Developmental Achievement & Student Satisfaction Reports Spring 2019

Author: Joseph F. van Gaalen, Ph.D., Asst. VP, IR, Assessment & Effectiveness

Florida SouthWestern State College's assessment measures for the Developmental Accountability plan include a collection of achievement data to determine the efficacy of the developmental options and to inform course and program improvement. Additionally, FSW tracks satisfaction of current developmental courses through a survey administered at the end of each term. The data is in support of assessment measures for the Developmental Accountability plan to determine efficacy of developmental options and to inform course and program improvement. What follows is the assembly of achievement and student satisfaction reports for each of the developmental courses (ENC 0022, REA 0019, and MAT 0057).

The faculty for ENC 0022 *Writing for College Success* reviewed achievement to determine if there is any significant difference across developmental strategies (Compressed and Modularized).

The faculty for MAT 0057 *Mathematics for College Success* reviewed achievement to determine if there is any significant difference across developmental strategies (Modularized).

The faculty for REA 0019 *Reading for College Success* use a defined course outcome in AY 2016-2017 that students will read at a post-secondary level that correlates with college success by the completion of the Developmental Reading sequence. Faculty established 1) a goal of the mean score difference (pre-/post) test of the course mastery exam will improve significantly college wide, 2) a goal of the mean score difference (pre-/post) of the course mastery exam will improve significantly across developmental strategies (Compressed, Contextualized, and Modularized), and 3) that 80% of REA 0019 completers will pass the course mastery exam for reading and complete the course with a 'C' or better. Note that REA 0019 survey was not conducted as the survey is being revised.

- ❖ Section 1: ENC 0022 Common Course Assessment Report (includes ENC 1101 & LIT 2000)
- ❖ Section 2: ENC 0022 Final Exam Assessment Report
- ❖ Section 3: ENC 0022 Survey Results Report
- ❖ Section 4: MAT 0057 Final Exam Assessment Report
- ❖ Section 5: MAT 0057 Survey Results Report
- ❖ Section 6: REA 0019 Final Exam Assessment Report

Section 1

English Assessment Report
Spring 2019
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1 INTRODUCTION

Fall 2014 marked the beginning of a new assessment plan for the English Department of Florida SouthWestern State College (FSW) in three courses: ENC 0022 *Writing for College Success*, ENC 1101 *Composition I*, and ENC 1102 *Composition II*. In fall 2017, ENC 1102 would be replaced by LIT 2000 *Introduction to Literature (I)*. The planned assessment practice continues in fall 2018 with a few modifications. ENC 1102 now includes an exit survey. Instructors use a common rubric with seven identified rubric dimensions in the case of ENC 0022. In ENC 1101 and LIT 2000, two dimensions have been identified for study. The assessment plan uses a random sample of 40% of all course sections offered in ENC 1101 and LIT 2000. In the case of ENC 0022, because it is a course being assessed by assessment plans in addition to the English Department (Developmental Accountability Plan) all course sections for ENC 0022 are assessed.

The standard assessment plan highlighted above is designed to evaluate each course and inform faculty on Student Learning Objectives (SLOs) for future assessment plans. Additionally, the plan provides information on achievement levels of Dual Enrollment artifacts compared with non-dual enrollment, as well as online artifacts compared with traditional artifacts. Other analyses such as comparison by term length (standard vs. mini-term) and longitudinal studies are included.

For additional detail or further analysis not provided in this report, please contact Dr. Joseph F. van Gaalen, Asst. VP, IR, Assessment & Effectiveness, Academic Affairs (jfvangaalen@fsw.edu; x16965).

2 ENC 0022

2.1 LEARNING OBJECTIVES & DESCRIPTIVE STATISTICS
Using common rubric criterion as an assessment method, the FSW English faculty defined multiple areas of interest for evaluation based on core outcomes for the course. Those outcomes include:

➢ Plan and write paragraphs and essays reflecting styles and tones appropriate for their audience and use adequate support, coherence, and unity that demonstrate understanding of content for expository and persuasive purposes.
➢ Establish a substantive claim, link claims to relevant evidence, and acknowledge competing arguments, gather information needed, and accurately incorporate source material into their own writing to avoid plagiarism.
➢ Identify and correctly use proper conventions for sentence grammar and avoid illogical shifts in pronouns and verbs in their own writing and on tests.
➢ Identify and use proper conventions for spelling, capitalization, and punctuation in their own writing and on tests.

> ➢ Identify and correctly use the conventions of a variety of sentence structures and will be able to avoid sentence fragments, comma splices, and fused sentences in their own writing and on tests.
> ➢ Identify and write effective topic sentences and thesis statements that address task and audience and use logical structure, support, and transitional devices for expository and persuasive purposes.

2.1.1 Learning Objectives

ENC 0022 is scored using a rubric with seven dimensions: Introductory Paragraph, Support Paragraphs, Organization, Concluding Paragraph, Grammar, Mechanics, and Research. Each dimension is scored on a scale of 1 to 4 (1-Unacceptable, 2-Needs work, 3-Average, 4-Above average), with 0s if the baseline of 'Unacceptable' is not met. The English department has identified a target statistic for measurement purposes (SLO1) of measuring the percentage of artifacts scoring a 2 or greater.

For the spring 2019 assessment, 71 artifacts were collected for ENC 0022 from 5 of 7 course sections. The lowest scoring rubric dimension for percentage of artifacts scoring a 2 or greater is Research at 92%. All other dimensions exhibit percentage of 96% or higher (Table 1). For a visual comparison of scores by dimension, see Figure 1.

Rubric Score	Introductory Paragraph	Support Paragraphs	Organization	Concluding Paragraph	Grammar	Mechanics	Research
Developing or higher	99%	100%	100%	96%	97%	97%	92%
4	30%	34%	25%	25%	24%	20%	21%
3	39%	39%	38%	35%	45%	49%	28%
2	30%	27%	37%	35%	28%	28%	42%
1	1%	0%	0%	4%	3%	3%	8%
0	0%	0%	0%	0%	0%	0%	0%

Table 1. Achievement by rubric dimension (includes percentage of students scoring in developmental level or higher as per SLO.
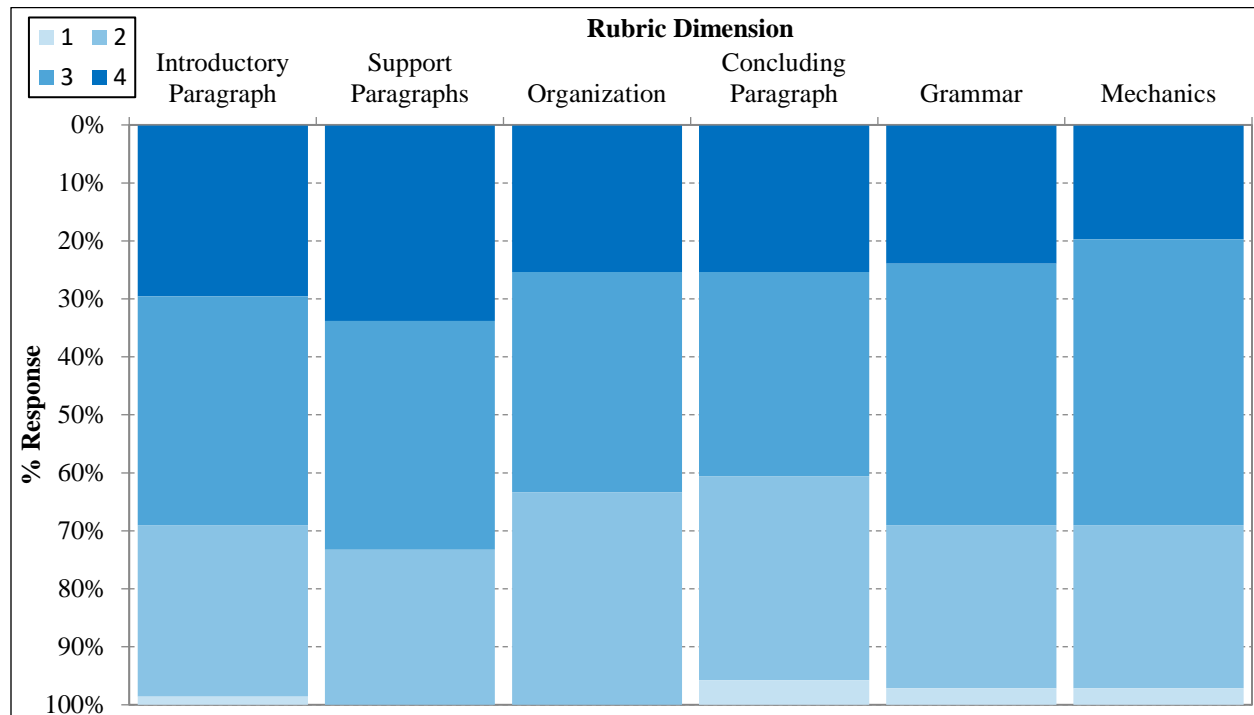

Figure 1. ENC 0022 distribution of rubric scores by dimension.

2.1.2 Descriptive Statistics & Longitudinal Studies

Descriptive statistics for ENC 0022 artifacts can be found in Table 2. A histogram of artifact scores for all 71 artifacts is shown in Figure 2. Distribution of artifact scores is bimodally centered on 14/28 and 21/28, and is slightly positively skewed, meaning scores are shifted very slightly towards the lower range. 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 3). To create this image the rubric scores (4, 3, 2, 1, or 0) for each artifact was grouped based on combined raw rubric score (7 dimensions x maximum rubric level of 4 = 28 overall points). The color represents the mean rubric score achieved in each dimension based on the combined score as shown in the x-axis.

	Introductory Paragraph	Support Paragraphs	Organization	Concluding Paragraph	Grammar	Mechanics	Research	TOTAL
n	71	71	71	71	71	71	71	**71**
Max	4	4	4	4	4	4	4	**28**
Min	1	2	2	1	1	1	1	**11**
Median	3	3	3	3	3	3	2	**20**
Mode	3	3	3	3	3	3	2	**14**
Mean	3.0	3.1	2.9	2.8	2.9	2.9	2.6	**20.1**
Standard deviation	0.81	0.78	0.78	0.87	0.80	0.76	0.92	**4.99**
Skewness	-0.11	-0.12	0.20	-0.04	-0.17	-0.15	0.15	**0.04**
Kurtosis	-1.06	-1.34	-1.34	-0.95	-0.64	-0.42	-0.91	**-1.23**

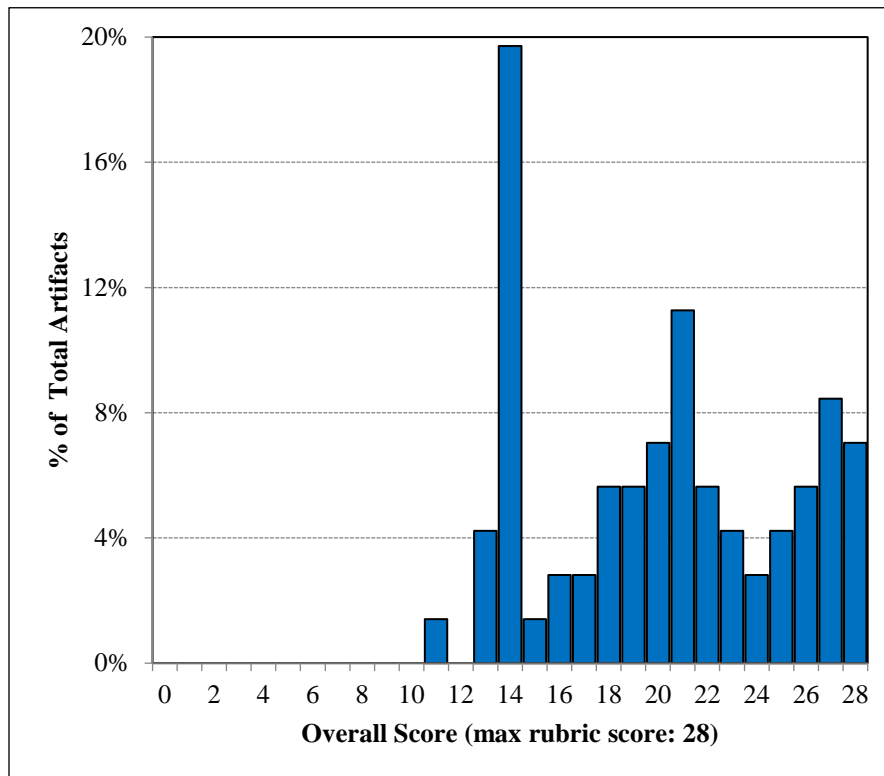*Table 2. Descriptive statistics for ENC 0022 common course assessment.*

Figure 2. Overall score distribution for ENC 0022 artifacts.

	Introductory Paragraph	Support Paragraphs	Organization	Concluding Paragraph	Grammar	Mechanics	Research
28	4.0	4.0	4.0	4.0	4.0	4.0	4.0
27	3.8	4.0	4.0	3.8	4.0	4.0	3.3
26	4.0	3.5	4.0	3.8	3.8	3.3	3.8
25	3.7	4.0	3.7	4.0	3.3	3.0	3.3
24	3.0	4.0	3.5	3.0	3.0	3.5	4.0
23	3.7	4.0	3.0	3.3	3.0	3.0	3.0
22	3.3	3.3	2.8	3.0	3.3	3.3	3.3
21	2.9	3.1	3.0	3.0	3.1	3.0	2.9
20	3.0	3.0	3.0	3.0	3.0	3.0	2.0
19	2.8	3.3	2.5	2.3	3.0	3.0	2.3
18	3.3	2.8	2.5	2.5	2.5	2.5	2.0
17	3.0	3.0	2.5	2.5	2.0	2.0	2.0
16	3.0	3.0	2.0	2.0	1.5	2.0	2.5
15	2.0	3.0	3.0	2.0	2.0	2.0	1.0
14	1.9	2.0	2.0	1.8	2.2	2.1	1.9
≤ 13	2.0	2.0	2.0	2.0	1.8	1.8	1.0

1	2	3	4

Figure 3. Colormap of mean scores for each rubric dimension (range: 0-4) based on overall rubric score (combined rubric score of all dimensions, max=28) for ENC 0022. A rubric dimension with hotter colors (reds) means that dimension achievement exceeds the overall score and is an area of strength. An exam section with colder colors (blues) means that section achievement is lower than the overall score and is therefore an area of weakness.

A review of the colormap in Figure 3 above shows that "Introductory Paragraph" and "Support Paragraphs" exhibit the stronger scores at moderate-to-high achieving students. For example, at 23/28, the former dimensions range from 3.7/4.0 to 4.0/4.0. By comparison, the other dimensions range from 3.0/4.0 to 3.3/4.0.   From a student performance perspective, strong students are strongest in "Introductory Paragraph" and "Support Paragraphs."

