

# Speech Assessment Report

## Fall 2016

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### 1 INTRODUCTION

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Florida SouthWestern's Speech Department has employed a common rubric used by all faculty as a means to evaluate an agreed upon series of student level outcomes. With a goal towards increasing student oral communication achievement, faculty have focused on a series of Student Learning Objectives (SLOs) using the rubric dimensions Introduction, Organization, Support, Oral Documentation, Language, NV-Vocal, NV-Physical, Presentation Media, Attire, and Conclusion, in a formative speech common assessment. Additional department goals for assessment include comparing results of SPC 1017, Fundamentals of Speech Communication, with that of SPC 2608, Introduction to Public Speaking, and comparisons by campus, dual enrollment/non-dual enrollment, and online/traditional, when applicable. These correlative measures will serve as support for instructive improvement (Cole et al., 2011; Elder and Paul, 2007).

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### 2 LEARNING OBJECTIVES AND DESCRIPTIVE STATISTICS

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Using common rubric criterion as an assessment method, in the 2014-15 academic year the FSW Speech faculty defined three areas of interest for evaluation that apply to both SPC 1017 and SPC 2608 and set goals appropriately. Results from that year showed that students met expectations (> 60% at achievement level). As a result, faculty determined that goals were raised in AY 2015-2016 to > 70%. These goals are maintained for AY 2016-2017.

The rubric dimensions are modeled on a 5-point scale where a score of 0 indicates "Insufficient", 1 indicates "Beginning" level, 2 indicates the "Developing" level, 3 indicates the "Accomplished" level, and 4 indicates the "Exemplary", or highest level. The SLOs and their measure of success are:

SLO1: Students will know how to avoid plagiarizing when speaking by incorporating an oral citation that includes appropriate information. The faculty established measure of success for this SLO is a rating of "Developing" or higher for 70% of the students.

SLO2: Students will be able to incorporate nonverbal physical behaviors vital to the success of an oral presentation. The faculty established measure of success for this SLO is a rating of "Developing" or higher for 70% of the students.

SLO3: Students will improve in the common outcomes of the Informative Speech Outline and the Informative Speech. These areas include Introduction, Oral documentation, Support, Organization, and Conclusion.

SLO4: Students will be able to prepare and deliver an effective speech introduction that gains the attention of the audience, establishes speaker credibility, relates the topic to the audience, identifies the topic and previews the main points of the speech. The faculty established measure of success for this SLO is a rating of “Developing” or higher in “Introduction” for 70% of the students for both Outline and Informative Speech.

SLO5: Students will be able to provide effective speech closure by delivering a conclusion that signals the end, reviews purpose and main points and that ends smoothly and memorably. The faculty established measure of success for this SLO is a rating of “Developing” or higher in “Conclusion” for 70% of the students for both Outline and Informative Speech.

## 2.1 SPC 1017

### 2.1.1 Learning Objectives

For the fall 2016 assessment, 673 artifacts were collected for SPC 1017 from 29 of 45 course sections. In some cases, rubric scores could either not be accessed or located. The faculty established goal for SLO1, a rating of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “Oral Documentation” for 70% of the students was met. Fall 2016 artifacts exhibit 87% of artifacts scored level 2 or greater (Table 1). The faculty established goal for SLO2, a rating of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “NV-Physical” for 70% of the students was met. Fall 2016 artifacts exhibit 97% scored level 2 or greater. Results for SLO3 require a somewhat different reporting process and, for convenience and clarity, are discussed following SLOs 4 and 5. The faculty established goal for SLO4, a rating of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Introduction” was met. Fall 2016 artifacts exhibit 95% of scored level 2 or greater in both Informative Speech and Outline. The faculty established goal for SLO5, a rating of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Conclusion” was met. Fall 2016 artifacts exhibit 95% of scored level 2 or greater in Informative Speech and 97% in Outline.

Rubric Score	Introduction	Organization	Support	Oral Documentation	Language	NV-Vocal	NV-Physical	Presentation Media	Attire	Conclusion
Developing or higher	95%	99%	99%	87%	100%	99%	97%	90%	99%	95%
4	43.2%	49.0%	91.7%	35.1%	58.7%	33.3%	73.7%	47.1%	77.3%	38.2%
3	36.1%	40.9%	7.4%	37.3%	39.4%	47.5%	23.2%	34.0%	18.1%	41.6%
2	15.9%	9.2%	0.0%	15.0%	1.6%	18.6%	0.0%	8.5%	3.1%	15.3%
1	4.5%	0.7%	0.9%	7.3%	0.1%	0.6%	2.1%	3.1%	1.3%	1.5%
0	0.3%	0.1%	0.0%	5.3%	0.1%	0.0%	1.0%	7.3%	0.1%	3.4%

Table 1. Percentage of student achievement level by rubric dimension for Informative Speech (includes percentage of students scoring in developmental level or higher as per SLOs). Rubric dimensions identified in SLOs in blue.

Rubric Score	Introduction	Organization	Support	Oral Documentation	Conclusion
Developing or higher	95%	99%	99%	87%	97%
4	43.2%	49.0%	91.7%	35.1%	73.7%
3	36.1%	40.9%	7.4%	37.3%	23.2%
2	15.9%	9.2%	0.0%	15.0%	0.0%
1	4.5%	0.7%	0.9%	7.3%	2.1%
0	0.3%	0.1%	0.0%	5.3%	1.0%

Table 2. Percentage of student achievement level by rubric dimension for Outline that are common to Informative Speech for (includes percentage of students scoring in developmental level or higher as per SLOs).

The faculty established goal for SLO3, students will improve in the common outcomes of the Informative Speech Outline and the Informative Speech was met. To effectively illustrate this, two separate descriptions are provided. First, Table 3 describes mean scores by dimension and overall score for both Outline and Informative Speech. Note that artifact scores for the “Support” dimension of the Informative Speech were adjusted from a 15-point scale to a 10-point scale for comparison.

From these results improvement is exhibited in 2 of 5 dimensions as well as the overall. It is somewhat misleading, however, to compare improvement/decline percentages based on all data. Inherently, those scoring ‘4’ on the Outline can only decline or remain unchanged. Similarly, those scoring ‘0’ can only improve or remain unchanged. As the purpose of this study is to determine where improvement occurs and why, it may be more prudent to compare improvement/decline percentages and exclude those scoring 4s on the Outline score (bottom three rows, Table 3). Based on these results, improvement is exhibited in all dimensions and overall score.

Rubric Score	Introduction	Organization	Support	Oral Documentation	Conclusion	OVERALL
<i>All artifacts</i>						
Outline Mean	8.4	9.0	8.5*	6.9	8.3	81.8
Informative Speech Mean	8.0	8.6	8.8*	7.6	7.7	81.8
<i>Change from Outline to Speech</i>	<i>-0.4</i>	<i>-0.4</i>	<i>0.3*</i>	<i>0.7</i>	<i>-0.6</i>	<i>0.0</i>
<i>Only artifacts that did not score 4/4 on outline</i>						
Outline Mean	6.7	7.5	8.6*	5.0	6.9	79.3
Informative Speech Mean	7.0	8.1	8.8*	6.9	7.5	81.1
<i>Change from Outline to Speech</i>	<i>0.3</i>	<i>0.6</i>	<i>0.2*</i>	<i>1.9</i>	<i>0.6</i>	<i>1.8</i>

Table 3. Comparison of changes in mean score from Outline rubric dimensions to Informative Speech. \*Denotes Informative Speech point-scale is a maximum of 15 points where Outline is 10. For these cases, Informative Speech results are normalized to a 10-point scale for comparison purposes.

A second way of describing results for this type of study is to review the percent improvements of common artifacts (originating from the same student) as shown in Figure 1 denoted by the black bar along with percent declines denoted by the red bar. From this figure, the same two dimensions which exhibited positive changes in mean scores also exhibit net improvements by students. The “Support” dimension exhibits net improvement in 24.7% of the artifacts (e.g., Speech = 4 compared to Outline = 3, or 3 to 2, etc.), compared with 17.0% decline while “Oral Documentation” exhibits 36.8% net improvement compared with 25.8% decline. As with Table 3, we compare only those artifacts which did not score perfect results on the Outline (Figure 2). From this figure, as with Table 3 above using extracted data, all 5 dimensions exhibit net improvement ranging from 23.0% in “Conclusion” to 54.0% in “Oral Documentation”.

