3820, 19, 11, and 22 students respectively took the course and 9 of them (which represents 17.3%) had less than adequate ability. It was noticeable that some of the students were very motivated and eager to learn a new programming language and this motivation and enthusiasm were reflected in the quality of their project reports. However, some had no motivation at all or did not have the required background to handle the class or both.

In CS4800, 21 and 11 students respectively took the course and 1 of them (which represents 3.1%) had less than adequate ability. It was noticeable that some of the reports were comprehensive and detailed. Others were more like journals of activities and more informal.

B. Suggestions for Improvement: N/A

C. Improvement Implemented

N/A

D. List all the "performance level/frequency/percentage" tables and their sources.

a. Faculty Course Assessment Report: CS 3450, Spring 2016

Data Collected: Each student's level of performance on locating and making effective use of information.

Method of Collection: Each student is required to locate information about one of the OS topics suggested by the instructor and to write a report on it. He/she then receives a numerical grade on the report based on its contents, the presentation and the clarity of the topics discussed.

Performance Levels	Frequency	Percentage
Some Ability		
Adequate Ability	3	75.0 %
More than Adequate Ability	1	25.0 %
High Ability		

Observations: Although the reports were well written, Most of them mimic passages of the source document which for most students was just one chapter in the book.

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b. Faculty Course Assessment Report: CS 3450, Fall 2016

Data Collected:Each student's level of performance on locating and making effective use of information.

Method of Collection: Each student is required to make an oral presentation and to produce a report on one of the following OS topics: Virtualization and the Cloud, Multiple Processor Systems, Security, UNIX, LINUX, and Android, Windows 8, and Operating System Design. He/she then receives a numerical grade on his/her presentation (from every student in the class) and a numerical grade on his/her report from the instructor of the course.

Performance Levels	Frequency	Percentage
Some Ability	1	7.1%
Adequate Ability	7	50.0%
More than Adequate Ability	3	21.4%
High Ability	3	21.4%

Observations: The same students who produced very well written reports also put a lot of efforts in their research. However, it was noticeable that some students just lifted some passages from their only source of reference which was the book.

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c. Faculty Course Assessment Report: CS 3450, Spring 2017

Data Collected: Each student's level of performance on locating and making effective use of information.

Method of Collection: Each student is required to write a report on one of the following OS topics: Virtualization and the Cloud, Multiple Processor Systems, Security, UNIX, LINUX, and Android, Windows 8,

and Operating System Design. He/she then receives a numerical grade on the report based on its contents, the presentation and the clarity of the topics discussed.

Performance Levels	Frequency	Percentage
Some Ability	2	9.1%
Adequate Ability	9	40.9%
More than Adequate Ability	4	18.2%
High Ability	7	31.8%

Observations: The same students who produced very well written reports also put a lot of efforts in their research. However, it was noticeable that some students just lifted some passages from their only source of reference which was the book.

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d. Faculty Course Assessment Report: CS 3820, Spring 2016

Data Collected: Each student's level of performance on locating and making effective use of information.

Method of Collection: Each student is required to locate information about a programming language that is not taught in the program and to produce a report on it. Students also have to writes three program assignments in this new language. Each student then receives a numerical grade on his/her project report that is based on his knowledge of the implementations of programming language features in that language and a score over 10 on the implementation of each lab assignment..

Performance Levels	Frequency	Percentage
No Ability	0	0%
Some Ability	2	10.5 %
Adequate Ability	2	10.5 %
More than Adequate Ability	8	42.11 %
High Ability	7	36.8 %

Observations: More than half of the students in this class had a strong background in programming and were very eager to learn a new programming language. However, some few of these students had some difficulties with fundamental programming concepts and also showed very little enthusiasm especially in doing their programming assignments.

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e. Faculty Course Assessment Report: CS 3820, Fall 2016

Data Collected: Each student's level of performance on locating and making effective use of information.

Method of Collection: Each student is required to locate information about a programming language that is not taught in the program and to produce a report on it. Students also have to writes three program assignments in this new language. Each student then receives a numerical

grade on his/her project report that is based on his knowledge of the implementations of programming language features in that language and a score over 10 on the implementation of each lab assignment..