A comparison of results over time is shown in Figure 4 below. Results exhibit two main trends. First, the "Support Paragraphs" dimension exhibits the highest mean score among all dimensions in 4 of 10 terms in the study. The remaining 6/10 are shared by "Introductory Paragraph" and "Organization." Second, the "Research" dimension exhibits the lowest mean score in 6 of 10 terms in the study. Perhaps more interestingly, all six of those which are the lowest occurred in the most recent seven terms. This fact helps to characterize the slight, if erratic, drop in mean scores exhibited by the "Research" dimension over time (2.8/4.0 in fall 2014 down to 2.6/4.0 in spring 2019) juxtaposed with the slight but erratic increase made by "Mechanics" over time from 2.5/4.0 in fall 2014 to 2.8/4.0 in spring 2019.
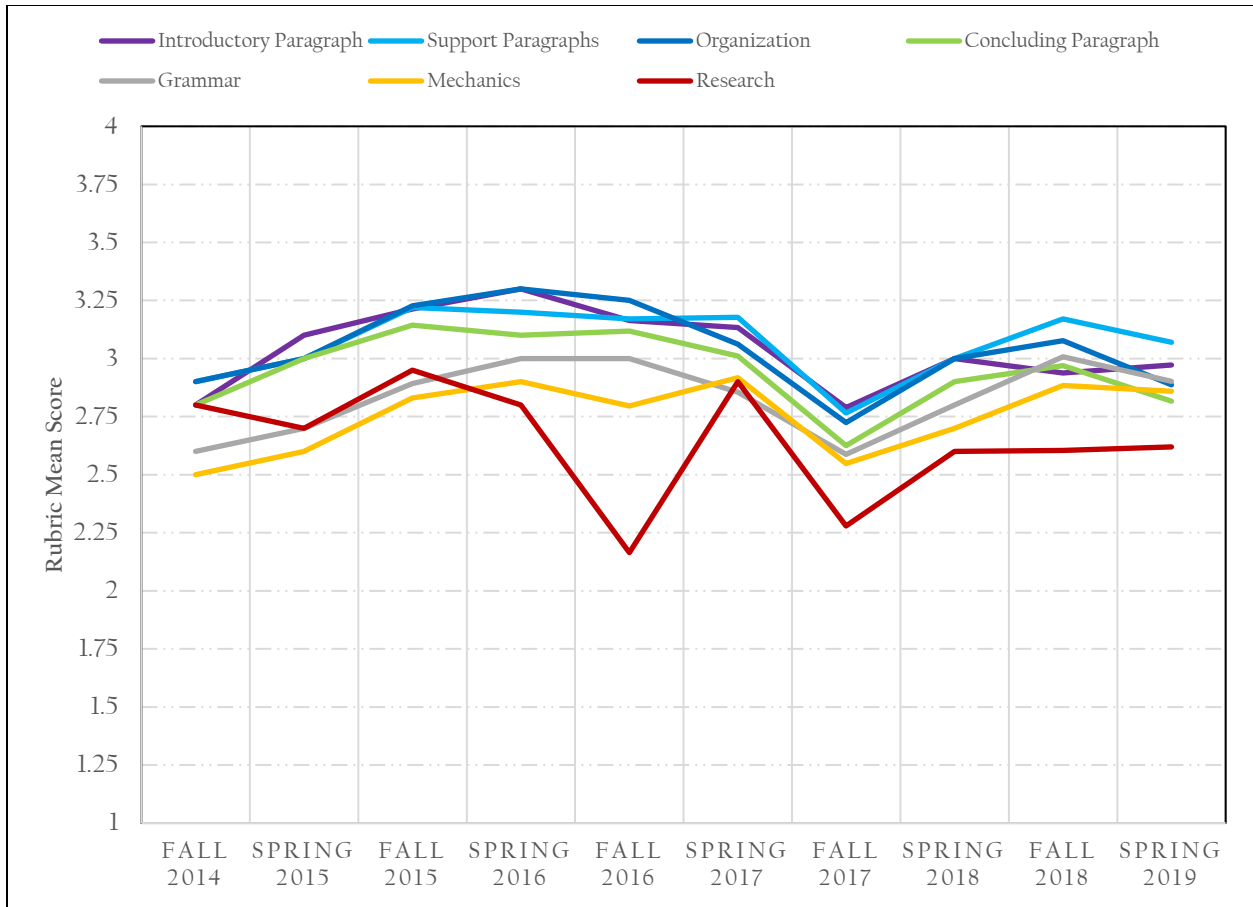
Figure 4. Comparison of mean scores for ENC 0022 through time.

2.2 COMPARISONS BY SITE, FORMAT, AND STUDENT TYPE

2.2.1 Dual Enrollment to non-Dual Enrollment Comparison

ENC 0022 is not offered as a dual enrollment (offsite) course nor is it offered to dual enrollment students onsite and so no comparison study between dual enrollment artifacts and traditional artifacts can be made.

2.2.2 Online to Traditional Comparison

ENC 0022 is not offered as an online course and so no comparison study between online artifacts and traditional artifacts can be made.

2.2.3 Comparison by Site/Campus

Of the 71 artifacts collected from ENC 0022, 0 originated from the Collier campus, 5 from the Hendry Glades Center, and 66 from the Thomas Edison (Lee) campus. Scores by rubric dimension varied greatly across campuses although sample size at Hendry Glades is limited (n=5). A comparison of mean scores by rubric dimension is provided in Table 3.

	Introductory Paragraph	Support Paragraphs	Organization	Concluding Paragraph	Grammar	Mechanics	Research
Collier	~	~	~	~	~	~	~
Hendry Glades	**3.4**	**3.6**	**3.4**	**3.4**	**3.2**	**3.2**	**3.4**
Thomas Edison	2.9	3.0	2.8	2.8	2.9	2.8	2.6

Table 3. Comparison of mean scores by site for ENC 0022. Bold denotes highest mean score in that dimension among all sites.

3 ENC 1101

Course assessment for ENC 1101 follows a procedure of data collection in fall term only followed by departmental discussions in spring.

4 ENC 1102

Beginning with the Spring 2019 term, the English Department developed an exit survey to study student perspectives upon completion of the ENC 1102 course. The questions posed in the survey are listed below and results of the survey are shown in Figure 5. Each survey response includes options of "Strongly Agree," "Agree," "Neither agree nor disagree," "Disagree," and "Strongly disagree."

- ❖ Q1 - I think my ENC 1101 class (Composition I) prepared me well for ENC 1102.
- ❖ Q2 - I feel prepared to apply my knowledge of writing and research to other academic and non-academic situations in the future.
- ❖ Q3 - What I learned in ENC 1101 and 1102 will help me to write successfully in my major and in my profession.
- ❖ Q4 - I am comfortable conducting and documenting primary and secondary research.
- ❖ Q5 - After taking ENC 1101 and 1102, I am more comfortable with reading, writing, and researching in the media of the 21st century (digital, web-based, etc.).
- ❖ Q6 - I think the feedback I received on my written assignments was comprehensive and constructive. In other words, the feedback enabled me to take my writing skills to the next level.
- ❖ Q7 - I am comfortable reading and writing about, as well as discussing in class, complex and difficult issues, even if I disagree strongly with others.
- ❖ Q8 - I can encounter a view by someone with whom I disagree, but still take seriously and try to understand their perspective.
- ❖ Q9 - I understand how I can apply skills in argumentation and rhetoric to my other academic courses, in the workplace, and in my personal life.
- ❖ Q10 - I feel comfortable defining my position (argument/perspective) and supporting it in writing.
- ❖ Q11 - I understand how research, writing, and argumentation are necessary for problem-solving in college, the workplace, and the world.
- ❖ Q12 - Diversity of values and empathy with others are important for my success as a reader, writer, and researcher.
- ❖ Q13 - I am comfortable acknowledging different approaches or theories, and even changing my own mind when learning new information.

All questions exhibit positive responses ("Strongly agree" or "Agree") of 75% or higher. Question 8, "I can encounter a view by someone with whom I disagree, but still take seriously and try to understand their perspective.", exhibits the highest positive response rate at 96%. Question 1, "I think my ENC 1101 class (Composition I) prepared me well for ENC 1102.", exhibits the lowest positive response rate at 78%.
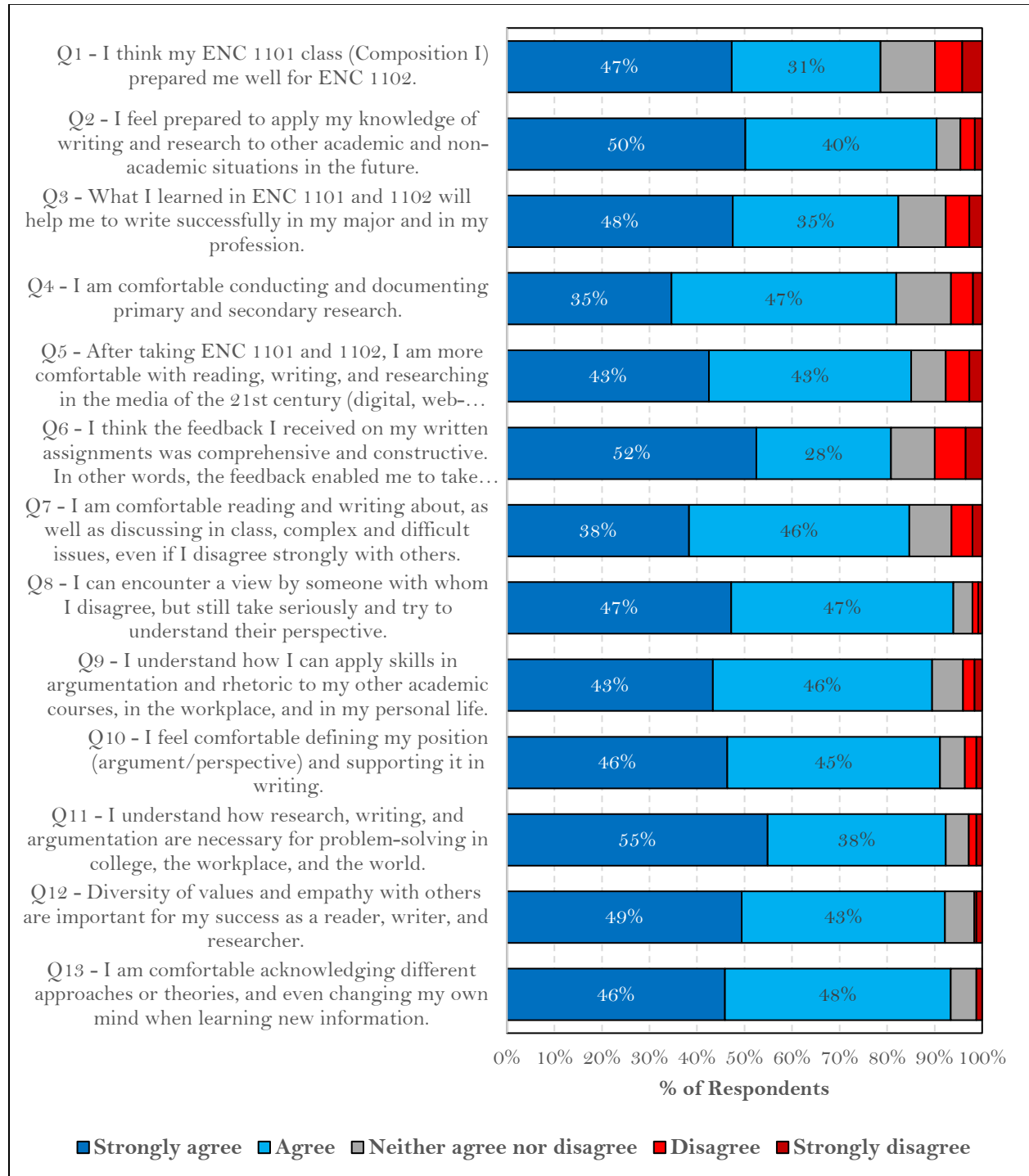

Figure 5. Results of ENC 1102 Exit Survey.

5 LIT 2000

Course assessment for LIT 2000 follows a procedure of data collection in fall term only followed by departmental discussions in spring.

6 CONCLUSIONS

FSW's English Department assessment plan includes three courses: ENC 0022 *Writing for College Success*, ENC 1101 *Composition I*, and LIT 2000 *Introduction to Literature*. Instructors use a common rubric with seven identified rubric dimensions in the case of ENC 0022, an updated rubric in response to the AY 2016-2017 assessment results with two dimensions for ENC 1101, and a two-dimension rubric for an initial study of LIT 2000. The assessment plan uses a random sample of 30% of all course sections offered in ENC 1101 and LIT 2000 and a 100% collection of ENC 0022 courses. The department has historically used a benchmark of percentage of students scoring 2 or higher in rubric dimensions as a means to measure achievement in the courses. ENC 1102 now includes an exit survey.

A drilldown of ENC 0022 results are as follows:
1. For the spring 2019 assessment, 71 artifacts were collected for ENC 0022 from 5 of 7 course sections. The lowest scoring rubric dimension for percentage of artifacts scoring a 2 or greater is Research at 92%. All other dimensions exhibit percentage of 96% or higher.
2. Distribution of artifact scores is bimodally centered on 14/28 and 21/28, and is slightly positively skewed, meaning scores are shifted very slightly towards the lower range.
3. In a study comparing rubric achievement based on overall score, "Introductory Paragraph" and "Support Paragraphs" exhibit the stronger scores at moderate-to-high achieving students. For example, at 23/28, the former dimensions range from 3.7/4.0 to 4.0/4.0. By comparison, the other dimensions range from 3.0/4.0 to 3.3/4.0. From a student performance perspective, strong students are strongest in "Introductory Paragraph" and "Support Paragraphs."
4. In a longitudinal study, results exhibit two main trends. First, the "Support Paragraphs" dimension exhibits the highest mean score among all dimensions in 4 of 10 terms in the study. The remaining 6/10 are shared by "Introductory Paragraph" and "Organization." Second, the "Research" dimension exhibits the lowest mean score in 6 of 10 terms in the study. Perhaps more interestingly, all six of those which are the lowest occurred in the most recent seven terms. This fact helps to characterize the slight, if erratic, drop in mean scores exhibited by the "Research" dimension over time (2.8/4.0 in fall 2014 down to 2.6/4.0 in spring 2019) juxtaposed with the slight but erratic increase made by "Mechanics" over time from 2.5/4.0 in fall 2014 to 2.8/4.0 in spring 2019.
5. No comparison of dual enrollment to traditional artifacts was completed because no dual enrollment sections of the course were offered.
6. No comparison of online to traditional artifacts was completed because no online sections of the course were offered.
7. In a cross-campus comparison, scores varied greatly across rubric dimensions although sample size at Hendry Glades is limited (n=5).

A drilldown of ENC 1101 results are as follows:
1. Course assessment for ENC 1101 follows a procedure of data collection in fall term only followed by departmental discussions in spring.

A drilldown of ENC 1102 results are as follows:
1. All questions exhibit positive responses ("Strongly agree" or "Agree") of 75% or higher.
2. Question 8, "I can encounter a view by someone with whom I disagree, but still take seriously and try to understand their perspective.", exhibits the highest positive response rate at 96%.
3. Question 1, "I think my ENC 1101 class (Composition I) prepared me well for ENC 1102.", exhibits the lowest positive response rate at 78%.

A drilldown of LIT 2000 results are as follows:
1. Course assessment for LIT 2000 follows a procedure of data collection in fall term only followed by departmental discussions in spring.

7 REFERENCES

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Section 2

ENC 0022 Final Exam Assessment Report – Spring 2019
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Florida SouthWestern State College's assessment plan includes collection of achievement data to determine the efficacy of the developmental options and to inform course and program improvement. The FSW English Department uses a two-section final exam (written and objective) to test mastery of the subject in ENC 0022 *Writing for College Success*. The following report details the results for the final exam for ENC 0022 for the spring 2019 term.

The written section of the ENC 0022 final exam, worth 50% of the overall exam grade, is comprised of six rubric dimensions. They are Main Idea / Topic Sentence, Organization, Detail Sentences, Grammar, Mechanics / Spelling, and Concluding Sentence. Each is scored on a 4-point rubric (4-Above Average, 3-Average, 2-Needs Work, 1-Unacceptable). Artifacts from 78 students were reported for spring 2019 with 5 of 7 sections reporting written sections and 4 of 7 reporting objective sections. The mean scores and percentage of artifacts scoring a 3 or better for each rubric dimension are shown in Figures 1 and 2.
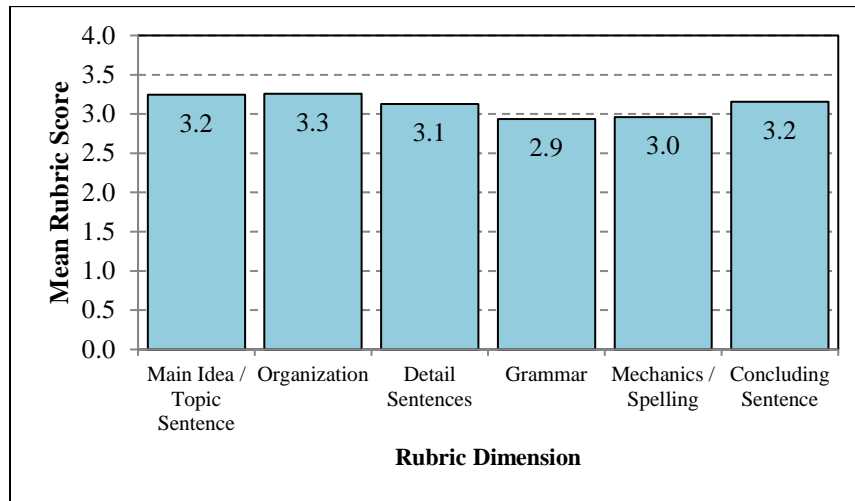
Figure 1. ENC 0022 Final Exam written section mean rubric scores for spring 2019.
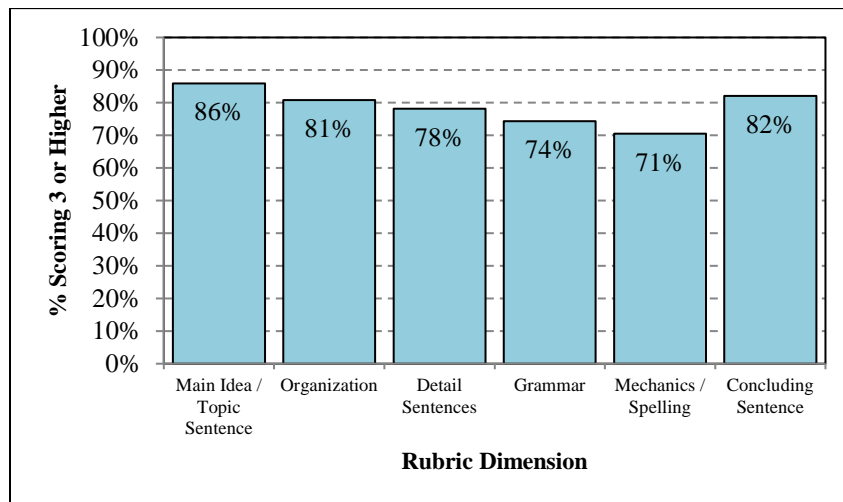
Figure 2. Percentage of spring 2019 artifacts scored 3 or higher on written section of ENC 0022 final exam.