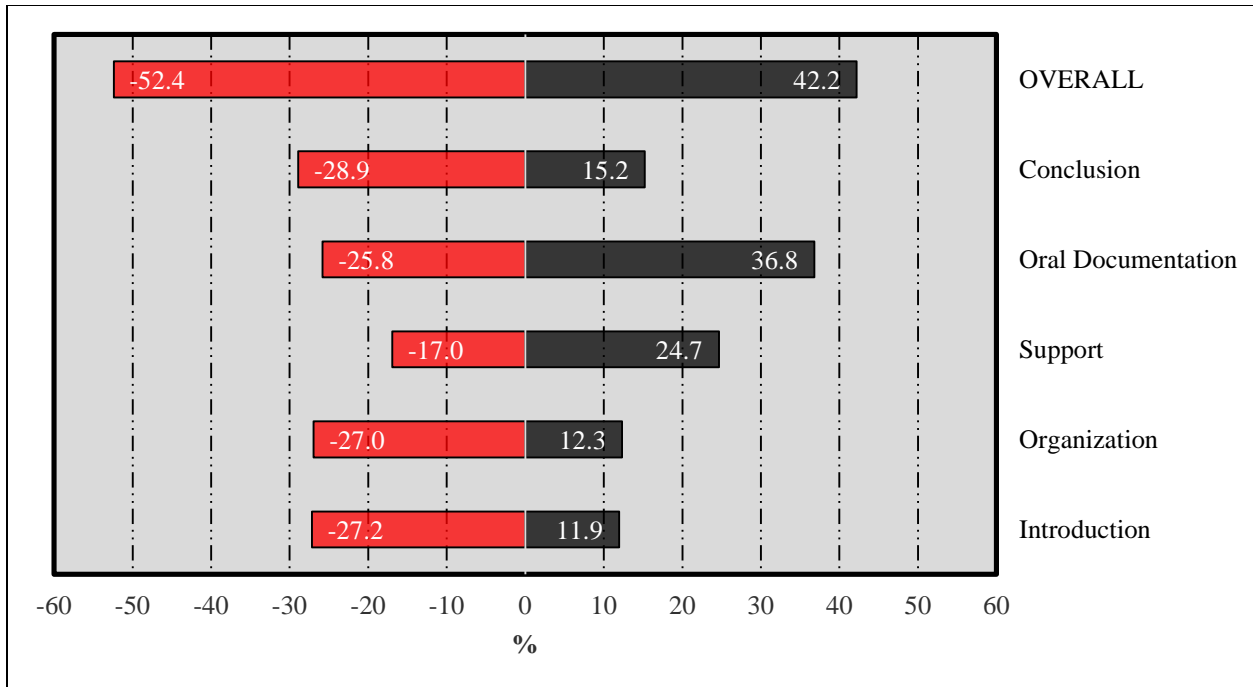


Figure 1. Percent increase/decrease from Outline to Speech by common rubric dimension for fall 2016. Note that no change was exhibited by 61% for "Introduction", 61% for "Organization", 58% for "Support", 37% for "Oral Documentation", and 56% for "Conclusion".

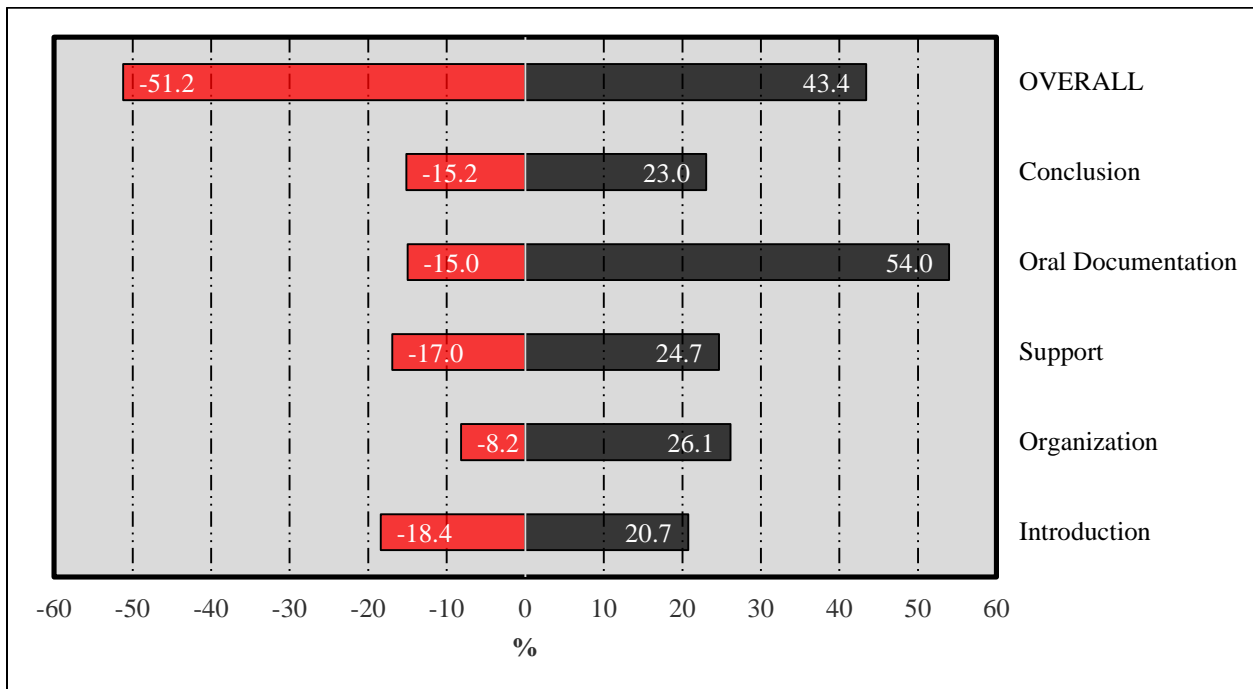


Figure 2. Percent increase/decrease from Outline to Speech by common rubric dimension for fall 2016 excluding those artifacts scoring perfect 4/4 on Outline. Note that no change was exhibited by 61% for "Introduction", 66% for "Organization", 58% for "Support", 31% for "Oral Documentation", and 62% for "Conclusion".

### 2.1.2 Descriptive Statistics & Longitudinal Data

Descriptive statistics for SPC 1017 artifacts for both Outline and Informative Speech can be found in Tables 4 and 5. A histogram of artifact scores for both Outline and Speech is shown in Figure 1. While both distributions are similar, one distinction is that the Speech does not exhibit a tail including a number of lower scoring artifacts.

	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Language</i>	<i>NV-Vocal</i>	<i>NV-Physical</i>	<i>Presentation Media</i>	<i>Attire</i>	<i>Conclusion</i>
n	673	673	673	673	673	673	673	673	673	673
Max	10	10	15	10	10	10	15	5	5	10
Min	0	0	5	0	0	3	0	0	0	0
Mode	10	10	15	8	10	8	12	5	5	8
Mean	8.3	8.7	13.4	7.5	9.1	8.2	11.8	4.0	4.7	8.0
Standard deviation	1.87	1.40	2.00	2.63	1.13	1.42	2.57	1.36	0.62	2.13

Table 4. Descriptive statistics for SPC 1017 Informative Speech.

Rubric Score	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Conclusion</i>
n	692	692	692	692	692
Max	10	10	10	10	10
Min	0	0	0	0	0
Mode	10	10	10	10	10
Mean	8.4	6.9	8.5	9.0	8.3
Standard deviation	2.10	3.38	1.84	1.58	1.96

Table 5. Descriptive statistics for SPC 1017 Outline.

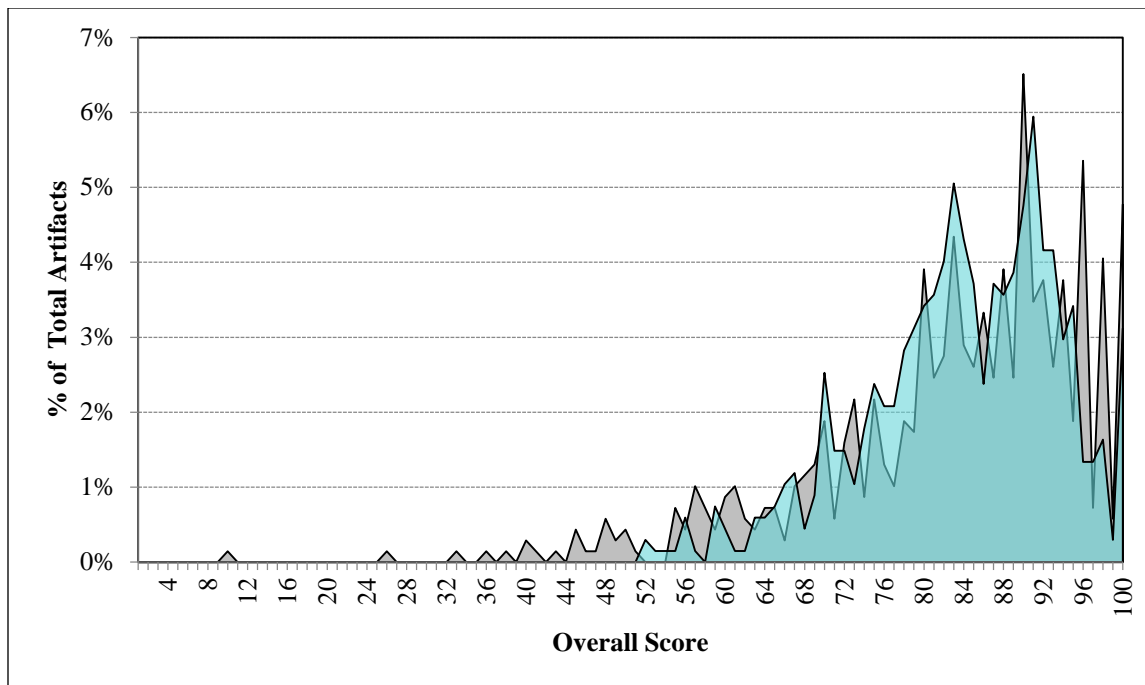


Figure 3. Overall score distribution for Outline (gray) and Speech (teal) (fall 2016 term).

To describe the behavior of the rubric dimensions for the Informative Speech based on overall achievement a color map, or binary raster image was created by calculating the mean scores for each dimension as a function of combined score (Figure 4). To create this image the rubric scores (4, 3, 2, 1,

or 0) for each artifact was grouped based on combined raw rubric score (10 dimensions x maximum rubric level of 4 = 40 overall points). The color represents the mean rubric score achieved in each dimension based on the combined score as shown in the x-axis.

