Comparison of Freshman Baseline with First Year Seminar and Senior Exiting Assessment Results Academic Year 2015 – 2016

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Executive Summary

Background

Recommendations from 2015 Assessment Workgroup (with current status in red)

The 2015 Summer Workgroup noted that the revision of the FYS final assessment, which allows all students to complete the assessment online, was a positive step. However, members of the group expressed concern about the length of some of the documents the students must read and evaluate before making their recommendations for the problem they must solve. We noted that the FYS Advisory Board decided to begin using real documents in the faculty developed scenarios rather than documents created by faculty. The rationale for this was that the task would be more authentic because, in the real world, professionals are called upon to identify and evaluate such documents. However, members of the assessment workgroup pointed out that, in the real world, people typically have longer than two hours to do this. There was concern that the students had to spend so long reading the documents that they didn't have sufficient time to fully evaluate them and thoughtfully develop their recommendations. We note that two students' final assessments could not be evaluated because they had not included a recommendation, presumably running out of time before getting to that part of the assessment. The assessment workgroup recommended several options to try to remedy these issues:

- Release the documents <u>before</u> the final exam. Instructors would tell students they should have read the documents before arriving for the exam. Since the exam is administered in Blackboard, one member suggested that it could be set up in two modules; first the documents, which would have to be read and evaluated for accuracy, relevance, and bias as a take-home part of the exam. Then, on the day of the exam itself, the second module allowing students to make a recommendation and indicate information still needed, would open. To our knowledge, no changes have been made in the administration of the FYS final exams.
- If the first option is not possible, the workgroup recommended that FYS faculty return to the previous method of using faculty created documents of a reasonable length. To our knowledge, no changes have been made in the administration of the FYS final exams.

• If students are instructed to give their recommendations in the form of a memorandum, the group recommended that <u>one</u> of the documents they read should be written in that format (or in whatever format they are asked to use to prepare their response). The scenario used for this year's baseline and senior assessments included a sample memorandum. The Assessment Workgroup noted that this was not consistently the case for the FYS exams.

Procedures for 2016 Assessment

General Procedures

In August 2015, 1,585 incoming freshmen at Marshall University completed baseline assessments (an additional 59 students completed the *Collegiate Learning Assessment* [*CLA+*]). Both assessments required students to analyze and evaluate information, solve problems, and write effectively. These skills are aligned to three of Marshall University's outcomes; *Information Literacy, Inquiry-Based Thinking*, and *Communication Fluency*. In the spring semester of 2016, 198 graduating seniors completed the same assessments (92 the Marshall assessment and 106 the *CLA+*). The 198 seniors who completed either the *CLA+* or Marshall's senior assessment did not differ significantly from the senior population in terms of entering academic ability based on ACT or SAT performance. However, the sample had a significantly higher mean college GPA (3.37) than the senior population (3.11) and the sample included a higher proportion of female students than did the population. Freshmen completing Marshall's mandatory First Year Seminar (FYS) completed assessments that were similar to those finished by incoming freshmen and graduating seniors.

In May 2016 a group of nine faculty representing several academic colleges from across the university evaluated a sample of Marshall's assessments using a rubric that allowed them to score each assessment across eight criteria (traits). These included *information needed* and *source acknowledgment* (Information Literacy), *evidence, viewpoints*, and *recommendation/position* (Inquiry-Based Thinking), and *development*, *convention/format*, and *communication style* (Communication Fluency). This project was coordinated by the Office of Assessment.

A random sample of 235 Marshall Freshman baseline assessments was drawn from the pool of 1,585 (15%) of the total number of assessments available. Since only 92 seniors completed the Marshall senior exiting assessment, we included all in our analysis, giving us a total of 327 assessments in our sample.

One hundred eighty-eight (188) of the 235 freshmen from our baseline sample (80%) completed FYS assessments. The reasons we had no FYS assessments from 47 of the students in the baseline sample were as follows: 12 were enrolled in, and received credit for FYS, but did not complete the final exam; 6 were enrolled in, but did not receive credit for FYS; 7 were not enrolled in FYS during academic year 2014-2015; 2 completed FYS during summer 2015, so their scores could not be used as a "post baseline" measure; and 20 students withdrew from Marshall without completing FYS.