While 78 artifacts were reported for the written section of the exam, only 60 common artifacts were reported for the objective section. The mean scores for each are reported in Figure 3. Differences in the means between written section and the objective section were tested for significance using a Welch's t-test according to standard methods[1,2,3,4] and were found to be statistically significantly different ($t(138) = -3.92$, $p = 0.0001$). Therefore, we can reject the null hypothesis that the difference in the means of the written and objective sections of the exam is equal to 0, and we can conclude with 95% confidence that the differences in scores are not solely due to chance.
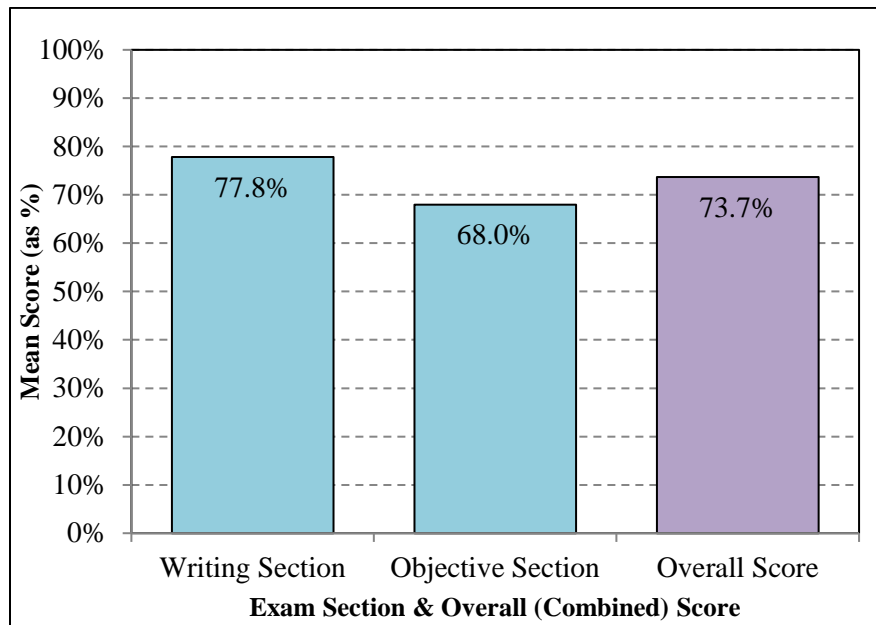
Figure 3. Mean scores by exam section and overall score for the spring 2019 ENC 0022 final exam.

Of the 60 common (objective & written) artifacts collected from the final exam, all originated from the compressed learning strategy version of the course. Normally, a comparison of mean scores by learning strategy is shown. Because no modularized data is available, no comparison is completed.

A longitudinal study exhibits a varied level of achievement overall. Of 10 fall/spring terms tracked, spring 2019 exhibits the 7th highest overall mean score. Spring 2019 is the 2nd highest of the last five terms in the study.

No data reported for 'Blended' in Spring '18 or Spring '19
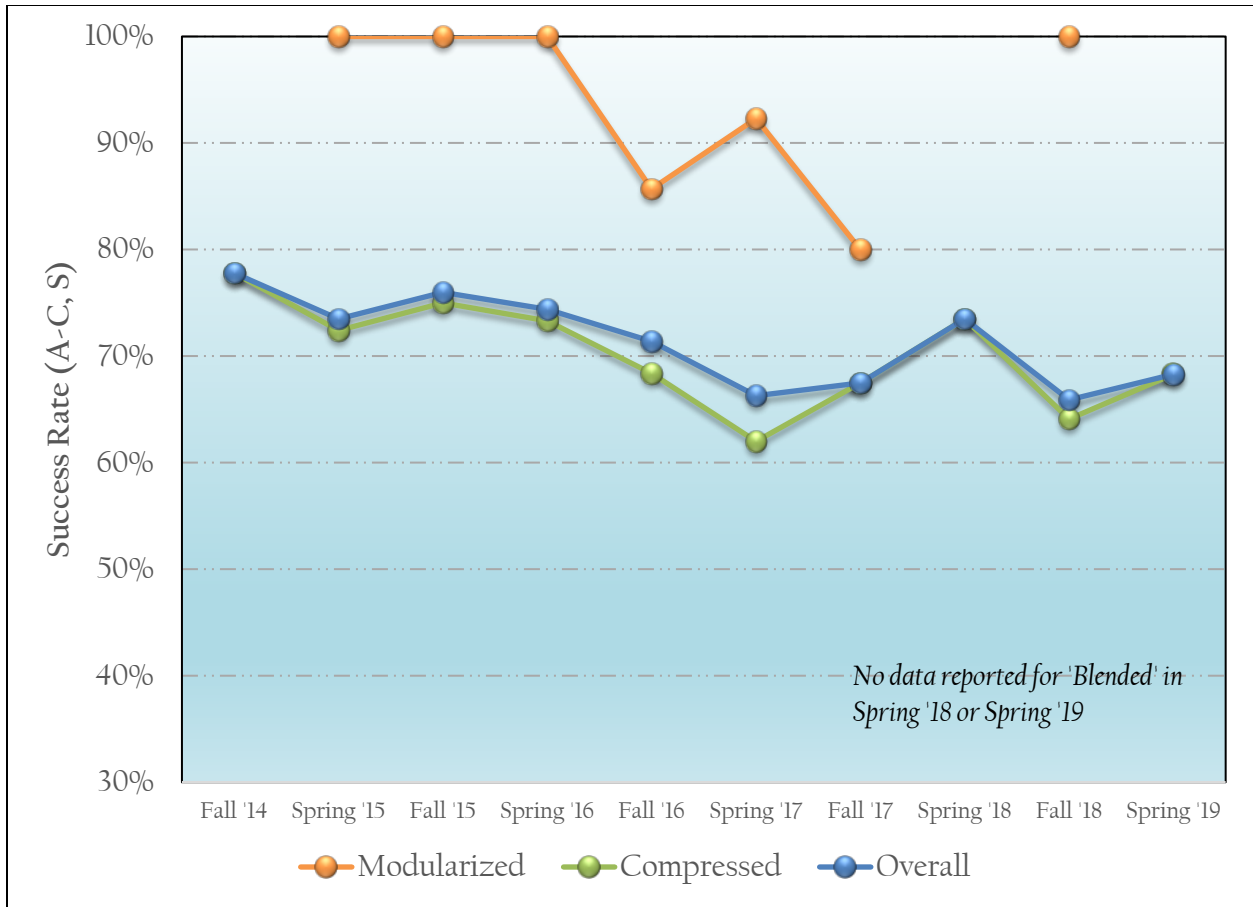
Figure 4. Comparison of ENC 0022 final exam success rates over time. Success rate is achievement at 70% or higher.

[1]Davis, J.C. 1973. Statistics and Data Analysis in Geology. John Wiley & Sons, New York, New York, 564 pp.

[2]McDonald, J.H. 2009. Handbook of Biological Statistics (2nd ed.). Sparky House Publishing, Baltimore, Maryland.

[3]Siegel, S. 1956. Nonparametric statistics for the behavior sciences. McGraw-Hill, New York, New York, 312 pp.

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

Section 3

Florida SouthWestern State College tracks satisfaction of current developmental courses through a survey administered at the end of each term. The data is in support of assessment measures for the developmental accountability plan to determine efficacy of developmental options and to inform course and program improvement. The following are the results for the spring 2019 term for ENC 0022 *Writing for College Success* which utilized a re-developed survey based on prior results and new developments within the program which merit satisfaction tracking.

Of the 126 students enrolled in ENC 0022 during spring 2019, 17 responded to the survey for a response rate of 14%, compared with 10% in spring 2018, 9% in fall 2017, 11% in spring 2017, and 14% in both fall 2016 and spring 2016. Of the 17 respondents, 82% reported being enrolled in sections that met twice per week while 18% reported once per week. Of those responding, 65% reported being female, 59% reported being between the age of 18 and 21, and 88% reported AY 2018-19 as their first year in college. When asked how many hours they spent studying for the course, 53% reported at least two hours (Figure 1).
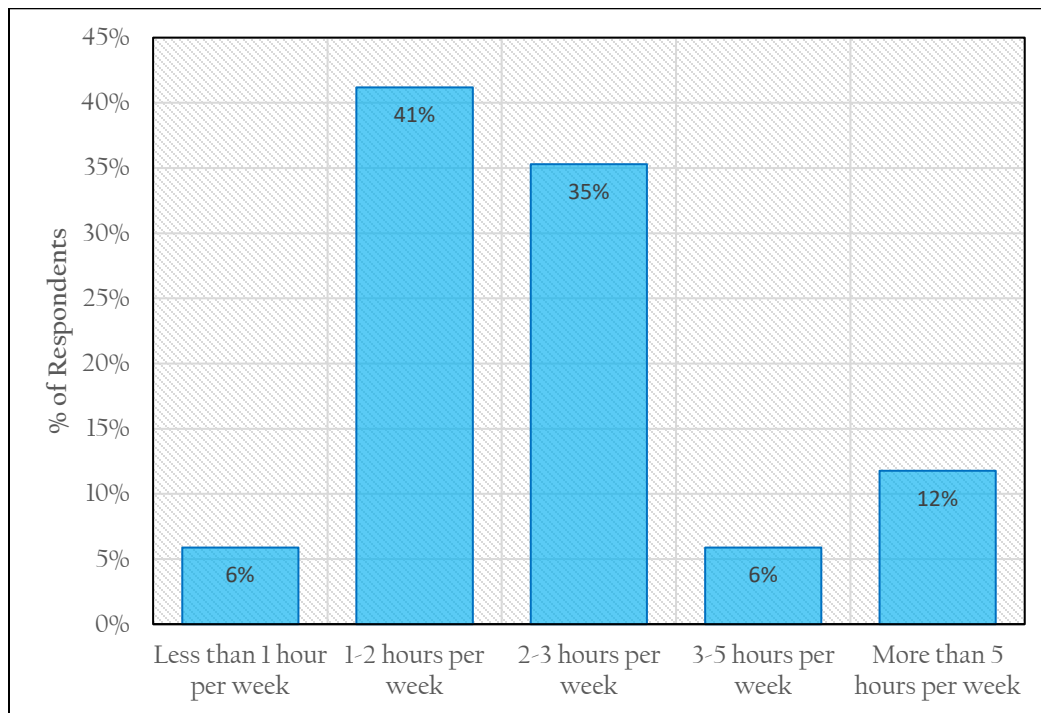
Figure 1. Responses to the question "How many hours did you spend studying (reading, completing assignments, preparing for quizzes, etc.) for this course?" n=17.

Questions 8 through 11 are Likert scale questions describing student perception of learning and achievement in various areas. The below are the prompts for Question #8 followed by the results in Figure 2.

Q8: I believe I have improved in the following areas since taking this English class.
1. English Grammar
2. Punctuation
3. Sentence skills
4. Essay writing
5. Vocabulary
6. Spelling
7. Word choice
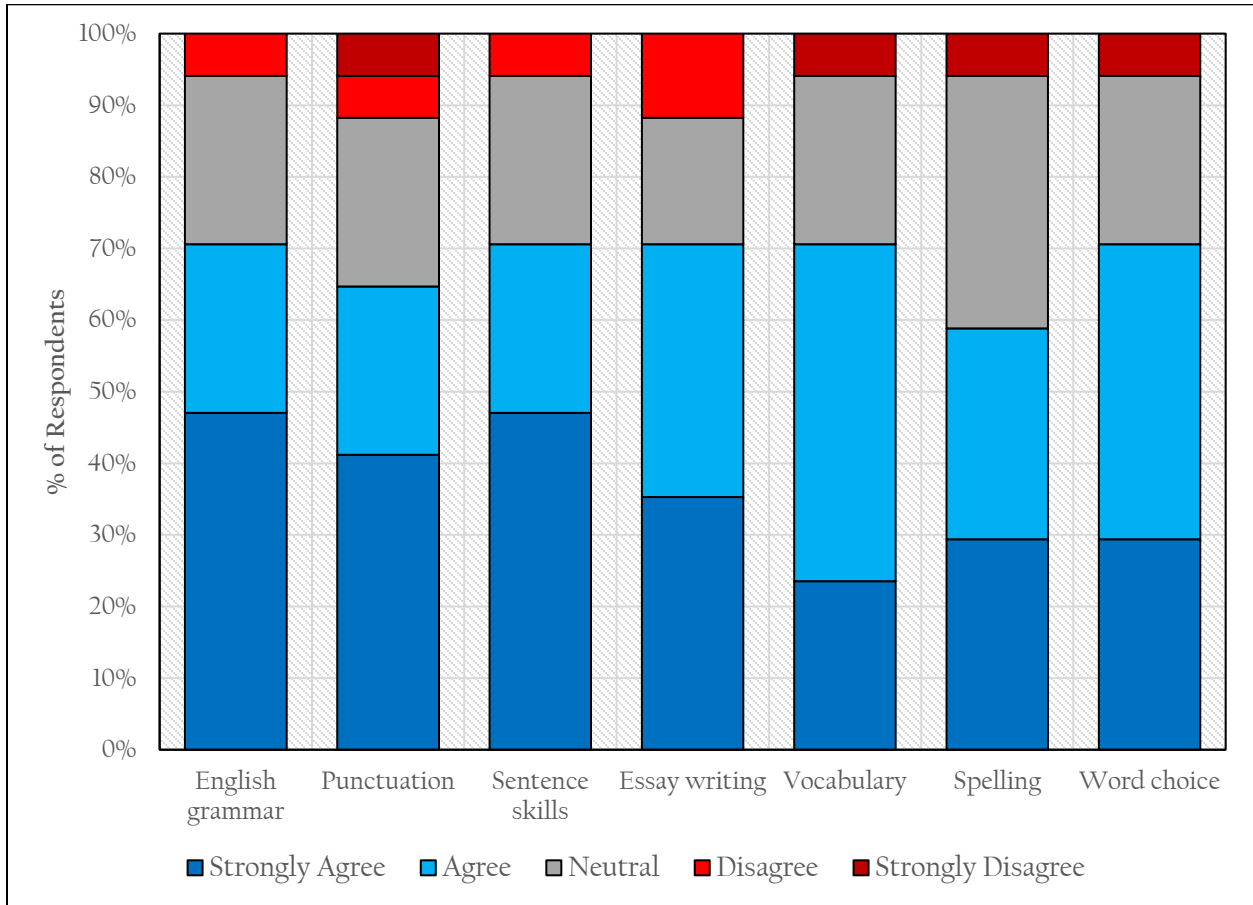
Figure 2. Responses to Question #8 " I believe I have improved in the following areas since taking this English class." n=17.

All seven areas exhibit positive responses (Agree or Strongly Agree) of 55% or higher. The areas of English grammar, Sentence Skills, Essay writing, Vocabulary, and Word choice all exhibit the highest positive response at 71%. Both Punctuation and Essay writing exhibit the highest negative response at 12%.

The below are prompts for Question #9 followed by the results in Figure 3.