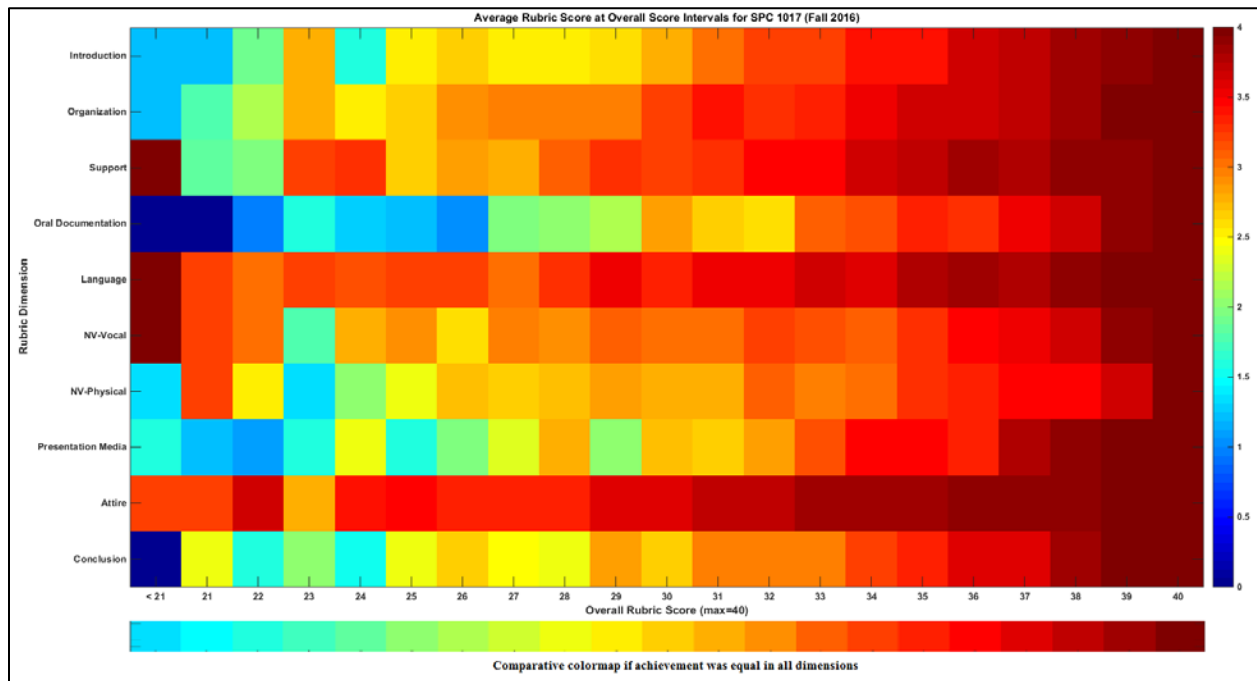


Figure 4. (Top) Colormap of mean scores for each rubric dimension (range: 0-4) based on overall rubric score (combined rubric score of all dimensions, max=40) for SPC 1017. (Bottom) Comparison rubric dimension if dimension score is the same as overall (i.e. artifact overall score is equally distributed across all sections). A rubric dimension with hotter colors (reds/yellows) means that dimension achievement exceeds the overall score and is an area of strength. An exam section with colder colors (blues/greens) means that section achievement is lower than the overall score and is therefore an area of weakness.

A review of the colormap in Figure 4 shows that at 34/40 and above (average rubric score of 3.4 or higher) all dimensions fair relatively equally (hot colors fairly evenly distributed). This is similar to fall 2015 and spring 2016 data in which 33/40 and above and 34/40 and above exhibited relatively equal strength, respectively. When overall rubric scores range from 25-33, the “Support”, “Language”, and “Attire” dimensions exhibit strong scores even when the overall score is somewhat lower. For example, at an overall score of 27, those three dimensions exhibit average scores of 2.8/4, 3.0/4, and 3.3/4, well above the average rubric score at that level, 2.7/4. When overall rubric scores range below 27, “Oral Documentation”, “Presentation Media”, and “Conclusion” are weaker than the others. From a student performance perspective, over achieving students tend to be equally strong in all dimensions, moderate students tend to excel in Support, Language, and Attire, while beginning to lag in other dimensions, and under achieving students tend to be exceedingly lagging in “Oral Documentation”, “Presentation Media” and “Conclusion”.

A comparison of fall 2016 Informative Speech results with past results is shown in Figure 5 below. Results exhibit consistency among all rubric dimensions. Slight decreasing trends in both “Support” and “NV-Vocal” both appear to have reversed somewhat in the most recent term.

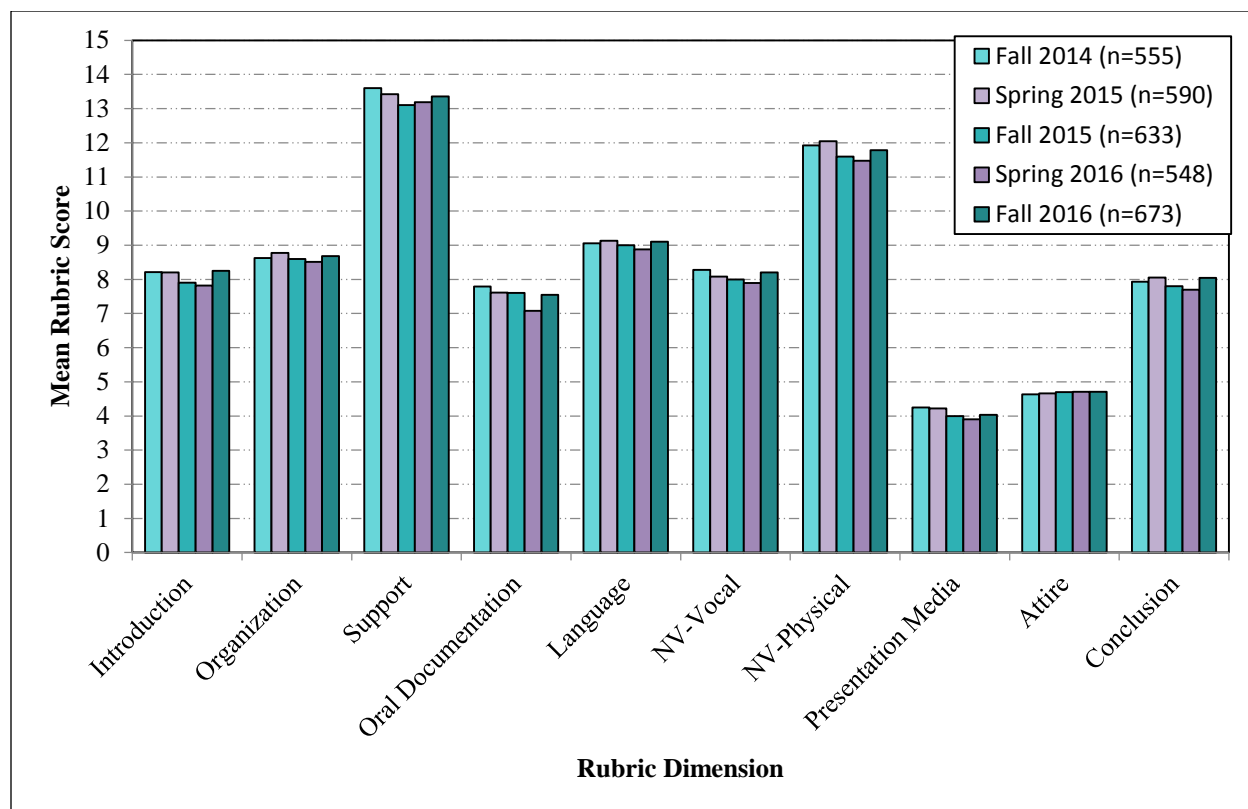


Figure 5. Comparison of mean scores for Informative Speech through time beginning fall 2014 (teal) through spring 2015 (purple), fall 2015 (darker teal), spring 2016 (dark purple), and fall 2016 (darkest teal).

## 2.2 SPC 2608

### 2.2.1 Learning Objectives

For the fall 2016 assessment, 175 artifacts were collected for SPC 2608 from 10 of 11 course sections. In some cases, rubric scores could either not be accessed or located. The faculty established goal for SLO1, a rating of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “Oral Documentation” for 70% of the students was met. Fall 2016 artifacts exhibit 91% of artifacts scored level 2 or greater (Table 6). The faculty established goal for SLO2, a rating of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “NV-Physical” for 70% of the students was met. Fall 2016 artifacts exhibit 97% scored level 2 or greater. Results for SLO3 require a somewhat different reporting process and, for convenience and clarity, are discussed following SLOs 4 and 5. The faculty established goal for SLO4, a rating of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Introduction” was met. Fall 2016 artifacts exhibit 95% of scored level 2 or greater in both Informative Speech and Outline. The faculty established goal for SLO5, a rating of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Conclusion” was met. Fall 2016 artifacts exhibit 97% of scored level 2 or greater in Informative Speech and Outline.

Rubric Score	Introduction	Organization	Support	Oral Documentation	Language	NV-Vocal	NV-Physical	Presentation Media	Attire	Conclusion
Developing or higher	95%	98%	99%	91%	100%	99%	97%	90%	99%	97%
4	53.1%	64.0%	90.9%	42.9%	53.1%	27.4%	80.6%	61.1%	82.3%	44.6%
3	28.6%	25.7%	8.0%	30.3%	46.3%	49.7%	16.6%	23.4%	13.7%	38.3%
2	13.1%	8.6%	0.0%	18.3%	0.6%	21.7%	0.0%	5.1%	3.4%	14.3%
1	4.6%	1.7%	1.1%	6.3%	0.0%	0.0%	2.3%	2.3%	0.6%	2.3%
0	0.6%	0.0%	0.0%	2.3%	0.0%	1.1%	0.6%	8.0%	0.0%	0.6%

Table 6. Percentage of student achievement level by rubric dimension (includes percentage of students scoring in developmental level or higher as per SLOs) for SPC 2608. Rubric dimensions identified in SLOs in blue.