All assessments were de-identified and, for the freshman baseline/senior comparisons, raters did not know which were completed by freshmen and which by seniors. Each assessment had two independent raters. Please see the supporting information that follows this summary for a detailed explanation of scoring procedures.

Results and Analysis

Comparison of Freshman Baseline to Senior Exiting Results and to Results at the End of FYS

Mean scores (on a scale of 1 – 4) for seniors were significantly higher than freshman baseline measures on all criteria (traits). However, mean performance for seniors ranged from a low of 2.23 (*Inquiry-Based Thinking*: viewpoints) to a high of 2.77 (*Communication Fluency*: development), indicating, as has been the case for the past four years, that there is room for improvement among Marshall's graduating seniors. Mean differences between freshman baseline performance and senior exiting performance ranged from a low of 0.27 for *Inquiry-Based Thinking*: viewpoints to a high of 0.78 for *Communication Fluency*: convention/format. We note that, for the past four years, the difference between the mean scores of freshmen and seniors has averaged about one-half of a point (ranging from 0.27 to 0.96). Mean scores for seniors have never exceeded 3.04 (*Inquiry-Based Thinking*: recommendations) in 2013, with the average being about 2.6.

Last year's (2015) workgroup discussed the two-pronged approach that Marshall uses to compare student performance in *Information Literacy, Inquiry-Based Thinking* (aka *Critical Thinking*), and *Communication Fluency* between freshman baseline and senior exiting assessments, namely that some students take the nationally standardized *Collegiate Learning Assessment (CLA+)*, while the rest take a similar assessment developed by Marshall University faculty. This process works well for freshmen and, although having representative senior samples that are large enough to draw meaningful conclusions remains problematic, the cooperation of Marshall's senior capstone instructors who ask their students to participate has helped in this regard. We also note that for the past several years the *CLA+* and Marshall Assessment results have mirrored each other. Results of the *CLA+* for the past three years (and of the *CLA* for several years prior to that) have shown Marshall University's value-added in student growth in these outcomes between freshman and senior year to be at the statistically calculated "expected level." For the past three years, the average baseline *CLA+* score of our freshman has been at the *basic* level, while the average score of our seniors has been at the *proficient* level. Likewise, for the past four years our seniors have scored significantly higher than our freshmen on all outcomes/traits of the Marshall developed assessment. As noted in the preceding paragraph, despite these results there continues to be room for our seniors to improve in all outcomes addressed in these assessments.

For the 188 students who completed both baseline and FYS assessments, *paired-samples t-tests* using adjusted alpha levels to control for Type I error (.025 for information literacy), (.017 for Inquiry-Based Thinking), and (.017 for Communication Fluency) showed significant mean differences between freshman baseline and FYS results for all outcomes/traits *except Communication Fluency*: communication style (which is not an outcome of FYS). We note that, in last year's report, we recommended that "the FYS Director and course instructors place additional

emphasis on helping students to determine information needed and to critically examine various viewpoints surrounding real-world problems." This year's results showed significant improvements over last year in FYS students' performance in these two areas (*Information Literacy*: information needed and *Inquiry-Based Thinking*: viewpoints).

Recommendations from the 2016 Assessment Workgroup

Recommendations regarding baseline and senior assessments

1. The Assessment Workgroup recommended that baseline and senior exams include a preliminary check sheet asking students to rate each document for *accuracy*, *bias*, and *relevance*. We felt that this task, although not identical to the one asked of students during the FYS final exam due to the differing lengths of time allotted to the two assessments (90 minutes for baseline and senior assessments as compared to 120 minutes for FYS final exams) would provide greater equivalence between these baseline/senior assessments and FYS final exams.