Q9: I benefited from the following aspects of the Academic Support Writing Center this semester.
* 1. The resources available in the Writing Center*
* 2. The instructional assistants*
* 3. The access to computers*
* 4. The programs on the computers*
* 5. The hours the Writing Center was open and available to me*
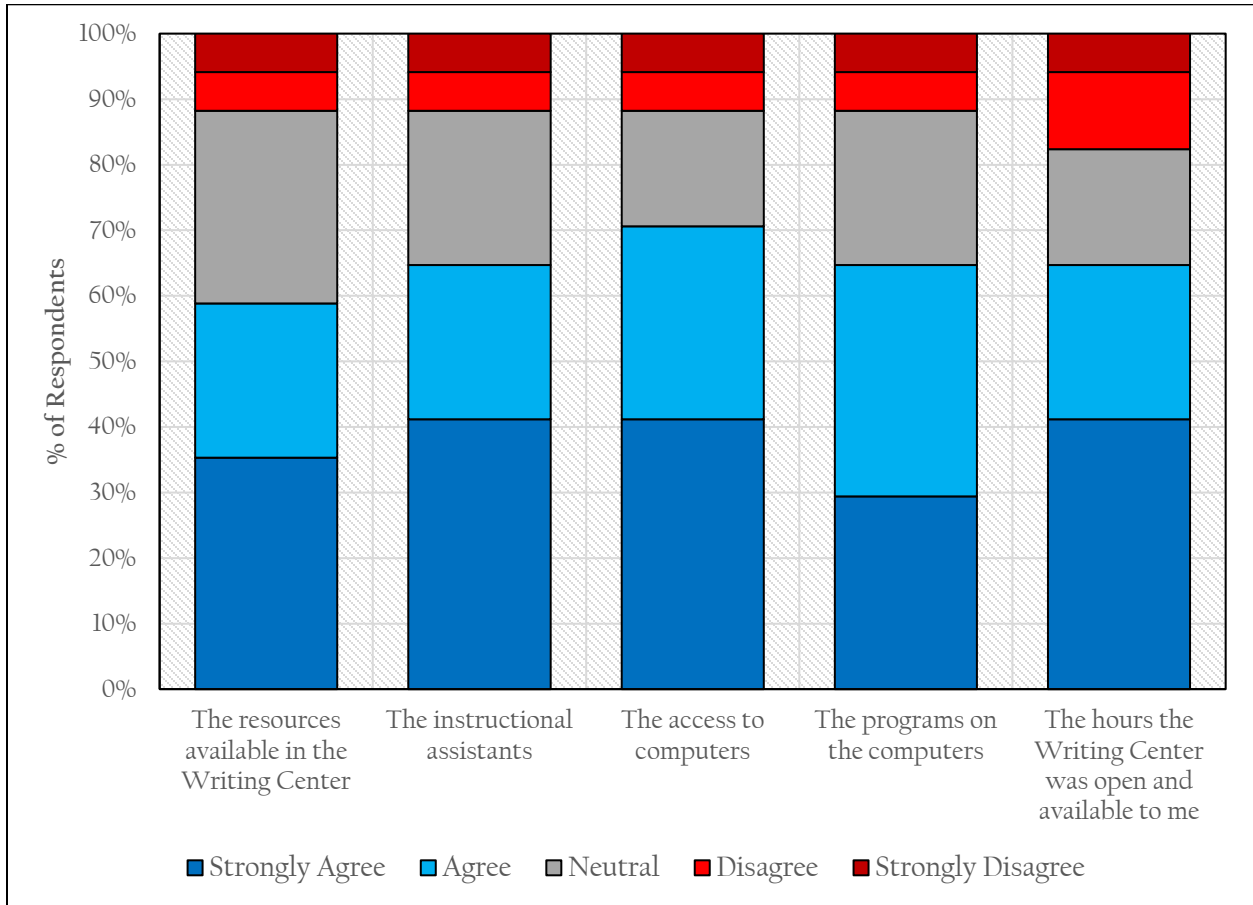
Figure 3. Responses to Question #9 "I benefited from the following aspects of the Academic Support Writing Center this semester." n=17.

All five areas exhibit positive responses (Agree or Strongly Agree) of 55% or better. The prompt on computer access exhibits the highest positive (Strongly Agree or Agree) response rate at 70%. The largest negative response rate (Disagree or Strongly Disagree) is the area on writing center hours at 18%.

The below are the prompts for Question #10 followed by the results in Figure 4.

Q10: I was satisfied with the following aspects of my English class this semester.
1. The information on the course syllabus
2. The content of the course textbook
3. The amount of homework assigned
4. The number of tests
5. The number of written assignments
6. The length of time in class
7. The frequency of class meetings
8. The pace of the course
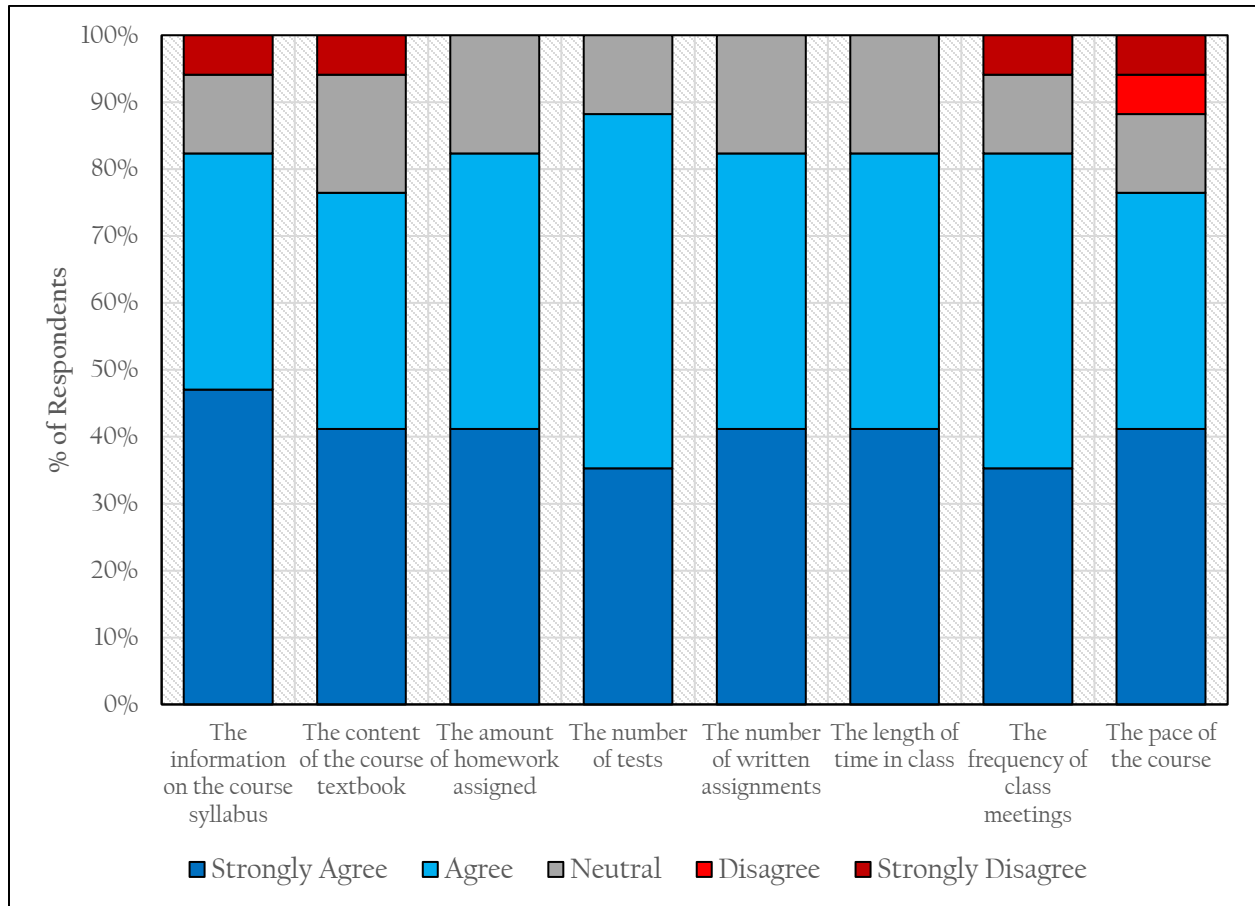
Figure 4. Responses to Question #10 "I was satisfied with the following aspects of my English class this semester." n=17.

All areas exhibit positive responses (Agree or Strongly Agree) of 75% or better. The prompt regarding the number of tests exhibits a highest positive response rate at 88%. The prompt regarding the pace of the course exhibits the highest negative response rates at 12%.

The below are the prompts for Question #11 followed by the results in Figure 5.

Q11: This English course prepared me for:
    1. The writing I will do in college
    2. The expectations of college courses
    3. The time management I need in college
    4. The test-taking skills I need in college
    5. The use of technology in college classes
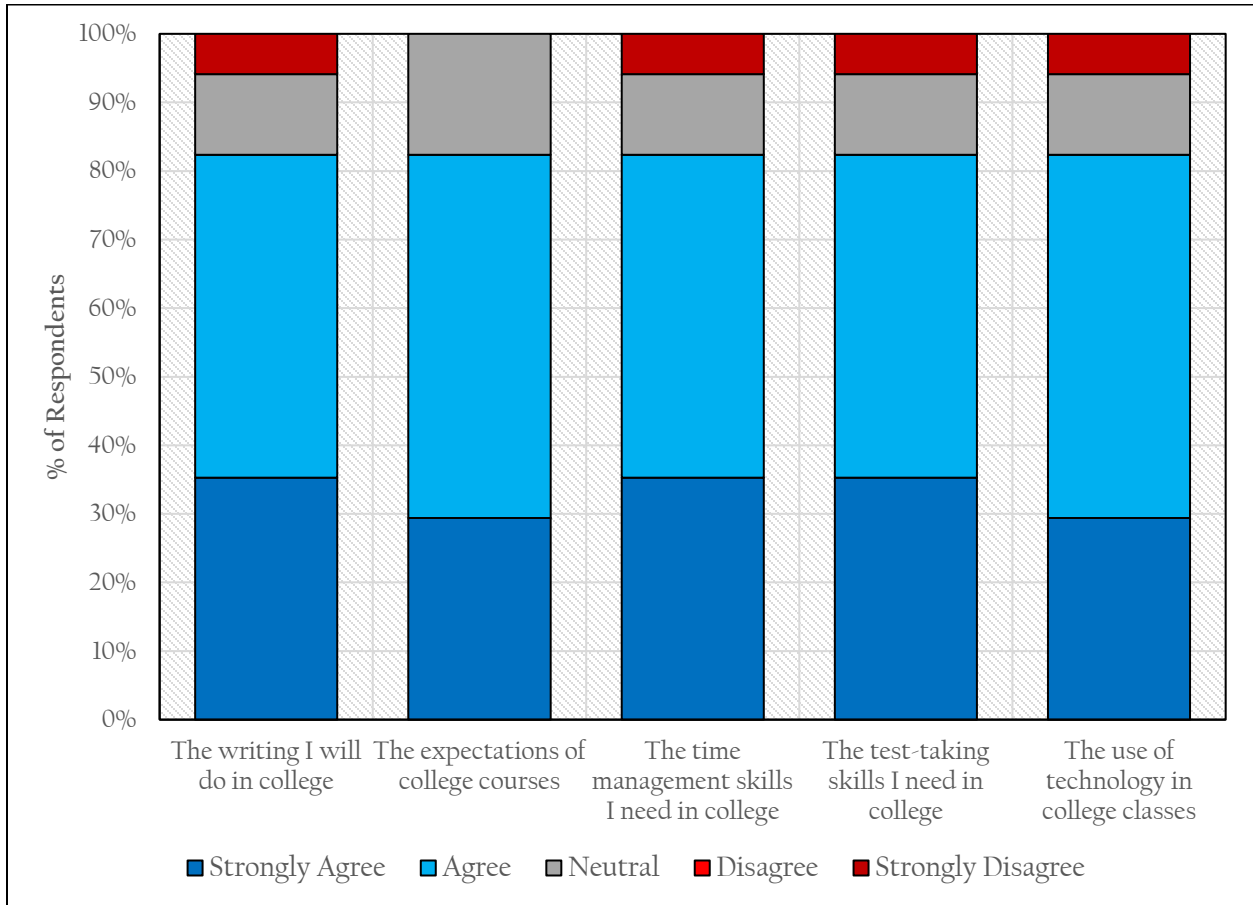
Figure 5. Responses to Question #11 "This English course prepared me for:" n=17.

All five areas exhibit positive responses (Agree or Strongly Agree) of 80% or better. Additionally, all five areas exhibit the same percentage of positive response, at 82%.

A tabulation of positive responses (Strongly Agree or Agree) and comparison based on learning strategy would normally be included here. However, of the 17 responses, 15 reported from compressed sections while only two reported from modularized sections making statistical significance tests yield limited accuracy (de Winter, 2013) and so no comparisons were conducted.

A comparison of positive response to survey prompts in questions 8 through 11 in show below in Figures 6 through 9. Note that comparison from fall-to-spring is less useful as assessment reports across multiple

course level and program level assessments at FSW typically exhibit substantial differences from fall to spring term and are better interpreted from fall-to-fall and spring-to-spring (see http://www.fsw.edu/facultystaff/assessment/history for further details).
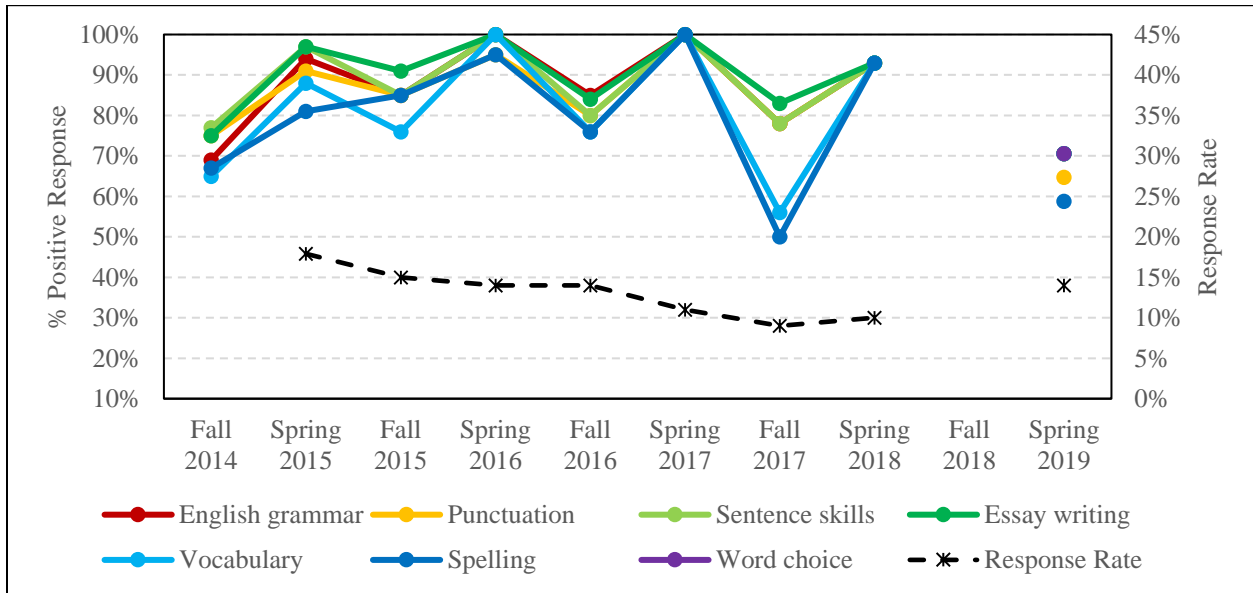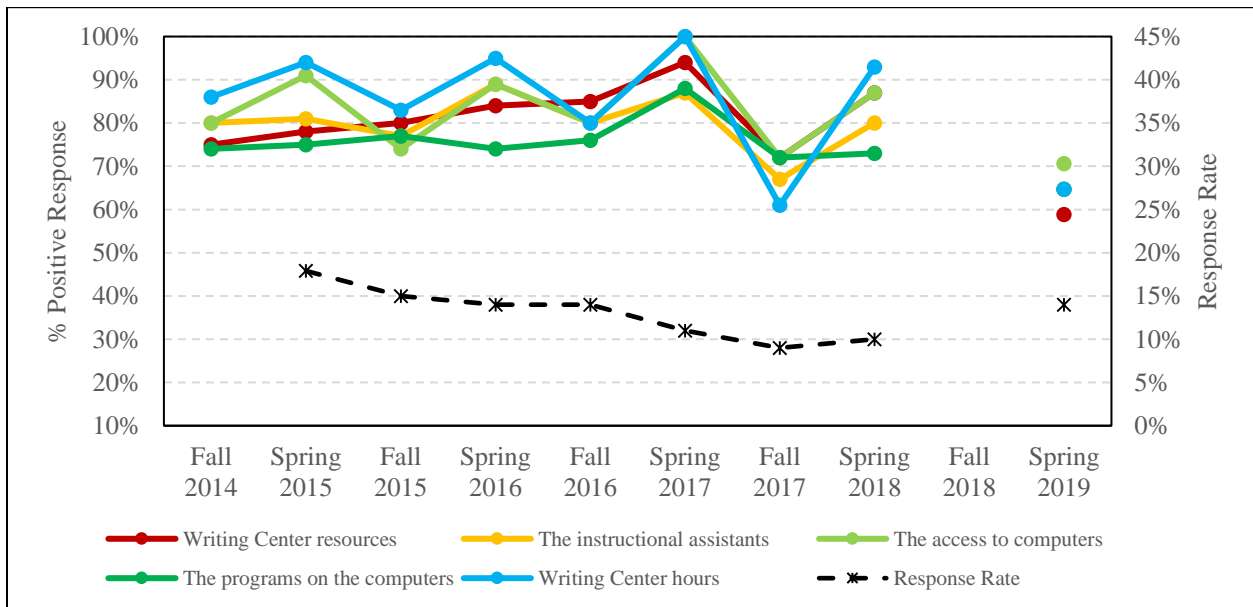
Figure 6. Question 8 positive response and response rate over time.