Rubric Score	Introduction	Organization	Support	Oral Documentation	Conclusion
Developing or higher	95%	98%	96%	86%	97%
4	63.4%	71.2%	46.4%	41.8%	56.9%
3	23.5%	20.9%	30.1%	29.4%	35.3%
2	8.5%	5.9%	19.6%	15.0%	5.2%
1	3.3%	2.0%	3.3%	7.2%	1.3%
0	1.3%	0.0%	0.7%	6.5%	1.3%

Table 7. Percentage of student achievement level by rubric dimension for Outline that are common to Informative Speech for (includes percentage of students scoring in developmental level or higher as per SLOs).

The faculty established goal for SLO3, students will improve in the common outcomes of the Informative Speech Outline and the Informative Speech was met. To effectively illustrate this, again two separate descriptions are provided. First, Table 8 describes mean scores by dimension and overall score for both Outline and Informative Speech. Note that artifact scores for the “Support” dimension of the Informative Speech were adjusted from a 15-point scale to a 10-point scale for comparison.

From these results improvement is exhibited in 2 of 5 dimensions as well as the overall. As with SPC 1017, it is somewhat misleading to compare improvement/decline percentages based on all data. As such, the bottom three rows of Table 8 compares improvement/decline percentages and excludes those scoring 4s on the Outline score (bottom row, Table 8). Based on these results, improvement is exhibited in all dimensions and overall score.

Rubric Score	Introduction	Organization	Support	Oral Documentation	Conclusion	OVERALL
<i>All artifacts</i>						
Outline Mean	8.8	9.2	8.3*	7.7	8.9	83.3
Informative Speech Mean	8.3	9.0	9.1*	8.0	8.4	84.5
Change from Outline to Speech	-0.5	-0.2	0.8*	0.3	-0.5	1.3
<i>Only artifacts that did not score 4/4 on outline</i>						
Outline Mean	6.8	7.2	8.4*	7.2	7.5	82.8
Informative Speech Mean	7.3	8.2	9.1*	7.4	7.9	83.5
Change from Outline to Speech	0.5	1.0	0.7*	0.2	0.4	0.7

Table 8. Comparison of changes in mean score from Outline rubric dimensions to Informative Speech. \*Denotes Informative Speech point-scale is a maximum of 15 points where Outline is 10. For these cases, Informative Speech results are normalized to a 10-point scale for comparison purposes.

As with SPC 1017 above, a second way of describing results for this type of study is to review the percent improvements of common artifacts (originating from the same student) as shown in Figure 6 denoted by the black bar along with percent declines denoted by the red bar. From this figure, the same two dimensions which exhibited positive changes in mean scores also exhibit net improvements by students. The “Support” dimension exhibits net improvement in 32.4% of the artifacts (e.g., Speech =



4 compared to Outline = 3, or 3 to 2, etc.), compared with 6.8% decline while “Oral Documentation” exhibits 27.0% net improvement compared with 25.0% decline. And as before, we compare only those artifacts which did not score perfect results on the Outline (Figure 7). From this figure, as with Table 8 above using extracted data, all 5 dimensions exhibit net improvement ranging from 32% in “Conclusion” to 48% in “Organization”.

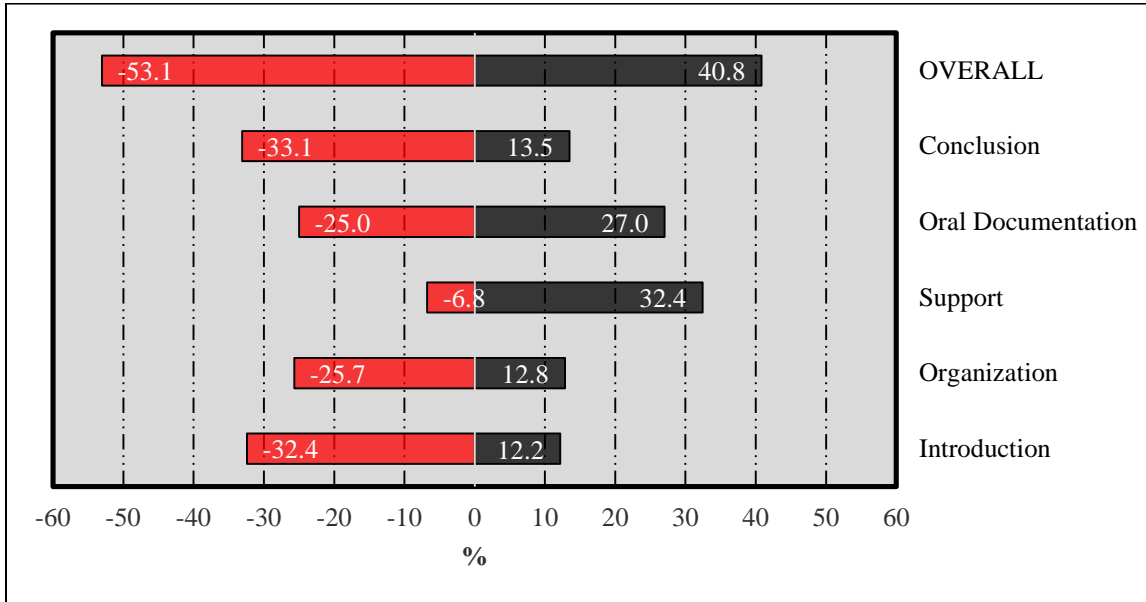


Figure 6. Percent increase/decrease from Outline to Speech by common rubric dimension for fall 2016. Note that no change was exhibited by 55% for “Introduction”, 62% for “Organization”, 61% for “Support”, 48% for “Oral Documentation”, and 53% for “Conclusion”.

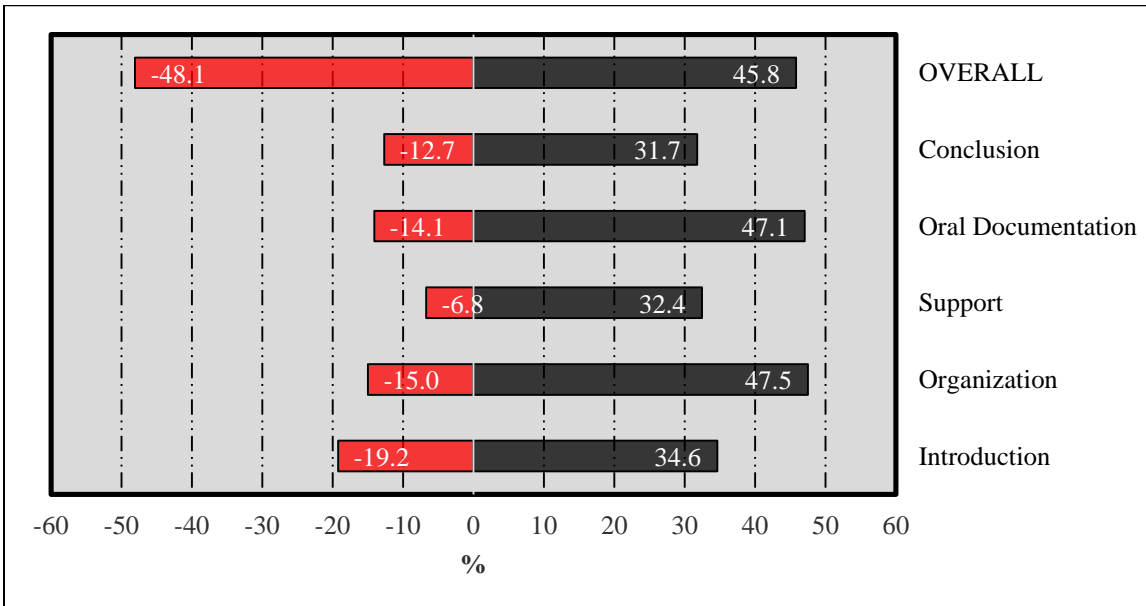


Figure 7. Percent increase/decrease from Outline to Speech by common rubric dimension for fall 2016 excluding those artifacts scoring perfect 4/4 on Outline. Note that no change was exhibited by 46% for “Introduction”, 38% for “Organization”, 61% for “Support”, 39% for “Oral Documentation”, and 56% for “Conclusion”.

### 2.2.2 Descriptive Statistics & Longitudinal Data

Descriptive statistics for SPC 2608 artifacts for both Outline and Informative Speech can be found in Tables 9 and 10. A histogram of artifact scores for both Outline and Speech is shown in Figure 8. While both distributions inhabit similar ranges, the Outline scores exhibit a large percentage of perfect scores (nearly 11%) compared with just over 2% for the Speech.

	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Language</i>	<i>NV-Vocal</i>	<i>NV-Physical</i>	<i>Presentation Media</i>	<i>Attire</i>	<i>Conclusion</i>
n	175	175	175	175	175	175	175	175	175	175
Max	10	10	15	10	10	10	15	5	5	10
Min	0	3	5	0	6	0	0	0	2	0
Mode	10	10	15	10	10	8	12	5	5	10
Mean	8.5	9.0	13.7	8.0	9.1	8.0	12.1	4.2	4.8	8.4
Standard deviation	1.98	1.52	2.12	2.35	1.02	1.65	2.46	1.42	0.53	1.76

Table 9. Descriptive statistics for SPC 2608.

Rubric Score	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Conclusion</i>
n	153	153	153	153	153
Max	10	10	10	10	10
Min	0	3	0	0	0
Mode	10	10	10	10	10
Mean	8.8	9.2	8.3	7.7	8.9
Standard deviation	1.97	1.46	1.95	2.86	1.71

Table 10. Descriptive statistics for SPC 2608 Outline.