Recommendations regarding FYS Exams

- 1. The Assessment Workgroup continues to be concerned about the length of some of the documents accompanying the FYS final exams and, perhaps more pointedly, the variation in the length of these documents <u>among</u> the exams given. These documents range in length from 75 pages for the *Concealed Weapons Scenario* to 16 for the *Influenza Scenario*. That said, the page count is not a perfect predictor of difficulty because the density of print per page varies from document to document. Further, statistical analysis of the mean differences in student performance among the eight scenarios used during 2015-2016 on the eight traits of the rubric revealed only one scenario on which students scored significantly lower than on the others; that was the *Social Media Scenario*, which had a moderate number of document pages (20) for students to read. The Assessment Workgroup recommends that the FYS Director and faculty review 2015 recommendations regarding the issue of page length and take the scenario comparison results from the Assessment Workgroup into consideration when deploying final exams.
- 2. The Assessment Workgroup recommended that FYS exams be reconfigured to ask students to discuss additional information they might need to make a final recommendation <u>before</u> they make the recommendation. This would bring the exam format more into line with what students are asked to do at baseline.
- The Assessment Workgroup recommended that students in FYS be <u>explicitly</u> asked to <u>use</u> information they provided regarding *bias*, *relevance*, and *accuracy* in items 1 – 7 of the final exam when composing their final recommendation. The Workgroup further noted that students should be told that the main part of the exam is the final recommendation and that this should be carefully considered and composed.
- 4. Workgroup members reiterated that all scenarios should include a sample of the format in which the final recommendation should be written.

Recommendations regarding Baseline/FYS/Senior Rubric

1. The Assessment Workgroup recommended re-examining *Communication Style* trait of the rubric again next year before beginning assessments.

Supporting Documentation



Comparison of Freshman Baseline and Senior Exiting Assessment Results

Academic Year 2015 – 2016

Review Procedures

- A total of 327 assessments (235 freshman and 92 senior) were used for assessment. Freshman assessments represented approximately 15% of the 1,585 completed during the University's Week of Welcome in August 2015. Only 92 seniors completed the Marshall Developed Senior Assessment in spring 2015 (an additional 106 seniors completed the Collegiate Learning Assessment [CLA+]), so all 92 Marshall senior completers were included in this sample. The 198 seniors who completed either the CLA+ or Marshall's Senior assessment did not differ significantly from the senior population in terms of entering academic ability based on ACT or SAT performance. However, the sample had a significantly higher mean college GPA (3.4) than the senior population (3.1) and had a higher percentage of female students than that of the population.
 - Assessments were de-identified and raters did not know which were completed by freshmen and which by seniors.
 - Each assessment was scored across eight criteria.
- Each assessment had two independent raters and scores were determined in the following manner:
 - If raters assigned the same score, that became the score for the artifact.
 - If raters' scores differed by one point or less, e.g. Rater 1 assigned a score of 1 and Rater 2 a score of 2, the final score was the mean, i.e. 1.5.
 - If raters' scores differed by more than one point, e.g. Rater 1 assigned a score of 1 and Rater 2 a score of 3, the raters met to discuss the rationale for their scores to see if they could agree on a score or, at minimum, scores that differed by no more than one point.
 - If raters' scores differed by more than one point and, after discussion, they were not able to resolve the differences, a third rater was assigned to review the assessment.

Rules for Arriving at Final Scores when there were Three Raters: These rules were followed for all assessments conducted.

- 1. If the third rater's score agreed with one of the first two, the score with the two agreements was used.
- 2. If the first two raters' scores were two points apart, e.g. 1 and 3 and the third rater's score was in the middle, e.g. 2, the third rater's score was used.
- 3. If the first two raters' scores were two points apart, e.g. 1 and 3, and the third rater's score was between them, but a decimal, e.g. 1.5 or 2.5, the third rater's score was used.
- 4. If the first two raters' scores were two points apart, e.g. 1 and 3, and the third rater's score was a "4", the two scores closer together were averaged, e.g. 3.5.
- 5. IF the first two raters' scores were three points apart, e.g. 1 and 4, the third rater's score was averaged with the closest other rater; e.g. if the third rater's score was 3, the final score was 3.5; if the third rater's score was 2, the final score was 1.5.