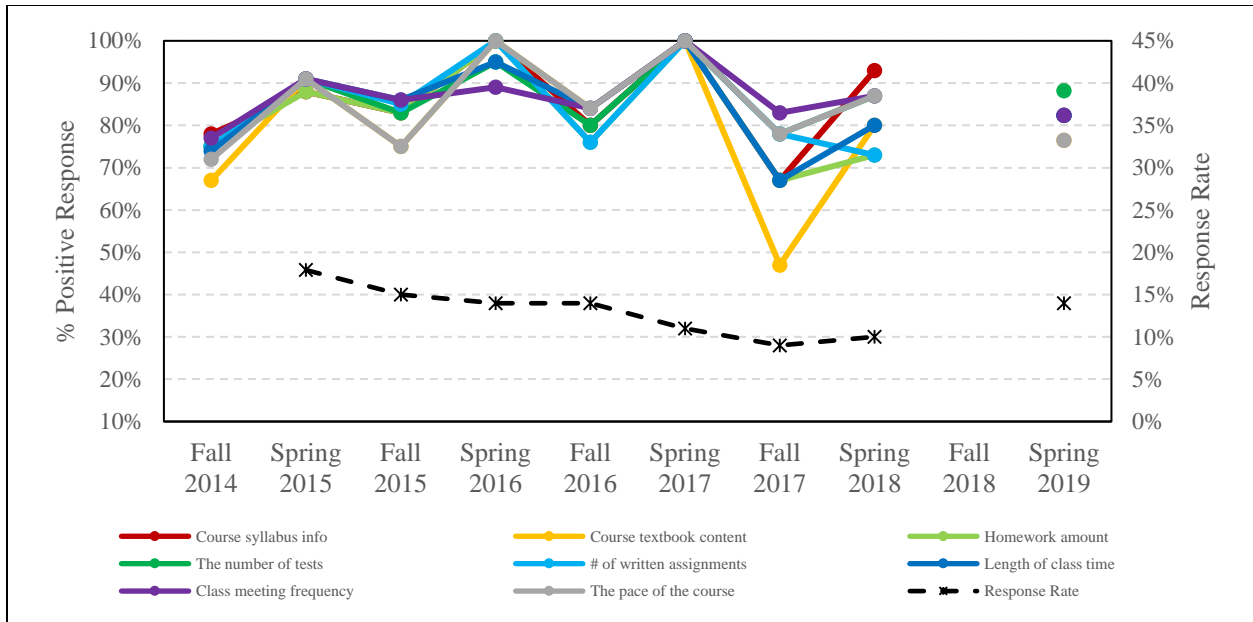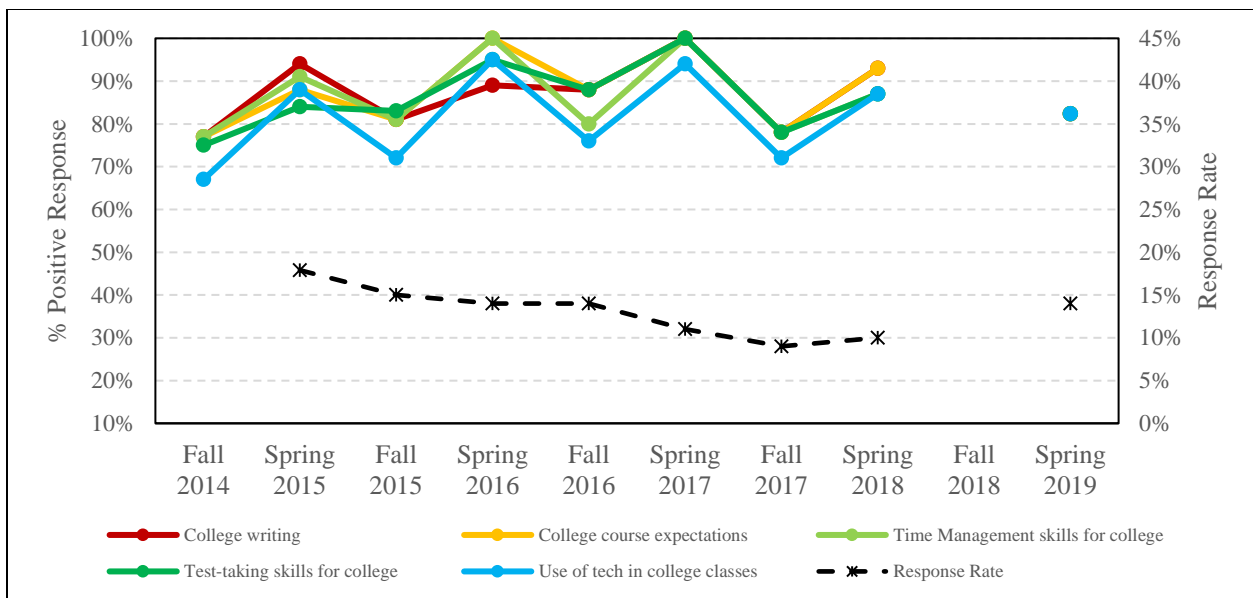**Figure 7. Question 9 positive response and response rate over time.**

Figure 8. Question 10 positive response and response rate over time.

Figure 9. Question 11 positive response and response rate over time.

References:

de Winter, J.C.F. 2013. Using the Student's T-Test with Extremely Small Sample Sizes. Practical Assessment, Research, and Evaluation, 18(10), 1-12.

Section 4

Florida SouthWestern State College's assessment plan includes collection of achievement data to determine the efficacy of the developmental options and to inform course and program improvement. The FSW Math Department uses a 38-question final exam to test mastery of the subject in MAT 0057 *Mathematics for College Success*. This 38-question exam was new for spring 2018. Previously a 45-question exam was used (last used summer 2017 as fall 2017 assessment was cancelled due to Hurricane Irma). The following report details the results for the final exam for MAT 0057 for the spring 2019 term.

During spring 2019, 21 course sections were run. Of those, 18 sections submitted verified results. In the 18 reporting sections, 205 artifacts from the final exam were collected with all sections originating from the modularized learning strategy version of the course (no compressions sections are offered as a result of determinations made using previous assessment studies). A distribution of the artifact scores can be found in Figure 1. The data exhibit a mode centered on 27/38, mean score of 25.5, compared with 26.8 in fall 2018, and 27.0 in spring 2018.
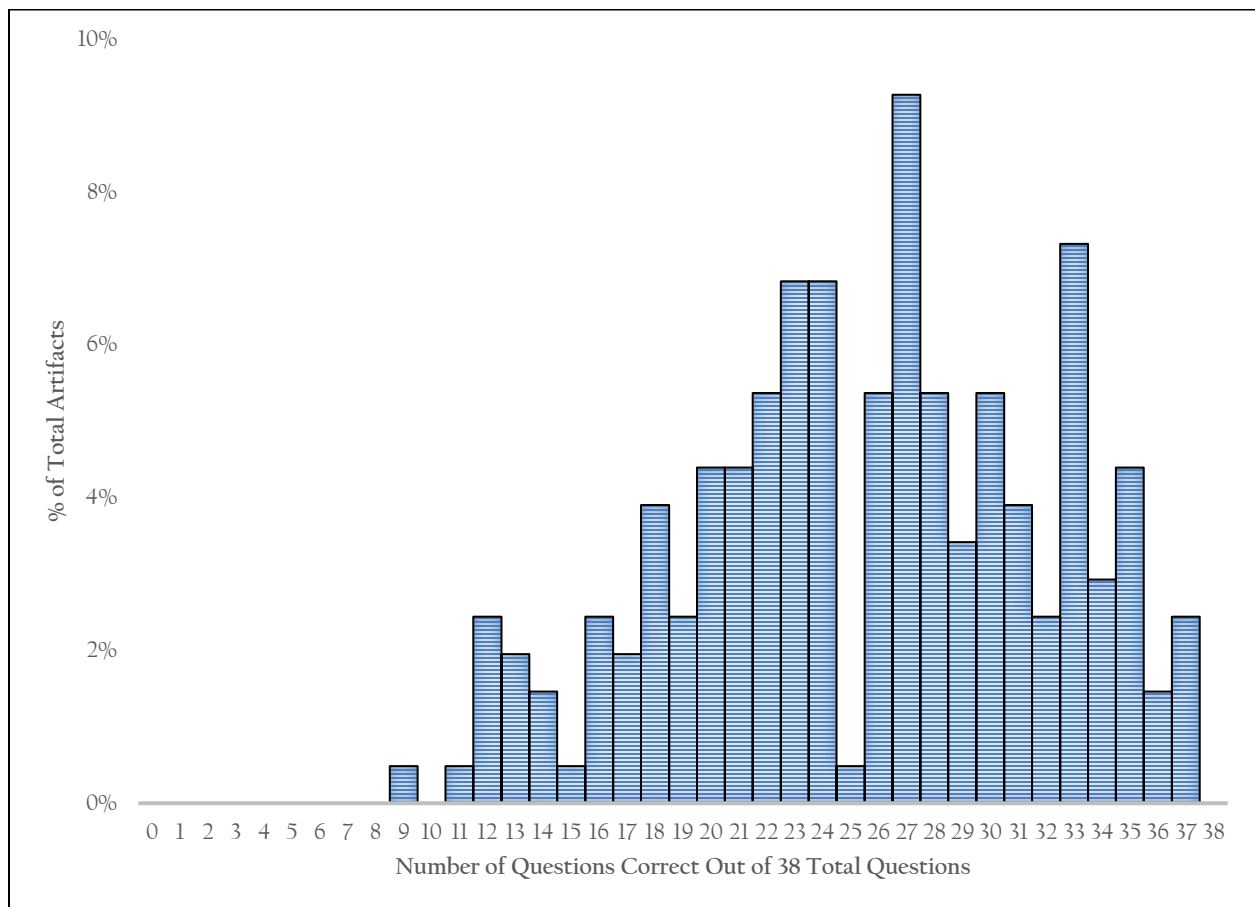

Figure 1. MAT 0057 final exam score distribution for spring 2019 (n=205).

A comparison of mean scores by learning strategy has historically been a part of this report. However, beginning with AY 2017-2018, all MAT 0057 sections are offered in a modularized format. As a result, comparisons by learning strategy are no longer provided here.

Of the 205 artifacts from the final exam, 17 originated from the Charlotte campus, 33 from the Collier campus, 7 from the Hendry-Glades Center, and 148 from the Thomas Edison (Lee) campus. A comparison of mean scores by campus is shown in Figure 2. Differences in the means between sites are tested for significance using an ANOVA according to standard methods[1,2,3,4]. Results of the ANOVA exhibit a statistically significant difference between sites [p=0.003]. 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.
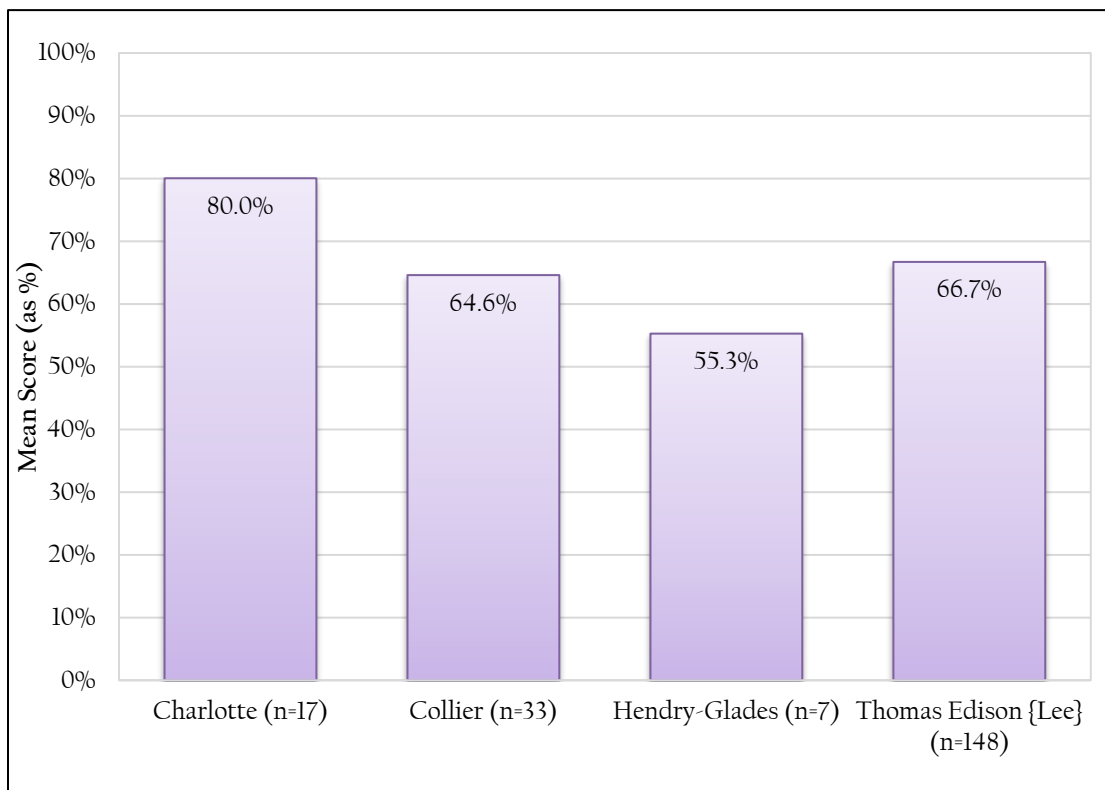

Figure 2. Comparison of MAT 0057 Final exam (mastery exam) scores by site.

A longitudinal study of the common course assessment (final exam) success rates is shown in Figure 3. Results exhibit a steady range of success between 48% and 65%. It is important to note that the lowest achievement is the most recent term. Note that the large spike in success rates for compressed sections is simply a result of a very small sample size for compressed data as the learning strategy was being phased out.
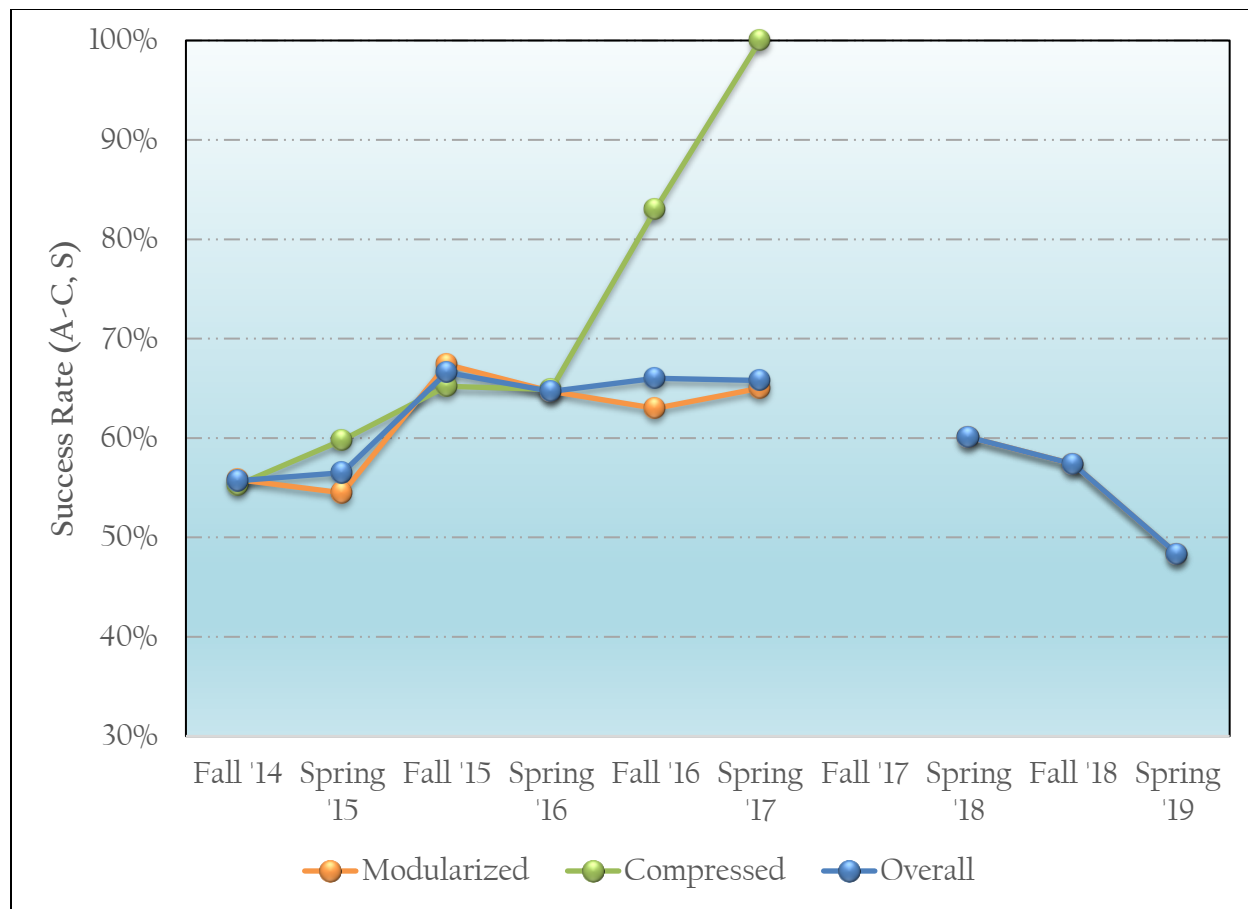
Figure 3. Comparison of MAT 0057 final exam success rates over time. Success rate is achievement at 70% or higher. *All sections are modularized beginning Fall 2017.