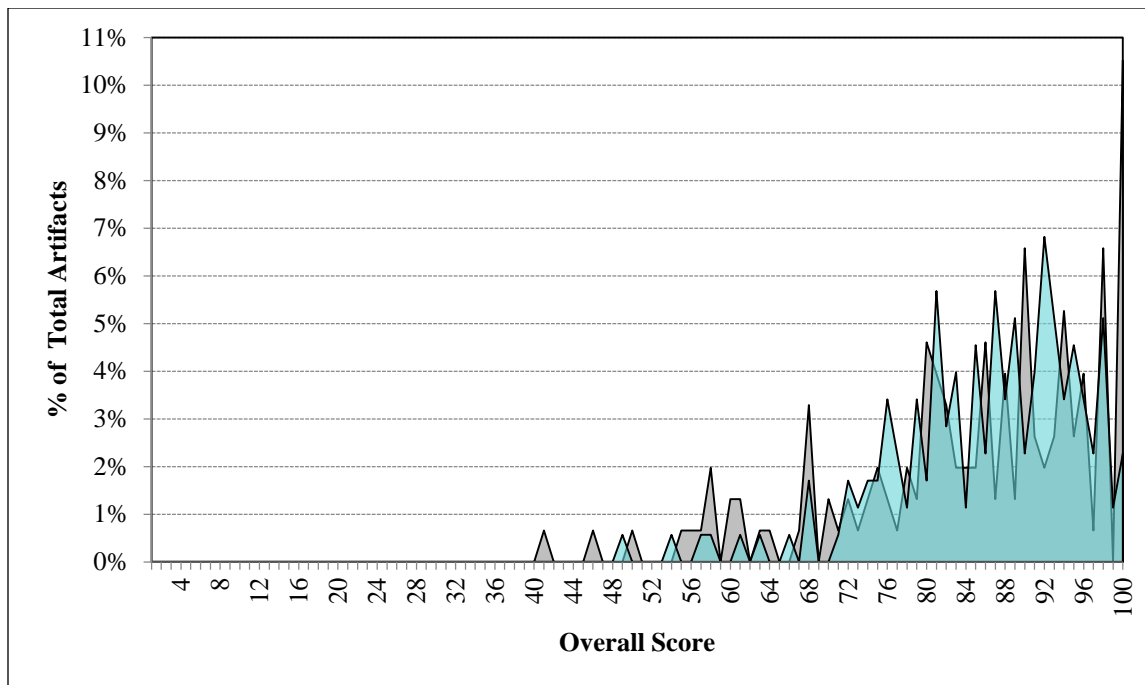


Figure 8. Overall score distribution for Outline (gray) and Speech (teal) (fall 2016 term).

To describe the behavior of the rubric dimensions based on overall achievement a color map, or binary raster image was created by calculating the mean scores for each dimension as a function of combined score (Figure 9). To create this image the rubric scores (4, 3, 2, 1, or 0) for each artifact was grouped

based on combined raw rubric score (10 dimensions x maximum rubric level of 4 = 40 overall points). The color represents the mean rubric score achieved in each dimension based on the combined score as shown in the x-axis.

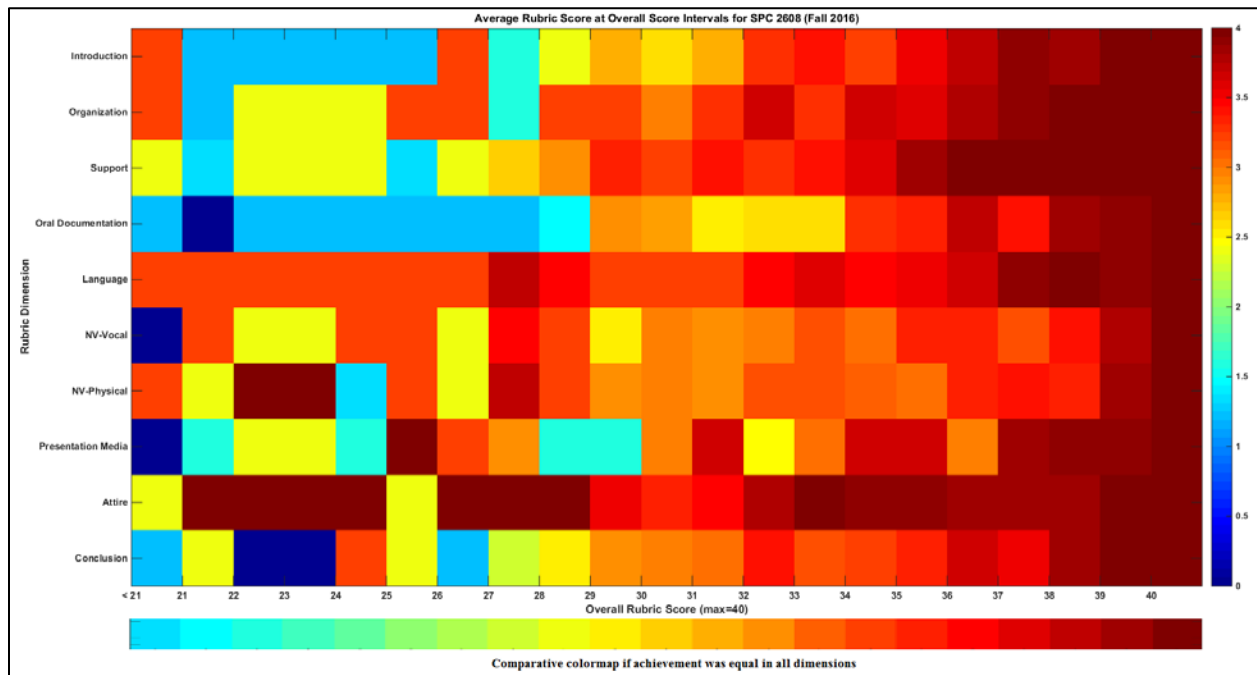


Figure 9. (Top) Colormap of mean scores for each rubric dimension (range: 0-4) based on overall rubric score (combined rubric score of all dimensions, max=40) for SPC 2608. (Bottom) Comparison rubric dimension if dimension score is the same as overall (i.e. artifact overall score is equally distributed across all sections). A rubric dimension with hotter colors (reds/yellows) means that dimension achievement exceeds the overall score and is an area of strength. An exam section with colder colors (blues/greens) means that section achievement is lower than the overall score and is therefore an area of weakness.

A review of the colormap in Figure 9 shows that at 34/40 and above (average rubric score of 3.4 or higher) all dimensions fair relatively equally (hot colors fairly evenly distributed), which is quite similar to colormap results of fall 2015 and spring 2016. When overall rubric scores range below 29, “Oral Documentation”, “Presentation Media”, and “Conclusion” are somewhat weaker than the others, which is also fairly similar to that of fall 2015 and spring 2016. From a student performance perspective, strong students tend to be equally strong in all dimensions. Meanwhile, weaker students tend to be exceedingly lagging in “Oral Documentation”, “Presentation Media”, and “Conclusion”.

A comparison of fall 2016 results with past results is shown in Figure 10 below. Results exhibit consistency among all rubric dimensions. The “Support” dimension exhibits a significant increase over time that appears to be holding at elevated levels since the increase.

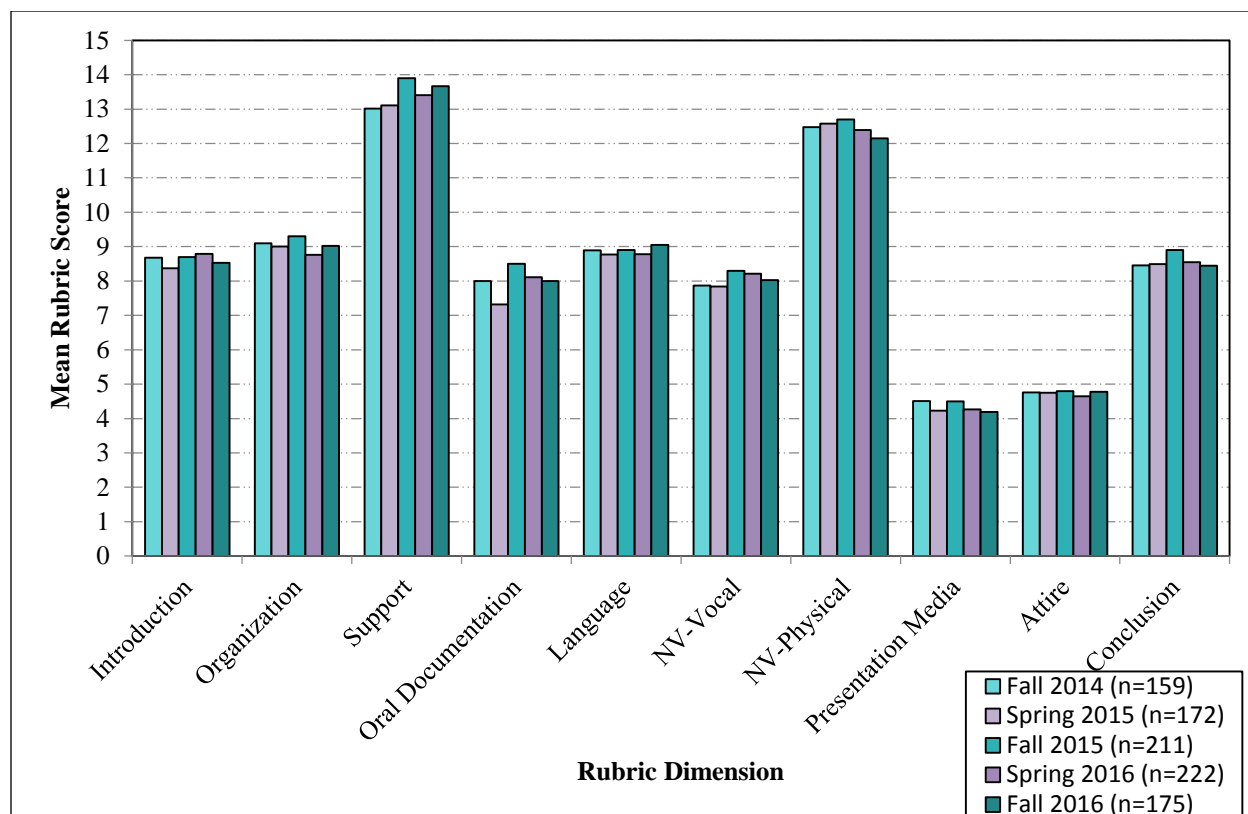


Figure 10. Comparison of mean scores for Informative Speech through time beginning fall 2014 (teal) through spring 2015 (purple), fall 2015 (darker teal), spring 2016 (dark purple), and fall 2016 (darkest teal).