Rubric Used for Scoring

Outcomes	Traits		Perform	ance Levels	
		1	2	3	4
Information Literacy	Information Needed	Does not acknowledge or assess the need for more information.	Acknowledges the need for more information but does not identify research methods/sources (or those identified are not feasible) that would address unanswered questions.	Assesses the need for more information and recommends general research methods/sources (that are feasible) that would address some unanswered questions.	Assesses the need for more information and recommends specific research methods/sources (that are feasible) that would address most unanswered questions.
	Source Acknowledgment	Fails to acknowledge sources from the DL.	Indirectly/vaguely acknowledges sources of information from the DL.	Clearly acknowledges relevant sources of information from the DL.	Integrates relevant information from the DL. Acknowledges sources used.
Inquiry-Based Thinking	Evidence	Disregards or misunderstands evidence from the DL.	Insufficient evidence is taken from sources in the DL or evidence is used without appropriate interpretation/evaluation (i.e. poor job).	Evidence is taken from relevant and valid sources in the DL with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis (i.e. adequate job).	Evidence is taken from relevant and valid sources in the DL with enough interpretation/evaluation to develop a coherent analysis or synthesis (i.e. good/excellent job).
	Viewpoints	Ignores viewpoints expressed in the DL.	Viewpoints expressed in the DL are taken as mostly fact, with little or no question.	Questions some viewpoints expressed in the DL.	Thoroughly questions and evaluates viewpoints expressed in the DL.
	Recommendation/Position	Either does not make a recommendation <u>o</u> r makes a recommendation, but does not justify it in any way.	Recommendation is justified, but does not acknowledge different sides of the issue.	Recommendation is justified and takes into account different sides/complexities of the issue.	Recommendation takes into account the complexities of the issue. Any limits to the recommendation are acknowledged.
Communication Fluency	Development	Shows little or no evidence of developing his/her ideas.	Shows some development of ideas.	Shows a strong, but perhaps somewhat incomplete, development of ideas.	Produces a document in which the ideas have been fully developed.
	Convention/Format	Demonstrates minimal attention to basic organization and presentation and stylistic conventions.	Demonstrates some awareness of basic organization, content, and presentation and stylistic conventions.	Demonstrates consistent use of important conventions particular to a specific writing task, including organization, content, presentation, and stylistic choices.	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific writing task including organization, content, presentation, formatting, and stylistic choices.
	Communication Style	Uses language that impedes meaning because of errors in usage/mechanics.	Uses language that generally conveys meaning to readers with clarity, although writing may include some errors.	Uses straightforward language that generally conveys meaning to readers. The language in the document has few errors.	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free.

Freshman Baseline/Senior Exiting Comparisons Mean Scores on a scale of 1 - 4, with 4 being the highest possible score Freshman n = 235; Senior n = 92

All mean differences statistically significant



Trait/ Performance Level	Info Needed	Acknowledgment of Sources	Evidence	Viewpoints	Recommendations
1 – 1.75 Freshmen	51 (22%)	93 (40%)	67 (29%)	61 (26%)	45 (19%)
1 – 1.75 Seniors	7 (8%)	14 (15%)	11 (12%)	10 (11%)	7 (8%)
2 – 2.75 Freshmen	136 (58%)	105 (45%)	120 (51%)	161 (69%)	151 (64%)
2 – 2.75 Seniors	43 (47%)	40 (43%)	41 (45%)	68 (74%)	39 (42%)
3 – 3.75 Freshmen	47 (20%)	33 (14%)	47 (20%)	13 (6%)	35 (15%)
3 – 3.75 Seniors	36 (39%)	28 (30%)	35 (38%)	14 (15%)	45 (49%)
4 Freshmen	1 (0%)	4 (2%)	1 (0%)	0 (0%)	4 (2%)
4 Seniors	6 (7%)	10 (11%)	5 (5%)	0 (0%)	1 (1%)
Grand Total Freshmen	235 (100%)	235 (100%)	235 (100%)	235 (100%)	235 (100%)
Grand Total Seniors	92 (100%)	92 (100%)	92 (100%)	92 (100%)	92 (100%)

Information Needed



Acknowledgment of Sources



Evidence



Viewpoints



Recommendations



Freshman Baseline/Senior Exiting Assessment Inter-Rater Agreement Results

Trait/ Agreement	Info Needed (Conservative Kappa = .333; Liberal Kappa = .915)	Acknowledgment of Sources (Conservative Kappa = .363; Liberal Kappa = .929)	Evidence (Conservative Kappa = .247; Liberal Kappa = .948)	Viewpoints (Conservative Kappa = .268; Liberal Kappa = .932)	Recommendations (Conservative Kappa = .164; Liberal Kappa = .896)
Agree	184 (56%)	184 (56%)	163 (50%)	208 (64%)	147 (45%)
Difference = 1 point or less	121 (37%)	124 (38%)	150 (46%)	104 (32%)	153 (47%)
Difference = 1.5 to 2 points	18 (6%)	18 (6%)	14 (4%)	15 (5%)	24 (7%)
Difference = 2.5 to 3 points	4 (1%)	1 (0%)	0 (0%)	0 (0%)	3 (1%)
Total	327 (100%)	327 (100%)	327 (100%)	327 (100%)	327 (100%)