[1]Davis, J.C. 1973. Statistics and Data Analysis in Geology. John Wiley & Sons, New York, New York, 564 pp.
[2]McDonald, J.H. 2009. Handbook of Biological Statistics (2nd ed.). Sparky House Publishing, Baltimore, Maryland.
[3]Siegel, S. 1956. Nonparametric statistics for the behavior sciences. McGraw-Hill, New York, New York, 312 pp.
[4]Wilkinson, L. 1999. APA Task Force on Statistical Inference. Statistical Methods in Psychology Journals: Guidelines and Explanations. American Psychologist 54 (8), 594–604.

Section 5

Florida SouthWestern State College tracks satisfaction of current developmental courses through a survey administered at the end of each term. The data is in support of assessment measures for the developmental accountability plan to determine efficacy of developmental options and to inform course and program improvement. The following are the results for the spring 2019 term for ENC 0022 *Mathematics for College Success* which utilized a re-developed survey based on prior results and new developments within the program which merit satisfaction tracking.

Of the 419 students enrolled in MAT 0057 during spring 2019, 89 responded to the survey for a response rate of 21%. This is the highest response rate since the survey tool began in Fall 2014 (note that the survey was not run in Fall 2018 while it was being updated). A review of response rates over the last three academic years is shown below:

- 21%: Spring 2019
- 16%: Spring 2018
- 17%: Fall 2017
- 18%: Spring 2017
- 15%: Fall 2016

Of the 89 respondents, 86% reported being enrolled in sections that met twice per week while 14% reported once per week. Additionally, 74% reported being female, 21% reported being between the age of 18 and 21, and 66% reported AY 2018-19 as their first year in college.

Questions 6 through 9 are Likert scale questions describing student perception of learning and achievement in various areas. The below are the prompts for Question #6 followed by the results in Figure 1.

Q6: Indicate your level of agreement in the following areas since taking this Math class.
1. I am better at Math
2. Math is less scary
3. Math makes more sense to me
4. Math is easier for me
5. I have learned how to manage time appropriately to succeed in math
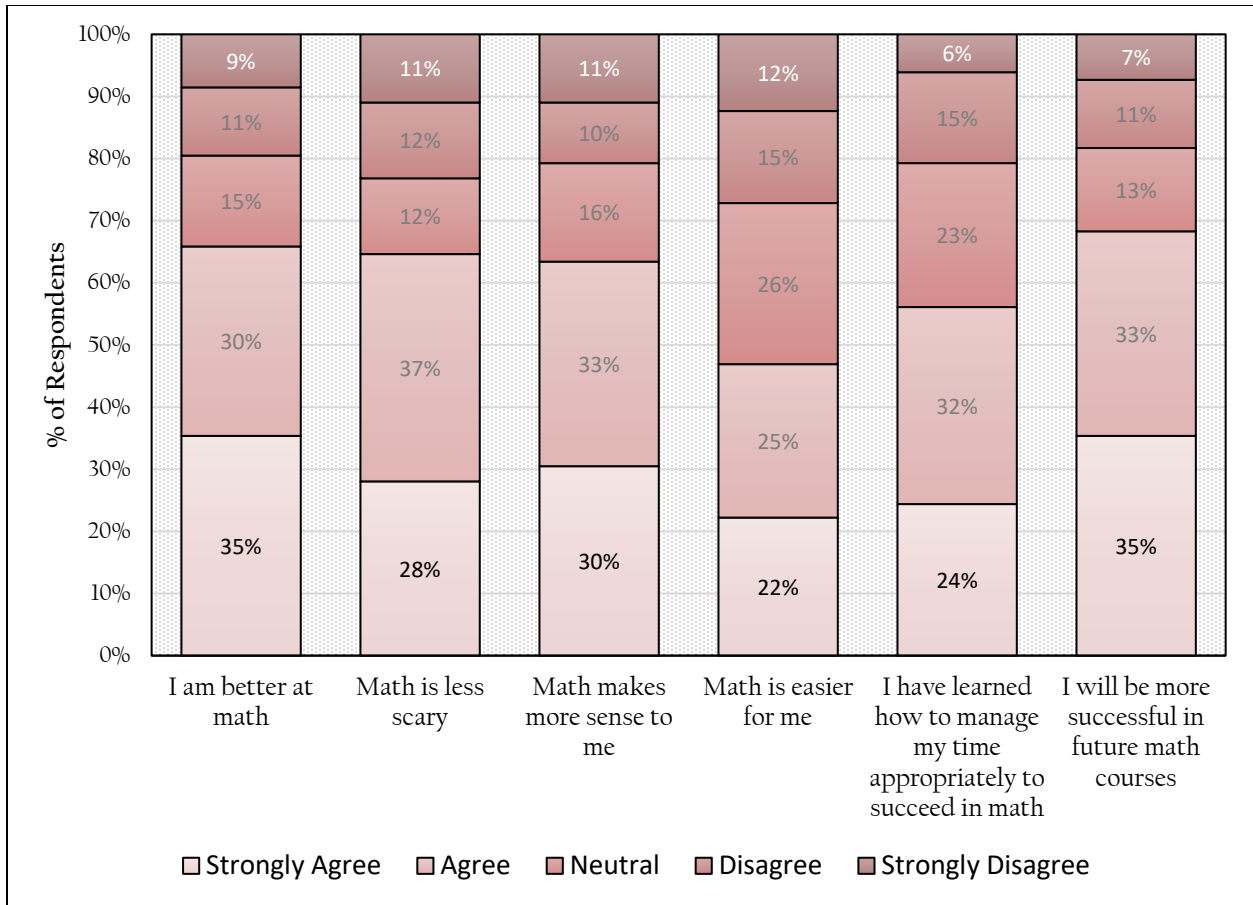*6. I will be more successful in future math courses*

Figure 1. Responses to Question #8 " I believe I have improved in the following areas since taking this Math class." n=82.

All seven areas exhibit positive responses (Agree or Strongly Agree) of 45% or higher. The statement "I will be more successful in future math courses" exhibits the highest positive response at 68%. The statement "Math is easier for me" exhibits the lowest positive response rate at 47%.

The below are prompts for Question #7 followed by the results in Figure 2.

> *Q7: I benefited from the following aspects of the Math Center/Math Lab this semester.*
> *   *1. The resources available in the Math Center*
> *   *2. The instructional assistants*
> *   *3. The access to computers*
> *   *4. The programs on the computers*
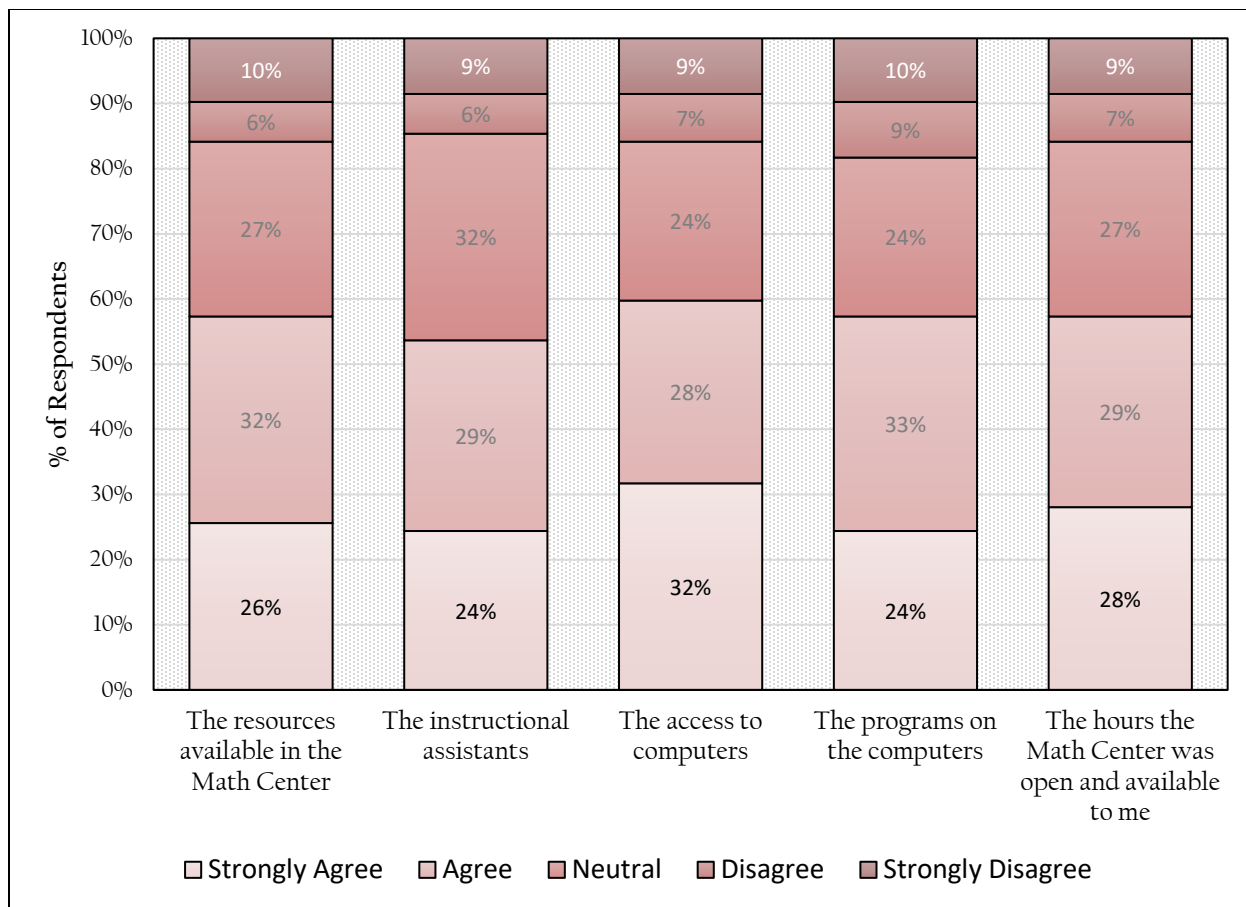> *   *5. The hours the Math Center was open and available to me*

Figure 2. Responses to Question #7 "I benefited from the following aspects of the Math Center / Math Lab this semester." n=82.

All five areas exhibit positive responses (Agree or Strongly Agree) of 50% or better. The statement "The access to computers" exhibits the highest positive response at 60%. The statement "The instructional assistants" exhibits the lowest positive response rate at 53%.

The below are the prompts for Question #8 followed by the results in Figure 3.

> *Q8: I was satisfied with the following aspects of my Math class this semester.*
> *1. The information on the course syllabus*
> *2. The online homework with MyMathLabs Plus*
> *3. The amount of homework assigned*
> *4. The clarity of the explanations within the MyLabsPlus site*
> *5. The number of tests*
> *6. The length of time in class*
> *7. The frequency of class meetings*
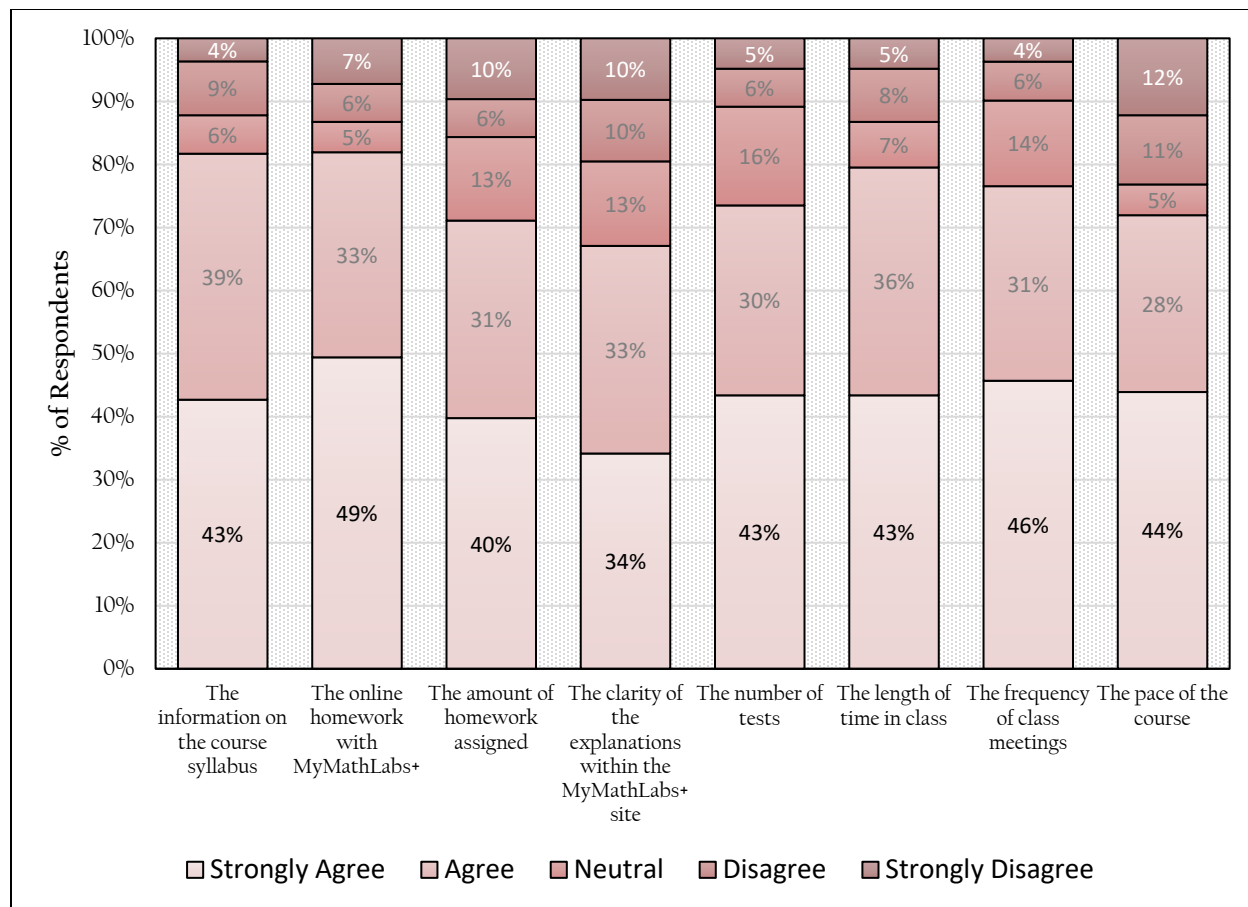> *8. The pace of the course*

Figure 3. Responses to Question #8 "I was satisfied with the following aspects of my Math class this semester." n=82.

All areas exhibit positive responses (Agree or Strongly Agree) of 65% or better. The statement "The online homework with MyMathLabs Plus" exhibits the highest positive response at 82%. The statement "The clarity of the explanations within the MyMathLabs Plus site" exhibits the lowest positive response rate at 67%.

The below are the prompts for Question #9 followed by the results in Figure 4.