### 3 EXPLORATORY ANALYSIS AND SIGNIFICANCE TESTING

Multiple comparisons of artifact scores across varying formats, campuses, and student types were made in order to add depth to the distribution of the artifacts by achievement level. Each course was divided into the appropriate subgroups to perform the analysis. Where possible, additional methods of analysis were conducted to provide a broader picture of these comparisons.

#### 3.1 SPC 1017

##### 3.1.1 Dual Enrollment to non-Dual Enrollment Comparison

No dual enrollment sections of SPC 1017 were offered during fall 2016 so no comparison study could be completed.

##### 3.1.2 Online to Traditional Comparison

During the fall 2016 semester, 188 total online artifacts and 485 traditional artifacts were collected from SPC 1017 course sections. A comparison of mean scores by rubric dimension is provided in Table 12 and a graphical representation is provided in Figure 13. Mean scores are higher for online courses in four of ten dimensions. Differences in the means for all dimensions and overall score were tested for significance using a Welch's t-test according to standard methods (Davis, 1973; McDonald, 2009; Wilkinson, 1999). Of these, "Oral Documentation", "NV-Vocal", "NV-Physical", "Presentation Media",

and “Attire” are statistically significantly different. Therefore we must reject the null hypothesis that the differences in the means of the artifacts of the two course section types are equal to 0 for these dimensions, and we can conclude with a 95% confidence that the differences in scores are not solely due to chance. However, based on the work of Johnson (2013), there is a 17-25% chance that the marginally significant result (denoted in Table 12 as \*) may be false positives (i.e. Type I errors).

	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Language</i>	<i>NV-Vocal</i>	<i>NV-Physical</i>	<i>Presentation Media</i>	<i>Attire</i>	<i>Conclusion</i>	<i>Combined Score</i>
<i>Rubric Max</i>	10	10	15	10	10	10	15	5	5	10	100
Online mean	8.3	8.7	13.3	7.3	9.1	8.8	11.3	3.3	4.6	8.4	83.1
Traditional mean	8.2	8.7	13.4	7.6	9.1	8.0	12.0	4.3	4.7	7.9	83.9
Effect Size	-0.02	0.00	0.06	0.10	-0.01	-0.53	0.19	0.55	0.17	-0.22	0.07
p-value	0.958	0.972	0.452	<b>0.009</b>	0.967	$3.77 \times 10^{-11}$	<b>0.012*</b>	$3.42 \times 10^{-14}$	<b>0.017*</b>	0.165	0.366

Table 11. Comparison of mean scores for Online and Traditional for SPC 1017. Bold denote statistically significant difference. Rubric dimensions identified in SLOs in blue. Positive effect sizes indicate a higher mean score for Traditional artifacts. \*Denote marginal significance as defined by Johnson (2013).

Effect size was calculated using a method devised by Rosenthal and Rosnow (1991) for meta-analytical purposes in potential comparisons with other institutions (Lipsey and Wilson, 1993). The statistically significant results exhibit what Cohen (1988) would consider small-to-medium effect sizes ranging from 0.00 to 0.55 (Table 12). In other words, non-overlap from online artifacts to traditional artifacts range from approximately 0% to 35%.

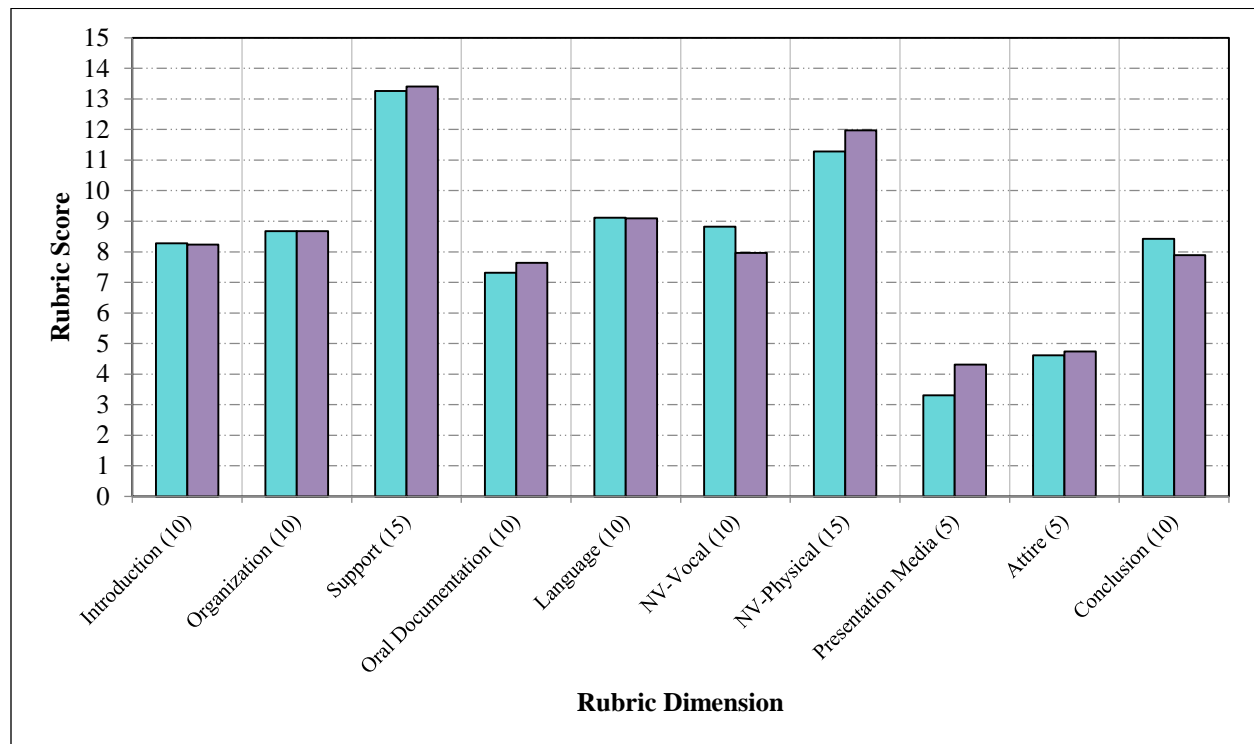


Figure 11. Comparison of mean scores for online (teal) and traditional (purple) scores for SPC 1017 (fall 2016 term).

### 3.1.3 Comparison by Campus/Site

Of the 673 artifacts collected from SPC 1017, 82 originated from the Charlotte campus, 116 from the Collier campus, 188 from FSW Online, and 287 from the Thomas Edison (Lee) campus. Scores by rubric dimension varied greatly across campuses. A comparison of mean scores by rubric dimension is provided in Table 13.

	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Language</i>	<i>NV-Vocal</i>	<i>NV-Physical</i>	<i>Presentation Media</i>	<i>Attire</i>	<i>Conclusion</i>	<i>Combined Score</i>
<i>Rubric Max</i>	10	10	15	10	10	10	15	5	5	10	100
Charlotte	<b>9.3</b>	<b>9.0</b>	13.9	8.0	9.1	8.2	<b>11.9</b>	<b>4.8</b>	<b>4.9</b>	<b>9.0</b>	88.0
Collier	7.4	8.7	<b>14.3</b>	<b>8.1</b>	<b>9.6</b>	7.1	10.5	4.0	4.6	7.7	82.1
FSW Online	8.3	8.7	13.3	7.3	9.1	<b>8.8</b>	<b>11.3</b>	3.3	4.6	8.4	83.1
Thomas Edison (Lee)	8.3	8.6	12.9	7.4	8.9	8.2	12.6	4.3	4.8	7.7	83.5

Table 12. Comparison of mean scores by site for SPC 1017. Bold denotes highest mean score in that dimension among all sites. Rubric dimensions identified in SLOs in blue.

Charlotte campus exhibits higher scores in 6/10 dimensions, up from 5/10 in fall 2015 but down from 8 in spring 2016. Charlotte also exhibits the highest overall score. The remaining 4/10 highest scores occur with Collier (3) and FSW Online (1). A plot comparing descriptive statistics of the combined (overall) scores by site is presented in Figure 14. There is extensive overlap between sites. However, Charlotte exhibits a distribution on the upper end of that overlap with progressively negatively shifted modes (central tendencies) for Thomas Edison and then Collier. For example, over 31% of Charlotte's scores range from 93 or higher. Meanwhile, in that same range, Thomas Edison exhibits only 15%. Additionally, FSW Online exhibits a more evenly distributed range of scores with no discernible peak when compared with traditional sites.