Freshman Baseline/Senior Exiting Comparisons Mean Scores on a scale of 1 - 4, with 4 being the highest possible score Freshman n = 235; Senior n = 92

All mean differences statistically significant



Trait/ Performance Level	Development	Convention/Format	Communication Style
1 – 1.75 Freshmen	59 (25%)	136 (58%)	39 (17%)
1 – 1.75 Seniors	3 (3%)	22 (24%)	7 (8%)
2 – 2.75 Freshmen	144 (61%)	71 (30%)	139 (59%)
2 – 2.75 Seniors	39 (42%)	30 (33%)	29 (32%)
3 – 3.75 Freshmen	29 (12%)	27 (11%)	56 (24%)
3 – 3.75 Seniors	45 (49%)	32 (35%)	53 (58%)
4 Freshmen	3 (1%)	1 (0%)	1 (0%)
4 Seniors	5 (5%)	8 (9%)	3 (3%)
Grand Total Freshmen	235 (100%)	235 (100%)	235 (100%)
Grand Total Seniors	92 (100%)	92 (100%)	92 (100%)

Development



Convention/Format



Communication Style



Freshman Baseline/Senior Exiting Assessment Inter-Rater Agreement Results

Trait/ Agreement	Development (Conservative Kappa = .373; Liberal Kappa = .946)	Convention/Format (Conservative Kappa = .397; Liberal Kappa = .948)	Communication Style (Conservative Kappa = .187; Liberal Kappa = .894)
Agree	193 (59%)	189 (58%)	159 (49%)
Difference = 1 point or less	120 (37%)	124 (38%)	141 (43%)
Difference = 1.5 to 2 points	14 (4%)	14 (4%)	26 (8%)
Difference = 2.5 to 3 points	0 (0%)	0 (0%)	1 (0%)
Total	327 (100%)	327 (100%)	327 (100%)



Comparison of Freshman Baseline and First-Year Seminar (FYS) Assessments

Academic Year 2015 - 2016

Review Procedures

 One hundred eighty-eight (188) of the 235 freshmen who had completed baseline assessments during Week of Welcome completed similar assessments at the end of First Year Seminar (FYS). FYS assessments were evaluated across the same eight criteria (traits) used to score freshman baseline assessments. Scoring methodology also was the same.

Mean Scores on a scale of 1 - 4, with 4 being the highest possible score

n = 188

All mean differences statistically significant



n = 188

Trait/ Performance Level	Info Needed	Acknowledgment of Sources	Evidence	Viewpoints	Recommendations
1 – 1.75 Baseline	39 (21%)	74 (39%)	52 (28%)	46 (24%)	34 (18%)
1 – 1.75 FYS	25 (13%)	43 (23%)	33 (18%)	19 (10%)	38 (20%)
2 – 2.75 Baseline	115 (61%)	83 (44%)	98 (52%)	132 (70%)	124 (65%)
2 – 2.75 FYS	106 (56%)	54 (29%)	89 (47%)	124 (66%)	73 (39%)
3 – 3.75 Baseline	34 (18%)	29 (15%)	37 (20%)	10 (5%)	27 (14%)
3 – 3.75 FYS	52 (28%)	74 (39%)	61 (32%)	44 (23%)	77 (41%)
4 Baseline	0 (0%)	2 (1%)	1 (1%)	0 (0%)	3 (2%)
4 FYS	5 (3%)	17 (9%)	5 (3%)	1 (1%)	0 (0%)
Grand Total Baseline	188 (100%)	188 (100%)	188 (100%)	188 (100%)	188 (100%)
Grand Total FYS	188 (100%)	188 (100%)	188 (100%)	188 (100%)	188 (100%)