Q9: This Math course prepared me for:
1. The next Math classes I will take
2. The time management I must have in college
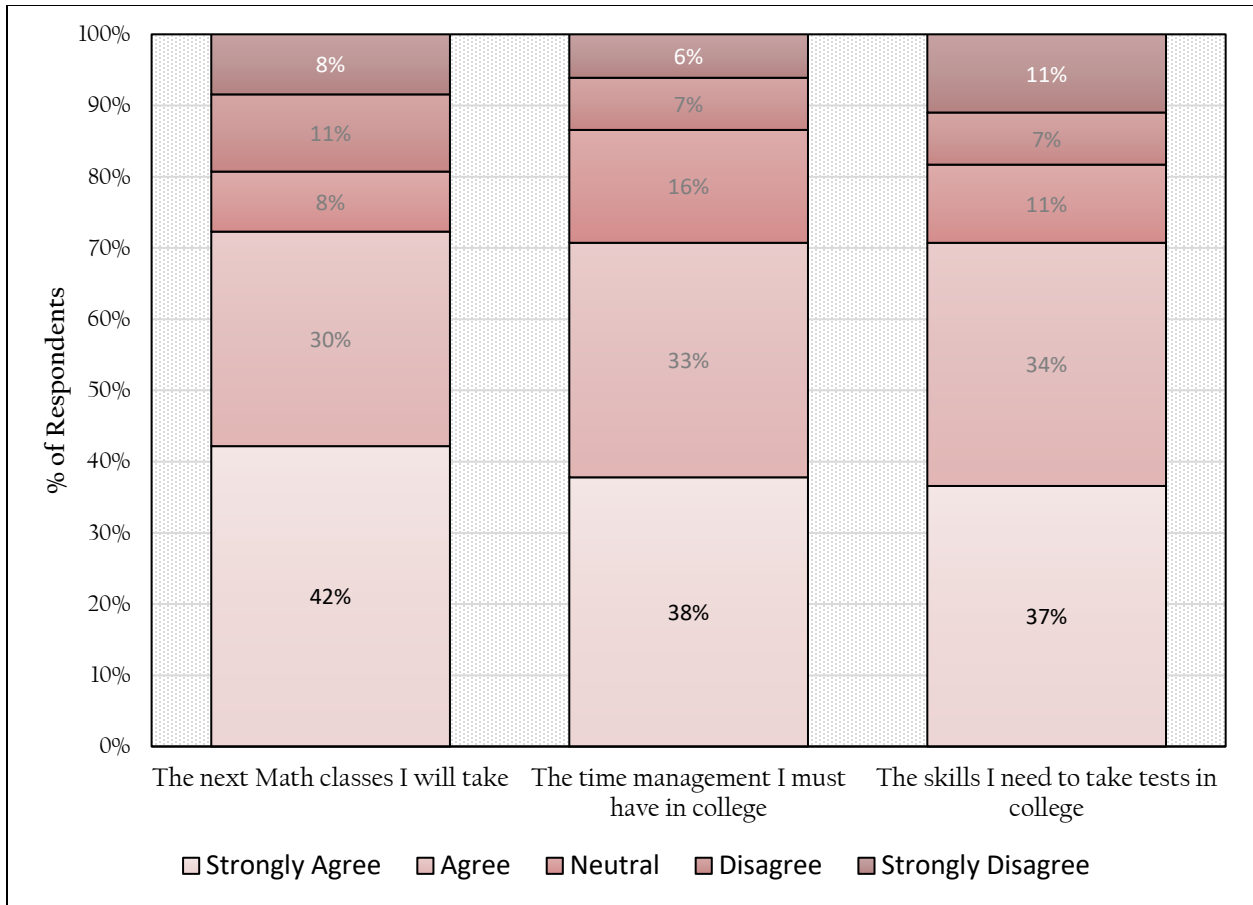*3. The skills I need to take tests in college*

Figure 4. Responses to Question #9 "This Math course prepared me for:" n=82.

All three areas exhibit positive responses (Agree or Strongly Agree) of 70% or better. The statement "The next Math classes I will take" exhibits the highest positive response at 72%. The statement "The skills I need to take tests in college" exhibits the lowest positive response rate at 71%.

A comparison of positive response to survey prompts in questions 6 through 9 in show below in Figures 5 through 8. Note that comparison from fall-to-spring is less useful as assessment reports across multiple course level and program level assessments at FSW typically exhibit substantial differences from fall to spring term and are better interpreted from fall-to-fall and spring-to-spring (see http://www.fsw.edu/facultystaff/assessment/history for further details).
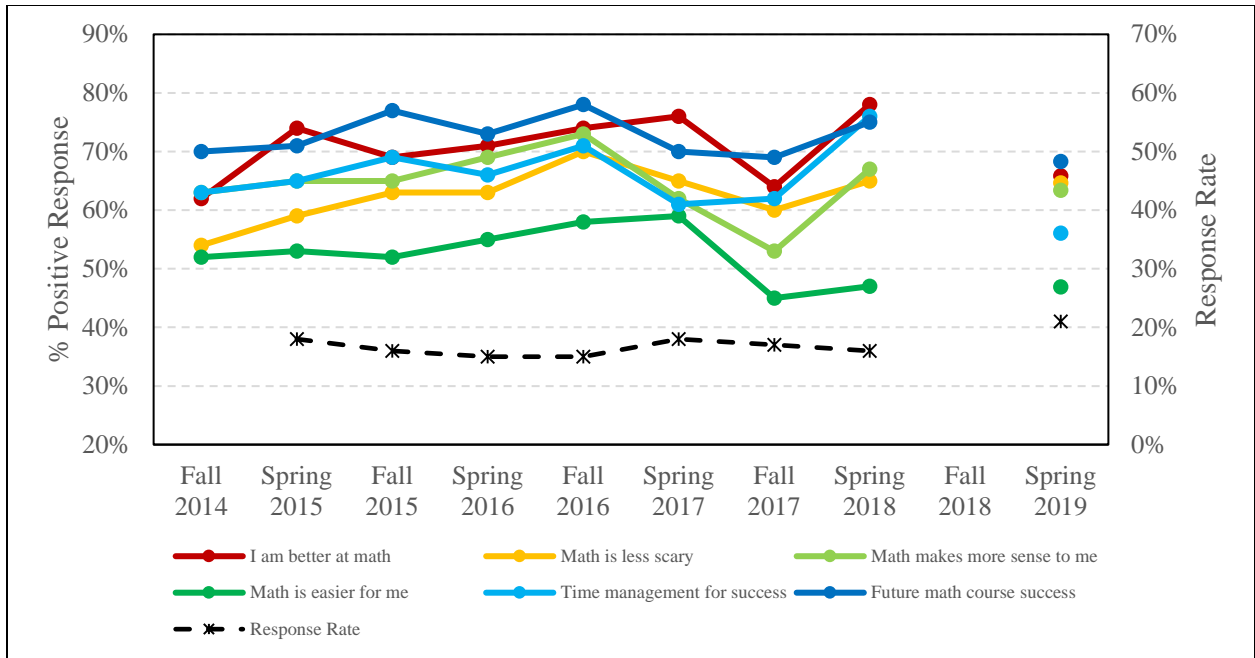
Figure 5. Question 6 positive response and response rate over time.
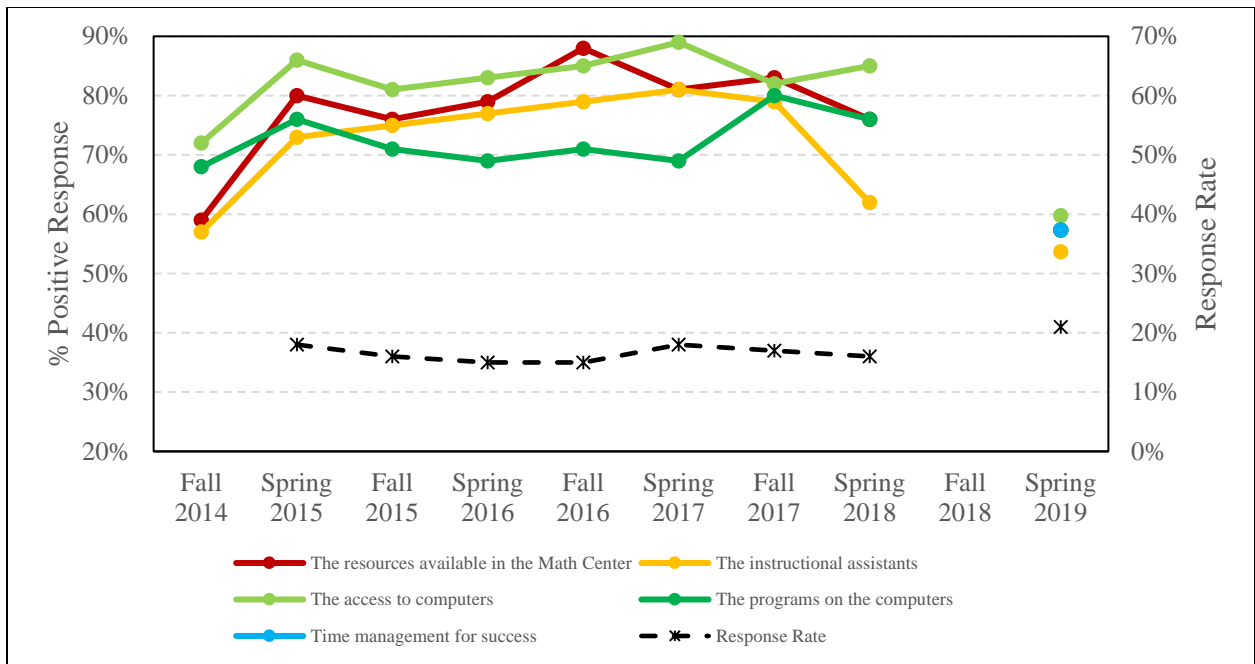

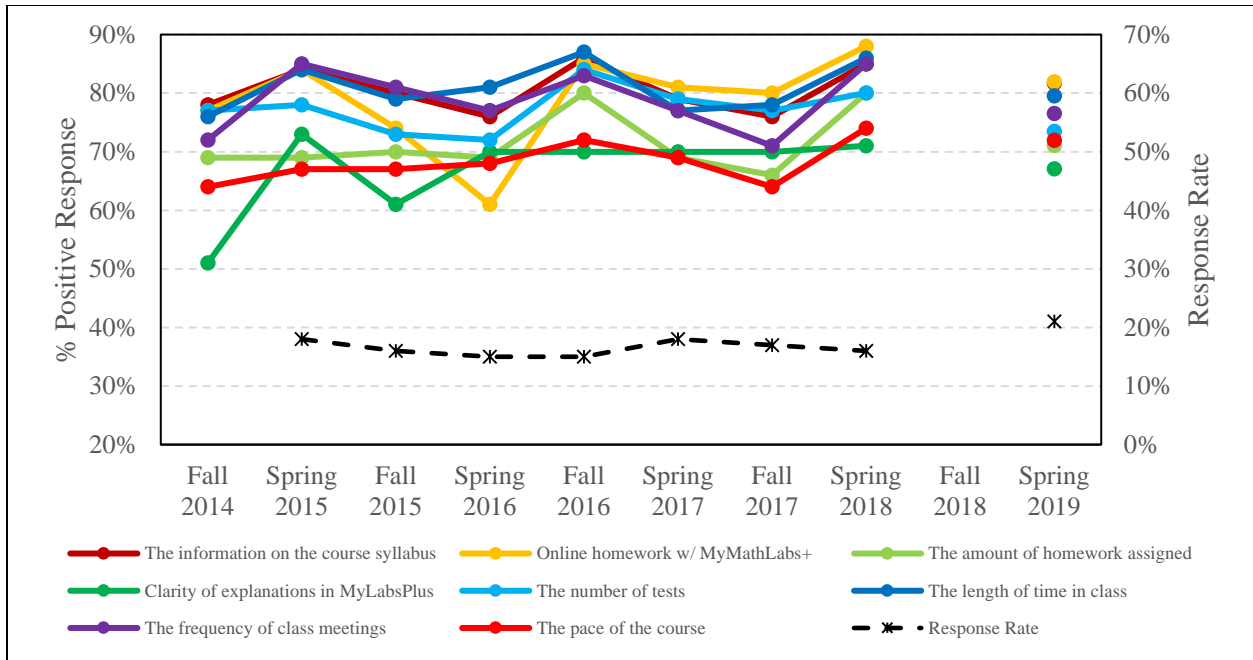**Figure 6. Question 7 positive response and response rate over time.**

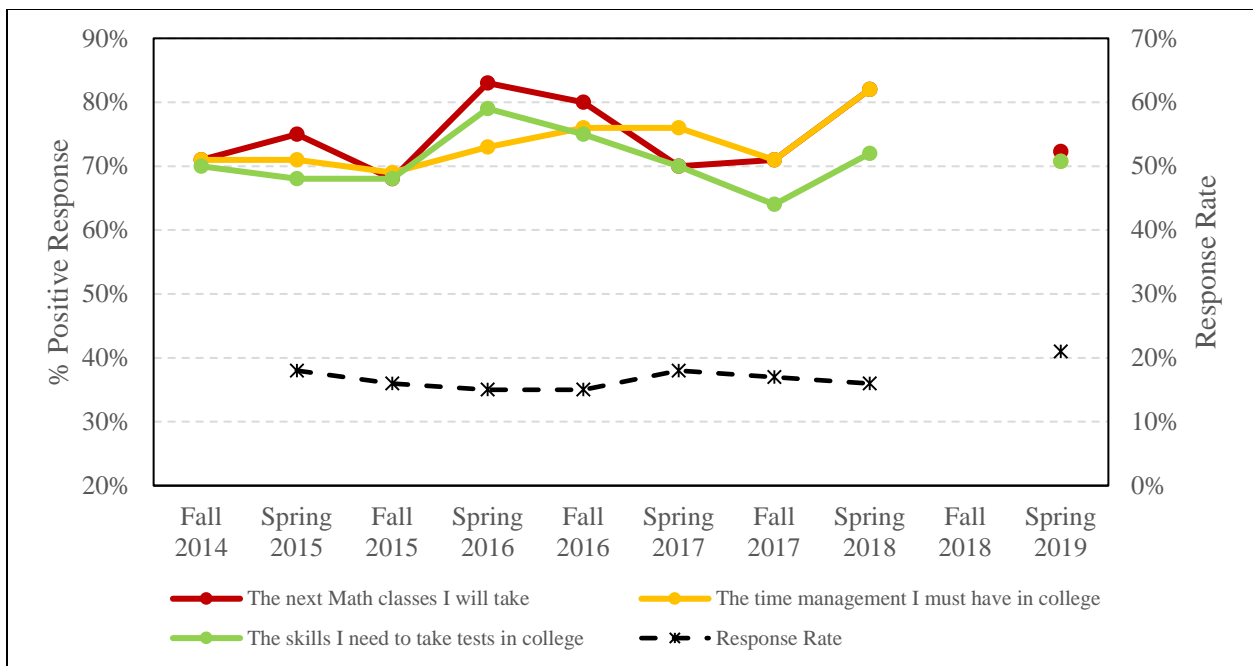**Figure 7. Question 8 positive response and response rate over time.**

Figure 8. Question 9 positive response and response rate over time.

The newly revised survey also asked a series of open-ended questions regarding the importance and satisfaction of the things learned by students in the course. The first of these asked students about importance using the prompt "What was the most important thing you learned this semester?". Students were also asked about the value of topics using the prompt "Please indicate what you liked best about your math class this semester at FSW." Students were then asked using the prompt "Please tell us what

you liked least about your math class this semester." And finally, students were asked about improvement using the prompt "If you could change something to make this course better, what would it be?".   The top three responses along with the percent of respondents reporting that topic are shown below:

What was the most important thing you learned this semester?
1. Time management (24%)
2. Fractions (7%)
3. Factoring (5%)

Please indicate what you liked best about your math class this semester at FSW.
1. The professor (46%)
2. MyLabsPlus (2%)
3. Class length (1%)

Please tell us what you liked least about your math class this semester.
1. Homework (10%)
2. The online work (7%)
3. The professor (6%)

If you could change something to make this course better, what would it be?
1. More practice (8%)
2. The professor (6%)
3. Less homework (6%)

Section 6

Florida SouthWestern State College's assessment plan includes collection of achievement data to determine the efficacy of the developmental options and to inform course and program improvement. The learning outcome: *Students will read at a post-secondary level that correlates with college success by the completion of the Developmental Reading sequence*, is measured through the comparison of pre- and post-tests conducted using the Townsend Press College Reading Test as an assessment within REA 0019 *Reading for College Success*. The following report details the results for Townsend Press College Reading Test for the spring 2019 term.

