

Comparing Fall vs. Spring Student Performance in a CCSU Microcomputer Applications Course

Description

This study compares student performance between two groups of students: one group that took CNET 1103 (Microcomputer Applications) during the spring semester of 2002 and a second group that took the same course during the fall term of 2002. The same professor taught both sections and students were assessed according to the same measures. The most apparent difference between the sections is simply the fact that one was taught during the fall and the other during the spring. A look at the GSU grades for the spring and the fall of 2002 reveals that in all schools except for Health and Human Sciences, the grade point averages were higher in the spring (the averages were nearly identical for Health and Human Sciences)¹. Thus, with some evidence that university student performance increases from fall to spring terms, this study looks at one course to determine whether this increase is significant. If it is, then further study may be merited to determine the reasons for this performance difference, perhaps leading to a better understanding of the teaching-learning process and ways of improving student performance in all terms.

Methods

Both classes met twice weekly for the term, and students were assessed on written tests, homework assignments, a PowerPoint presentation, and a comprehensive final exam. The assignments, tests, and final exam were identical. The grading rubrics for the PowerPoint were the same for both classes, although students were allowed to choose their own topic. From these assessments a final numeric average was computed for each student. These averages form the basis for the study.

The fall 2002 group consisted of 22 students and the spring 2002 group consisted of 20 students. Since the two groups had no relation to each other, a two-tailed independent T-test was performed with $\alpha = 0.05$ and the results are described below.

¹ Information obtained from the GSU web site. The GSU web site only calculates GPA to one decimal place, but using the grade distribution shown I calculated GPAs to two decimal places to observe the differences. Admittedly, this required an assumption that all grades shown represented an identical number of credit hours. This assumption surely introduces a small amount of error, but not enough to negate the observation that spring performance was higher than fall performance in all but one school.

Results

Table 1 presents the means and standard deviations by group.

Group	N	Mean	Std. Deviation	Std. Error of Mean
Fall 02	22	80.23	9.55	2.04
Spring 02	20	83.22	9.44	2.11

Table 1.

The results show that the spring 02 group (mean = 83.2) averaged about 3 points higher than the fall 02 group (mean = 80.2). The deviations were nearly the same (Fall 02 SD = 9.55, Spring 02 SD = 9.44), and the assumption of homogeneous variances was satisfied (Levene's test, $F = .226$, $p = .637$).

Using a two-tailed independent T-test (results shown in Table 2), the difference of 3 points in the final averages was not close to being significant, with $t(.05, 40) = -1.02$ and $t_{.05} = \pm 2.021$. In fact, the 95% confidence interval calculation reveals that a difference of more than ± 5.93 points between the two means would have been needed for a significant difference to be observed.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SCORES	Equal variances assumed	.226	.637	-1.018	40	.315	-2.9877	2.93478	-8.91914	2.94368
	Equal variances not assumed			-1.019	39.703	.315	-2.9877	2.93317	-8.91727	2.94181

Table 2.

Discussion/Conclusions

Although the results of this study were not statistically significant, it may well be that a significant difference does exist between student performance in the spring and fall semesters. If such a difference exists, then further study should be conducted to help isolate the causes for this difference. For example, perhaps a major factor could be first-time freshmen who perform poorly in the fall, and who either drop out or improve their performance in the spring. Examining this and other potential performance discrepancies among populations may lead to a better understanding of the dynamics of student performance, and ultimately to improvement of the teaching-learning process.

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Data Averages

#	Fall 02	Spring 02
1	77.10	95.90
2	55.60	71.90
3	77.70	87.00
4	77.50	94.00
5	92.70	75.60
6	80.70	84.10
7	62.70	88.00
8	95.40	93.00
9	85.70	80.70
10	79.80	73.80
11	78.70	94.20
12	70.30	91.30
13	91.00	96.80
14	80.20	76.70
15	88.20	82.30
16	85.20	86.40
17	76.10	70.90
18	72.30	68.00
19	87.20	69.30
20	86.20	84.40
21	88.80	
22	75.90	