Information Needed

Acknowledgment of Sources

Evidence

Viewpoints

Recommendations

FYS Inter-Rater Agreement Results

Trait/ Agreement	Info Needed (Conservative Kappa = .309; Liberal Kappa = .941)	Acknowledgment of Sources (Conservative Kappa = .372; Liberal Kappa = .938)	Evidence (Conservative Kappa = .207; Liberal Kappa = .943)	Viewpoints (Conservative Kappa = .050; Liberal Kappa = .870)	Recommendations (Conservative Kappa = .309; Liberal Kappa = .940)
Agree	100 (53%)	100 (53%)	83 (44%)	75 (40%)	103 (55%)
Difference = 1 point or less	79 (42%)	78 (41%)	96 (51%)	95 (51%)	76 (40%)
Difference = 1.5 to 2 points	9 (5%)	10 (5%)	9 (5%)	18 (10%)	7 (4%)
Difference = 2.5 to 3 points	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (1%)
Total	188 (100%)	188 (100%)	188 (100%)	188 (100%)	188 (100%)

Mean Scores on a scale of 1 - 4, with 4 being the highest possible score n = 188 (Communication Style *ns*)

n = 188

Trait/ Performance Level	Development	Convention/Format	Communication Style
1 – 1.75 Baseline	43 (23%)	109 (58%)	30 (16%)
1 – 1.75 FYS	43 (23%)	72 (38%)	37 (20%)
2 – 2.75 Baseline	121 (64%)	57 (30%)	113 (60%)
2 – 2.75 FYS	89 (47%)	74 (39%)	88 (47%)
3 – 3.75 Baseline	21 (11%)	22 (12%)	44 (23%)
3 – 3.75 FYS	50 (27%)	39 (21%)	58 (31%)
4 Baseline	3 (2%)	0 (0%)	1 (1%)
4 FYS	6 (3%)	3 (2%)	5 (3%)
Grand Total Baseline	188 (100%)	188 (100%)	188 (100%)
Grand Total FYS	188 (100%)	188 (100%)	188 (100%)

Development

Convention/Format

Communication Style

FYS Inter-Rater Agreement Results

Trait/ Agreement	Development (Conservative Kappa = .293; Liberal Kappa = .981)	Convention/Format (Conservative Kappa = .143; Liberal Kappa = .852)	Communication Style (Conservative Kappa = .198; Liberal Kappa = .917)
Agree	97 (52%)	72 (38%)	85 (45%)
Difference = 1 point or less	88 (47%)	94 (50%)	90 (48%)
Difference = 1.5 to 2 points	3 (2%)	17 (9%)	13 (7%)
Difference = 2.5 to 3 points	0 (0%)	5 (3%)	0 (0%)
Total	188 (100%)	188 (100%)	188 (100%)

Comparison of FYS Results for Each Trait by Scenario

Academic Year 2015 - 2016

FYS Comparisons by Scenario for IL: Information Needed Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA did not reveal any statistically significant differences in means across the scenarios.

FYS Comparisons by Scenario for IL: Source Acknowledgment Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA revealed statistical significance; a Tukey Post-Hoc Analysis revealed that student performance on Social Media was significantly lower than their performance on Music Label.

FYS Comparisons by Scenario for IBT: Evidence Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA revealed statistical significance; a Tukey Post-Hoc Analysis revealed that student performance on Social Media was significantly lower than their performance on Music Label, Influenza, and Choosing a Job.

FYS Comparisons by Scenario for IBT: Viewpoints Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA did not reveal any statistically significant differences in means across the scenarios.

FYS Comparisons by Scenario for IBT: Recommendations Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA revealed statistical significance; a Tukey Post-Hoc Analysis revealed that student performance on Social Media was significantly lower than their performance on Choosing a Job.

FYS Comparisons by Scenario for CF: Development Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA revealed statistical significance; however, a Tukey Post-Hoc Analysis did not reveal any statistically significant difference between specific sets of scenarios.

FYS Comparisons by Scenario for CF: Convention Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA did not reveal any statistically significant differences in means across the scenarios.

FYS Comparisons by Scenario for CF: Style Mean Scores on a scale of 1 – 4, with 4 being the highest possible score

A One-Way ANOVA did not reveal any statistically significant differences in means across the scenarios.