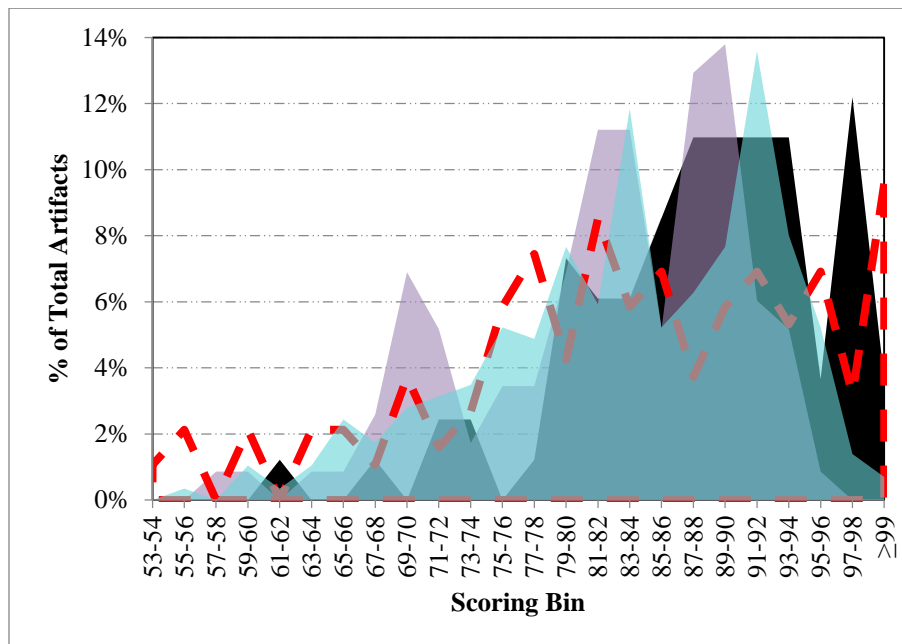


Figure 12. Comparison of artifact score distribution for Charlotte (black), Collier (purple), FSW Online (outlined in red), and Thomas Edison (teal).

A one-way analysis of variance was used to compare means of the combined rubric scores at each site. Results of the ANOVA exhibit a statistically significant difference between sites (see Table 14). Therefore, we can reject the null hypothesis that the mean combined rubric scores at each site are equal to each other and we can conclude with a 95% confidence that the differences in scores are not solely due to chance.

Source of Variation	Sum of squared differences	df	Mean Squares	F <sub>obs</sub>	p-value	F <sub>crit</sub>
Between Sites	1878.5	3	626.2	6.77	0.0002	2.62
Within Sites	61,834.0	669	92.4			
Total	63,712.6	672				

Table 13. Results of one-way ANOVA of combined rubric scores at each site for SPC 1017.

## 3.2 SPC 2608

### 3.2.1 Dual Enrollment to non-Dual Enrollment Comparison

While there was one offsite (dual enrollment) course section offered during fall 2016, the section did not report data. As a result, no comparison study could be completed.

### 3.2.2 Online to Traditional Comparison

During the fall 2016 semester, 56 total online artifacts and 119 traditional artifacts were collected from SPC 2608 course sections. A comparison of mean scores by rubric dimension is provided in Table 15 and a graphical representation is provided in Figure 15. Mean scores are higher for online courses in 8 of 10 dimensions, down from 10 in spring 2016, as well as the overall score. Differences in the means for all dimensions and overall score were tested for significance using a Welch's t-test according to standard methods (Davis, 1973; McDonald, 2009; Wilkinson, 1999). Of the dimensions in which online sections exhibit a higher mean, "Introduction", "Organization", "Support", "Oral Documentation", "Language", and "Conclusion" are statistically significantly different. Of the dimensions in which traditional sections exhibit a higher mean, "Presentation Media" is statistically significantly different. Therefore we must reject the null hypothesis that the differences in the means of the artifacts of the two courses in these particular dimensions as well as the overall score are equal to 0, and we can conclude with a 95% confidence that the differences in scores are not solely due to chance. It should be noted that there is a 17-25% chance that the marginally significant results between the means of the NV-Physical and Conclusion dimensions may be a Type I error according to Johnson (2013).

Effect size was calculated using a method devised by Rosenthal and Rosnow (1991) for meta-analytical purposes in potential comparisons with other institutions (Lipsey and Wilson, 1993). The statistically significant results exhibit a wide range of effect sizes from 0.08 to 0.92 (Table 15). In other words, non-overlap from online artifacts to traditional artifacts range from approximately 7% to 52%.

	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Language</i>	<i>NV-Vocal</i>	<i>NV-Physical</i>	<i>Presentation Media</i>	<i>Attire</i>	<i>Conclusion</i>	<i>Combined Score</i>
<i>Rubric Max</i>	<i>10</i>	<i>10</i>	<i>15</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>15</i>	<i>5</i>	<i>5</i>	<i>10</i>	<i>100</i>
Online mean	9.5	9.5	14.4	8.7	9.3	8.3	11.9	3.4	4.8	9.1	88.9
Traditional mean	8.1	8.8	13.3	7.7	8.9	7.9	12.3	4.6	4.8	8.1	83.7
Effect Size	-0.92	-0.51	-0.53	-0.45	-0.37	-0.21	0.11	0.65	-0.08	-0.56	-0.49
p-value	<b>1.04x10<sup>-8</sup></b>	<b>0.001</b>	<b>0.001</b>	<b>0.014*</b>	<b>0.018*</b>	0.181	0.459	<b>3.65x10<sup>-5</sup></b>	0.622	<b>0.001</b>	<b>0.002</b>

Table 14. Comparison of mean scores for Online and Traditional for SPC 2608. Bold denote statistically significant difference. Rubric dimensions identified in SLOs in blue. Positive effect sizes indicate a higher mean score for Traditional artifacts. \*Denote marginal significance as defined by Johnson (2013).

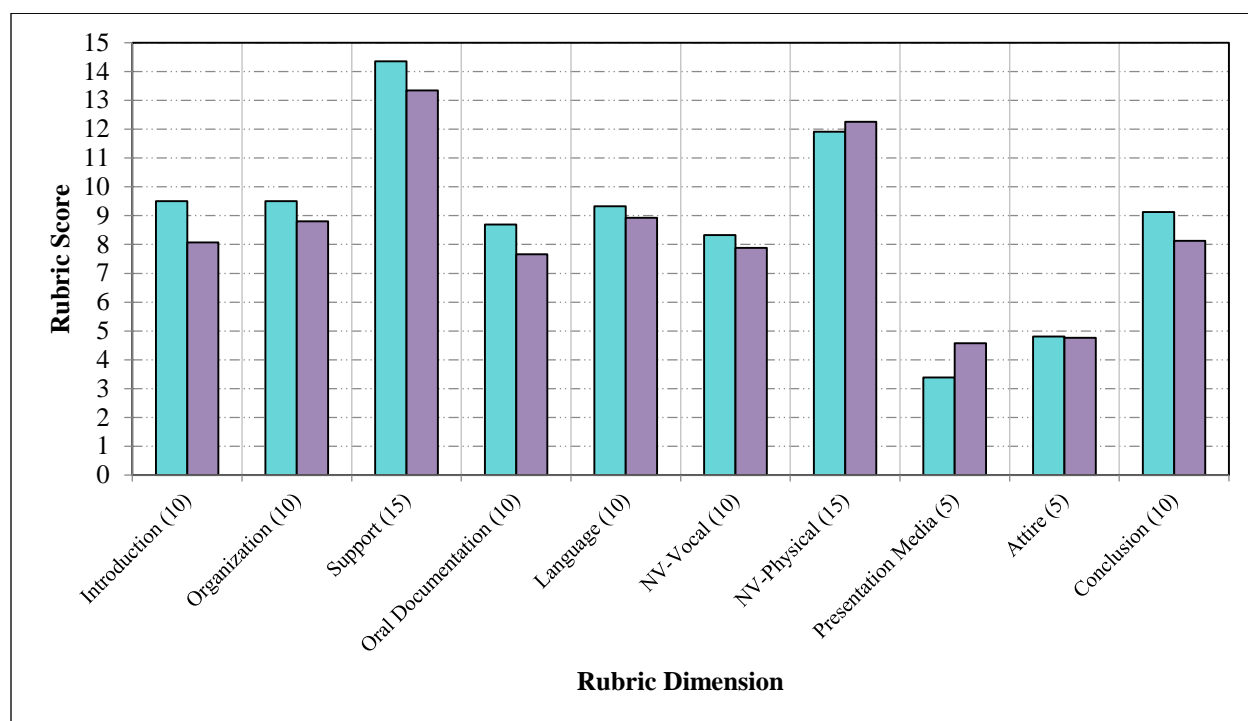


Figure 13. Comparison of mean scores for online (teal) and traditional (purple) scores for SPC 2608 (fall 2016 term).

### 3.2.3 Comparison by Campus/Site

Of the 175 artifacts collected from SPC 2608, 39 originated from the Charlotte campus, 56 from FSW Online, and 80 from the Thomas Edison (Lee) campus. FSW Online exhibits higher scores in 8/10 dimensions, down from 10 in spring 2016. FSW Online also exhibits the highest overall score. The remaining 2/10 highest scores are exhibited by Thomas Edison campus. A comparison of mean scores by rubric dimension is provided in Table 15. A plot comparing descriptive statistics of the combined scores by site is presented in Figure 14. Charlotte and Thomas Edison sites exhibit very similar distributions. FSW Online, however, exhibit results shifted more towards higher scores. A one-way analysis of variance was used to compare means of the overall scores at each site. Results of the ANOVA exhibit a statistically significant difference between sites largely as a result of the shifts exhibited by FSW Online (see Table 15). Therefore, we can reject the null hypothesis that the mean combined rubric



scores at each site are equal to each other and we can conclude with a 95% confidence that the differences in scores are not solely due to chance.