Performance Levels	Frequency	Percentage
No Ability	0	0.0%
Some Ability	5	45.5 %
Adequate Ability	1	9.1 %
More than Adequate Ability	0	0.0 %
High Ability	5	45.5 %

Observations: This class was a little bit strange to me: about half of the students were very motivated and eager to learn a new programming language and this motivation and enthusiasm were reflected in the quality of their project reports. However, another half had no motivation at all or did not have the required background to handle the class or both.

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f. Faculty Course Assessment Report: CS 3820, Spring 2017

Data Collected: Each student's level of performance on locating and making effective use of information.

Method of Collection: Each student is required to locate information about a programming language that is not taught in the program and to produce a report on it. Students also have to writes three program assignments in this new language. Each student then receives a numerical grade on his/her project report that is based on his knowledge of the implementations of programming language features in that language and a score over 10 on the implementation of each lab assignment..

Performance Levels	Frequency	Percentage
No Ability	0	0%
Some Ability	2	9.1 %
Adequate Ability	3	13.6 %
More than Adequate Ability	4	18.2 %
High Ability	13	59.1 %

Observations: A large number of the students in this class were very motivated and enthusiastic about learning a new language and this motivation and enthusiasm were reflected in the quality of their project reports. A great number of students also returned their lab assignment projects.

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g. Faculty Course Assessment Report: CS 4800, Spring 2016

Data Collected: Each student's level of performance on locating and making effective use of information

Method of Collection: Each student was required to make a 30-20 minute oral presentation on a research topic of his own choosing. The student then has to write a 5 to 10 page paper on his research topic.
I only coached their efforts; they did they hunting/gathering and compilation of information into their work while I was just observing, gauging progress, and grading results.

Performance Levels	Frequency	Percentage
Some Ability	1	5 %
Adequate Ability	8	38 %
More than Adequate Ability	9	43%
High Ability	3	14 %

Observations: Some of the reports were comprehensive and detailed. Others were more like journals of activities and more informal. These topics were interests of the student speakers and writers, resulting in unanticipated energy and enthusiasm. The topics included:
- Game Design in Python
- Creating a website using PHP and MySQL, and generating content dynamically
- a Computer and Networking Security paper
- Android weather app
- A Calculator app on the iPhone.

This wide spectrum of topics reflects engaged, students researching varied resources online, in the library, and other sources outside the classroom. Students were required to do so but did not need my edict as they did so extensively of their own volition and with zeal.

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h. Faculty Course Assessment Report: CS 4800, Fall 2016

Data Collected: Each student's level of performance on locating and making effective use of information
Method of Collection: Each student was required to make a 30-20 minute oral presentation on a research topic of his own choosing. The student then has to write a 5 to 10 page paper on his research topic.
I only coached their efforts; they did they hunting/gathering and compilation of information into their work while I was just observing, gauging progress, and grading results.

Performance Levels	Frequency	Percentage
Some Ability	0	0.0 %
Adequate Ability	4	36.4 %

More than Adequate Ability	5	45.5%
High Ability	2	18.2 %

Observations: Some of the reports were comprehensive and detailed. Others were more like journals of activities and more informal. These topics were interests of the student speakers and writers, resulting in unanticipated energy and enthusiasm. The topics included:
- Game Design: Java-game based on Rock/Paper/Scissors model (zero-sum, no mini-max solution type) using guns.
- Game Design: C++ video game using SFML (Simple and Fast Multimedia Library) in a two player based on the Snakes model, with levels and treasure sprites .
- Game Design: Python game using PyGame library Open field, first-person shooter (actually, he studied several possible design directions including Ruby and Java as language options and even trying to design a web-crawler. So student did extensive inquiry before working on the shooter.)
- OLAP (online analytical processing) database with Oracle 12c with PDB /CDB, 250 MB test data
- Creating a website using PHP and MySQL, and generating content dynamically
- Game Designed using the Unity engine
- C# based application to read barcodes scanned from the camera of a Windows, Android, or iOS and coupled with GPS to record location
- Web-accessible/remote-ctrolled Raspberry Pi controller of a robot with mandibles and locomotion (yes, this indeed is very impressive… immense project)

This wide spectrum of topics reflects engaged, students researching varied resources online, in the library, and other sources outside the classroom. Students were required to do so but did not need my edict as they did so extensively of their own volition and with resounding enthusiasm.