	<i>Introduction</i>	<i>Organization</i>	<i>Support</i>	<i>Oral Documentation</i>	<i>Language</i>	<i>NV-Vocal</i>	<i>NV-Physical</i>	<i>Presentation Media</i>	<i>Attire</i>	<i>Conclusion</i>	<i>Combined Score</i>
<i>Rubric Max</i>	<b>10</b>	10	15	<b>10</b>	10	10	<b>15</b>	5	5	<b>10</b>	100
Charlotte	8.9	9.0	13.9	8.1	9.2	7.6	11.7	4.6	4.7	8.7	86.5
FSW Online	<b>9.5</b>	<b>9.5</b>	<b>14.4</b>	<b>8.7</b>	<b>9.3</b>	<b>8.3</b>	<b>11.9</b>	3.4	4.8	<b>9.1</b>	<b>88.9</b>
Thomas Edison (Lee)	7.7	8.7	13.1	7.5	8.8	8.0	12.6	<b>4.6</b>	<b>4.8</b>	7.8	83.4

Table 15. Comparison of mean scores by site for SPC 2608. Bold denotes highest mean score in that dimension among all sites. Rubric dimensions identified in SLOs in blue.

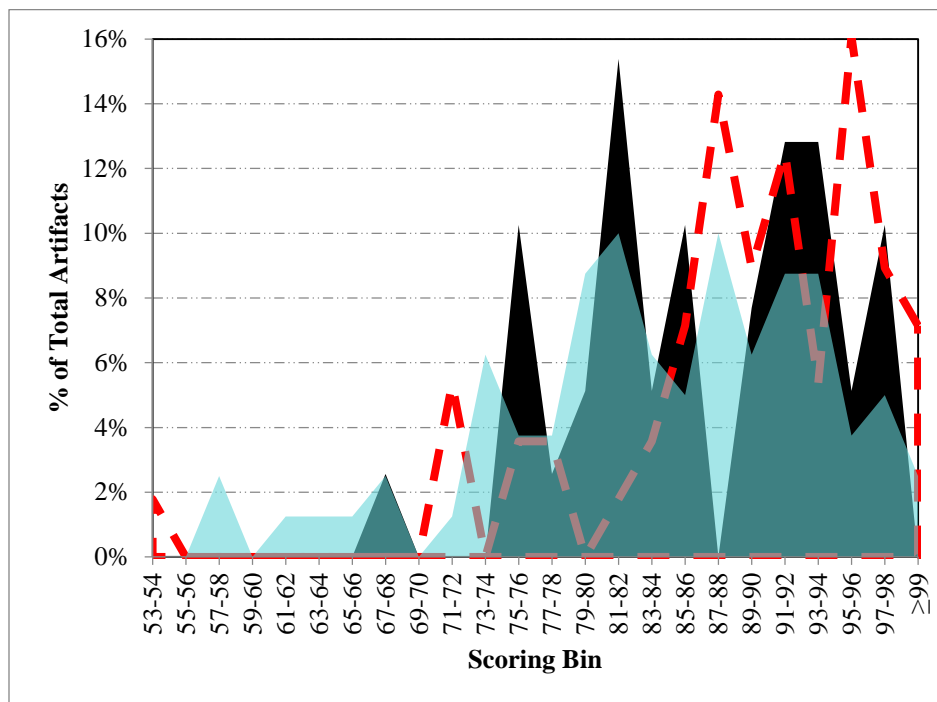


Figure 14. Comparison of artifact score distribution for Charlotte (black), FSW Online (outlined in red), and Thomas Edison (teal).

Source of Variation	Sum of squared differences	df	Mean Squares	F <sub>obs</sub>	p-value	F <sub>crit</sub>
Between Sites	1037.9	2	519.0	5.92	0.003	3.05
Within Sites	15,072.2	172	87.6			
Total	16,110.1	174				

Table 16. Results of one-way ANOVA of combined rubric scores at each site for SPC 2608.

## 4 CONCLUSIONS

FSW’s Speech Department employed a common rubric used by all faculty as a means to evaluate an agreed upon series of student level outcomes for SPC 1017 and SPC 2608. Faculty goals in assessment included tracking rubric implementation, Student Learning Objectives (SLOs) to include Introduction,

Oral Documentation, and Conclusion, and comparisons between dual enrollment and non-dual enrollment students, online and traditional students, and by site.

A drilldown of SPC 1017 results are as follows:

1. SLO 1 – Achievement of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “Oral Documentation” for 70% of the students was met.
2. SLO 2 – Achievement of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “NV-Physical” for 70% of the students was met.
3. SLO 3 – Achievement of students will improve in the common outcomes of the Informative Speech Outline and the Informative Speech was met.
4. SLO 4 – Achievement of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Introduction” was met.
5. SLO 5 – Achievement of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Conclusion” was met.
6. Distribution of artifact scores was centered on 91/100 and is moderately negatively skewed, meaning scores are shifted towards the higher range.
7. In a study comparing rubric achievement based on overall score, over achieving students tend to be equally strong in all dimensions, moderate students tend to excel in “Support”, “Language”, and “Attire”, while beginning to lag in other dimensions, and under achieving students tend to be exceedingly lagging in “Oral Documentation”, “Presentation Media”, and “Conclusion”.
8. In a longitudinal study, results exhibit consistency among all rubric dimensions. Slight decreasing trends in both “Support” and “NV-Vocal” both appear to have reversed somewhat in the most recent term.
9. No comparison between dual enrollment sections and traditional sections could be made because no dual enrollment sections were offered during fall 2016.
10. In a comparison of online to traditional artifacts mean scores are higher for online courses in four of ten dimensions. Of these, “Oral Documentation”, “NV-Vocal”, “NV-Physical”, “Presentation Media”, and “Attire” are statistically significantly different.
11. In a cross-campus comparison, Charlotte campus exhibits higher scores in 6/10 dimensions, up from 5/10 in fall 2015 but down from 8 in spring 2016. Charlotte also exhibits the highest overall score. The remaining 4/10 highest scores occur with Collier (3) and FSW Online (1). Results of the ANOVA exhibit a statistically significant difference between sites.

A drilldown of SPC 2608 results are as follows:

1. SLO 1 – Achievement of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “Oral Documentation” for 70% of the students was met.
2. SLO 2 – Achievement of “Developing” or higher ( $\geq 2$ ) in the Informative Speech rubric dimension “NV-Physical” for 70% of the students was met.
3. SLO 3 – Achievement of students will improve in the common outcomes of the Informative Speech Outline and the Informative Speech was met.
4. SLO 4 – Achievement of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Introduction” was met.
5. SLO 5 – Achievement of “Developing” or higher ( $\geq 2$ ) in both the Informative Speech and Outline rubric dimension “Conclusion” was met.
6. Distribution of artifact scores is centered on 92/100 and has a large negative skew, meaning scores are substantially shifted towards the higher range.

7. In a study comparing rubric achievement based on overall score, strong students tend to be equally strong in all dimensions. Meanwhile, weaker students tend to be exceedingly lagging in “Oral Documentation”, “Presentation Media”, and “Conclusion”.
8. In a longitudinal study, results exhibit consistency among all rubric dimensions. The “Support” dimension exhibits a significant increase over time that appears to be holding at elevated levels since the increase.
9. No comparison between dual enrollment sections and traditional sections could be made because no dual enrollment sections were offered during fall 2016.
10. In a comparison of online to traditional artifacts mean scores are higher for online courses in 8 of 10 dimensions, down from 10 in spring 2016, as well as the overall score. Of the dimensions in which online sections exhibit a higher mean, “Introduction”, “Organization”, “Support”, “Oral Documentation”, “Language”, and “Conclusion” are statistically significantly different. Of the dimensions in which traditional sections exhibit a higher mean, “Presentation Media” is statistically significantly different.
11. In a cross-campus comparison, FSW Online exhibits higher scores in 8/10 dimensions, down from 10 in spring 2016. FSW Online also exhibits the highest overall score. Results of the ANOVA exhibit a statistically significant difference between sites largely as a result of the shifts exhibited by FSW Online.

## 5 REFERENCES

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- Cohen, J. 1988. *Statistical power analysis for the behavioral sciences* (2<sup>nd</sup> ed.). Lawrence Erlbaum Associates, Hillsdale, NJ.
- Cole, R., Haimson, J., Perez-Johnson, I., and May, H. 2011. *Variability in Pretest-Posttest Correlation Coefficients by Student Achievement Level*. NCEE Reference Report 2011-4033. Washington, DC: National Center for Education Evaluation and Regional Assistance, U.S. Department of Education.
- Davis, J.C. 1973. *Statistics and Data Analysis in Geology*. John Wiley & Sons, New York, New York, 564 pp.
- Elder, L, and Paul, R. 2007. *Consequential Validity: Using Assessment to Drive Instruction*. In: *Foundation For Critical Thinking*. Retrieved from <http://www.criticalthinking.org/pages/consequential-validity-using-assessment-to-drive-instruction/790>.
- Johnson, V. 2013. *Revised Standards for Statistical Evidence*. *Proceedings of the National Academy of Science*, 110(48), 19313-19317.
- Lipsey, M.W. and Wilson, D.B. 1993. *The efficacy of psychological, educational, and behavioral treatment: Confirmation from meta-analysis*. *American Psychologist*, 48, 1181-1209.
- McDonald, J.H. 2009. *Handbook of Biological Statistics* (2nd ed.). Sparky House Publishing, Baltimore, Maryland.
- Rosenthal, R. and Rosnow, R.L. 1991. *Essentials of behavioral research: Methods and data analysis* (2<sup>nd</sup> ed.). McGraw Hill, New York, NY.

Wilkinson, L. 1999. APA Task Force on Statistical Inference. *Statistical Methods in Psychology Journals: Guidelines and Explanations*. *American Psychologist* 54 (8), 594–604.