In a comparison of pre-test to post-test results, the mean scores increased across all rubric criterion as well as the overall score (Figure 1). The difference in the means of the overall score from pre-to-post test scores was tested for significance using a paired means t-test according to standard methods[1,2,3,4]. The paired means t-test results indicate a statistically significant improvement from 25.1 to 29.7 ($t(98)=8.12$, $p=1.48 \times 10^{-12}$). Therefore, we can reject the null hypothesis that the difference in the means of the overall scores of the pre- and post-test scores is equal to 0, and we can conclude this with a 95% confidence that the differences in scores are not solely due to chance. A distribution of overall scores from pre-to-post test can be found in Figure 2.
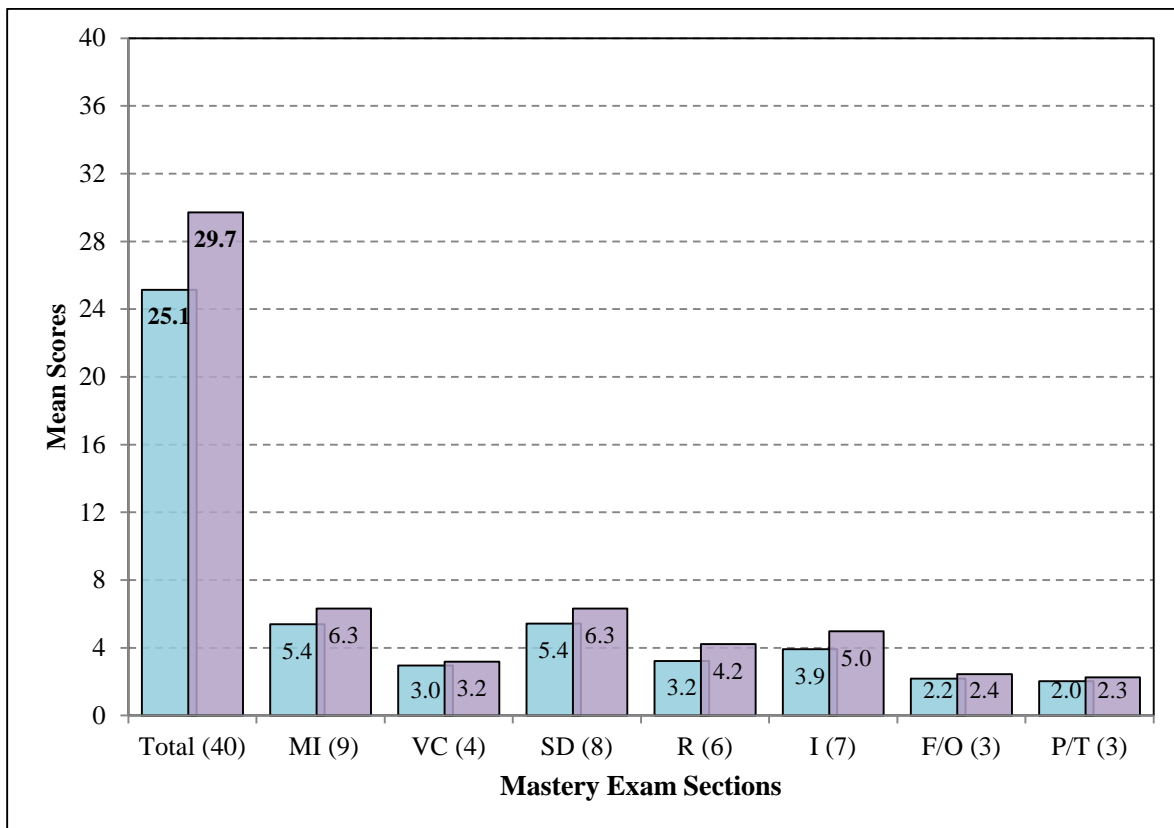

Figure 1. Comparison of pre- (aqua) and post-test (purple) achievement for the Townsend Press College Reading Test (serving as the course mastery exam) conducted during the spring 2019 semester in REA 0019 courses. MI: Main Idea (9 points), VC: Vocabulary (4 points), SD: Supporting Details (8 points), R: Relationships (6 points), I: Inferences (7 points), F/O: Fact/Opinion (3 points), and P/T: Purpose/Tone (3 points) for a total of 40 possible points.
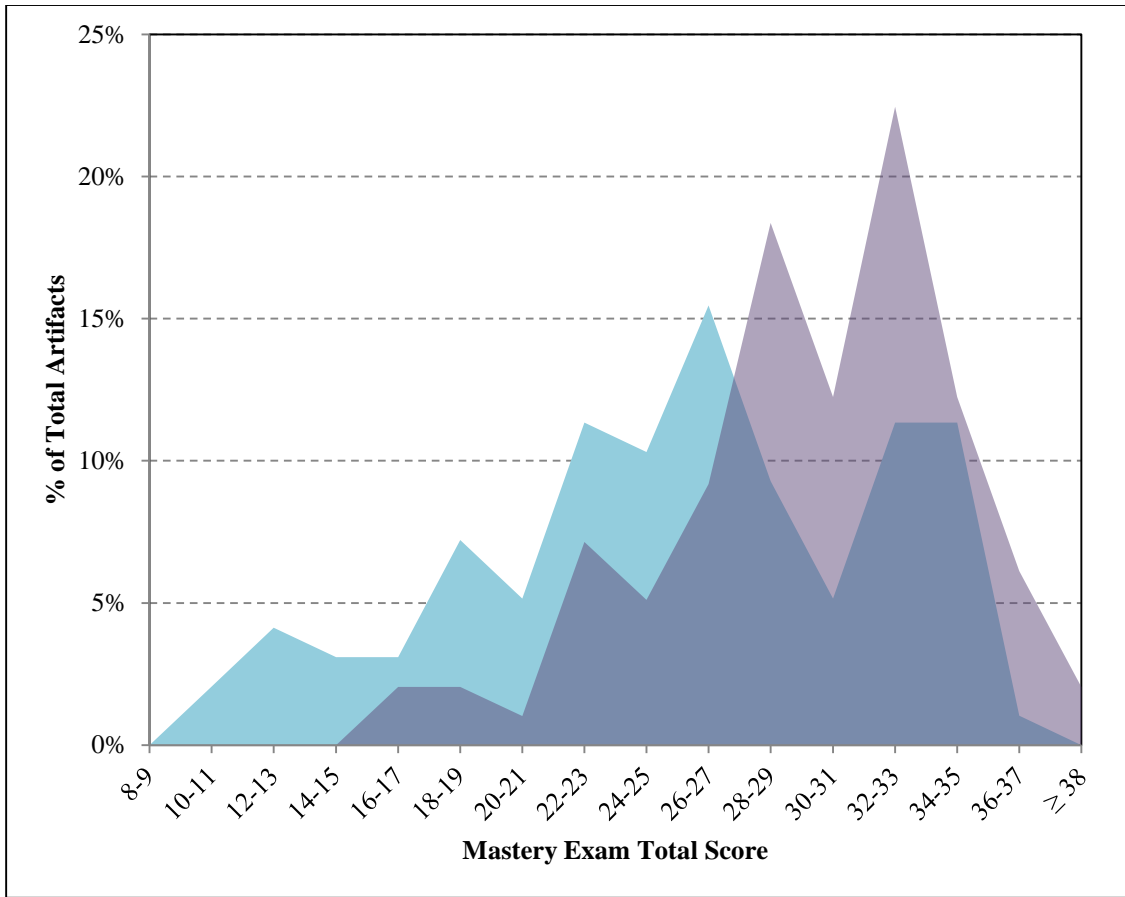
Figure 2. Distribution of pre- (aqua) and post-test (purple) scores for the Townsend Press College Reading Test (serving as the course mastery exam) conducted during the spring 2019 semester in REA 0019 courses.

A comparison of pre-test to post-test results as a function of learning strategy (modularized, compressed, and contextualized) is shown in Figure 3. The mean scores of all learning strategies increased from pre-to-post tests ranging from +3.1/40 points in modularized sections to +5.4/40 points in contextualized sections. These improvements are an increase of 8-13 percentage points. Each comparison study was tested for significance using a paired means t-test according to standard methods[1,2,3,4]. The paired means t-test results indicate a statistically significant improvement for all learning strategies.
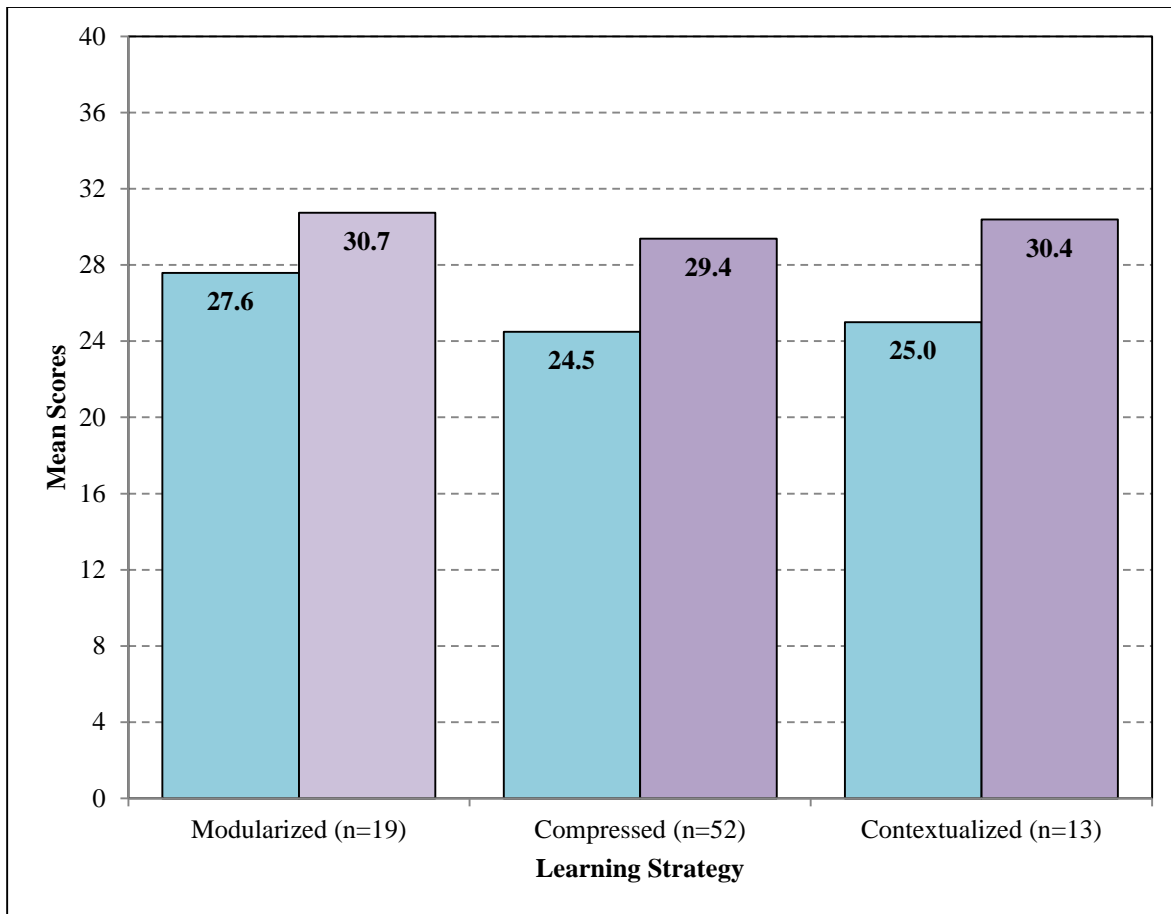
Figure 3. Comparison of pre- (aqua) and post-test (purple) achievement conducted during the spring 2019 semester in REA 0019 courses based on enrollment in a modularized, compressed, or contextualized course.

A comparison of exam success rates for pre-test and post-test according to learning strategy exhibits substantial improvement across all strategies. Based on results of a Fisher's Exact Test for independence, both compressed and modularized strategies have statistically significantly higher rates of passing scores in the post-test than in the pre-test. Contextualized sections, while exhibiting substantial growth, also have a smaller sample size, reducing significance. Results of the Fisher's Exact Test for each learning strategy as well as success rates are shown in Table 1.

	Modularized	Compressed	Contextualized	Overall
Pre-Test	40.0%	36.1%	46.7%	**37.8%**
Post-Test	89.5%	69.2%	84.6%	**73.5%**
P	*0.002*	*6.31×10^{-4}*	*0.054*	*7.78×10^{-7}*

Table 1. Pre-test/Post-test success rates (achievement at 70% or higher) by learning strategy for spring 2019.

A longitudinal study of success rates on this assessment is provided in Table 2 and Figure 4. Overall success rates range from 57% to 79%. The lowest success rates of each academic year consistently occur during the spring term in every academic year except the most recent one, AY 2018-19.

	Modularized	Compressed	Contextualized	Overall
Spring 2015	57%	79%	*	**73%**
Summer 2015	67%	*	*	**68%**
Fall 2015	72%	66%	65%	**69%**
Spring 2016	59%	54%	57%	**57%**
Summer 2016	*	62%	*	**62%**
Fall 2016	83%	72%	78%	**76%**
Spring 2017	*	71%	83%	**72%**
Summer 2017	*	81%	*	**81%**
Fall 2017	81%	81%	75%	**79%**
Spring 2018	*	71%	58%	**68%**
Summer 2018	*	83%	*	**83%**
Fall 2018	75%	65%	76%	**72%**
Spring 2019	90%	69%	85%	**74%**

Table 2. Longitudinal study of post-test success rates (achievement at 70% or higher) using the present assessment (Townshend Press College Reading Test). *Denotes no sections of the strategy offered.
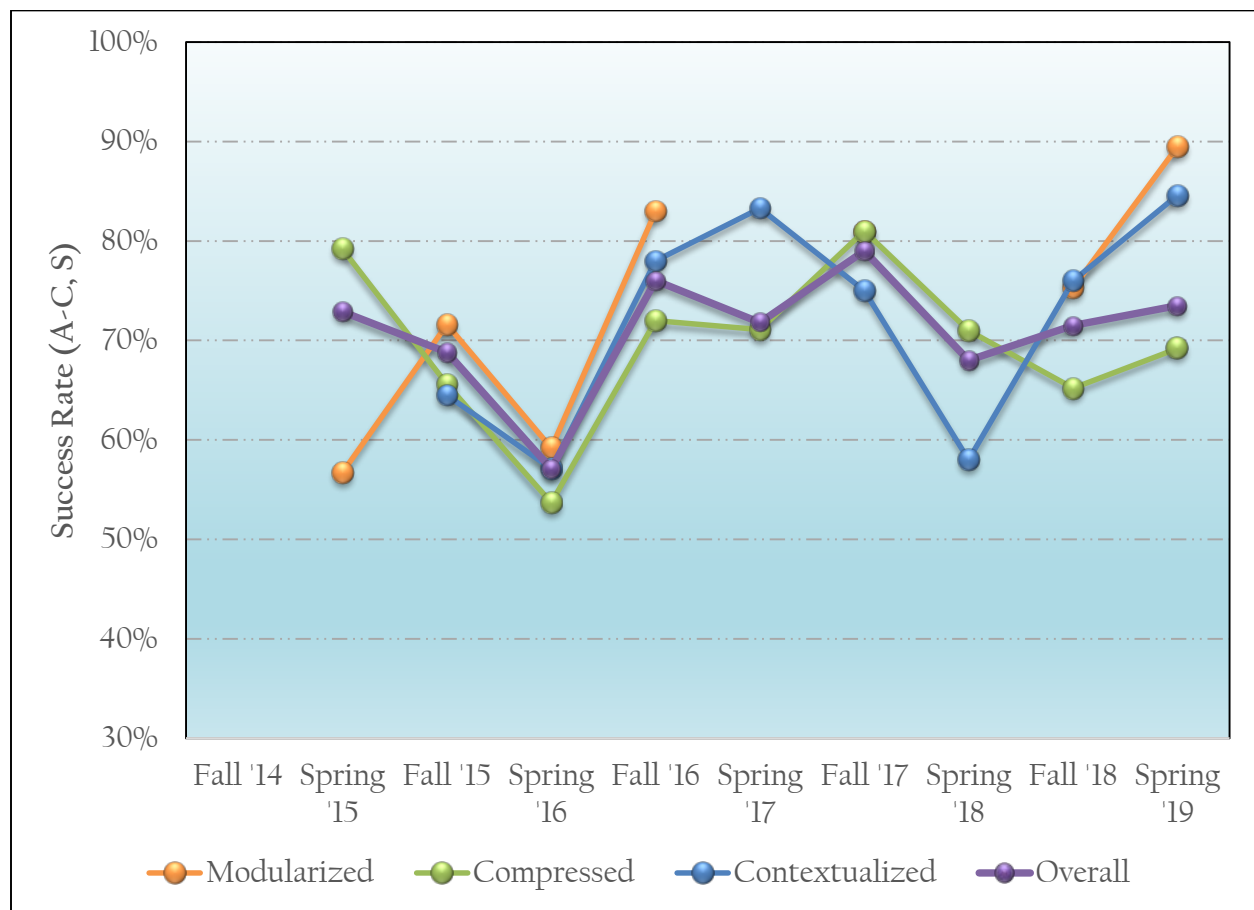

Figure 4. Common course assessment success rates over time by learning strategy. Note that Fall '14 utilized a different common course assessment which did not map well with course outcomes and so results are excluded here.

A paired comparison was also completed to gauge improvement in a case-by-case basis. In that study, 83% of students exhibit at least some improvement from pre-to-post test (Figure 5). Of those, 56% of students exhibit improvement of greater than or equal to 10% (4 point or more increase on the 40-point

test). By comparison, the seven most recent terms exhibit greater than or equal to 10% improvement rates of 59%, 42%, 50%, 49%, 30%, 43%, and 40%.
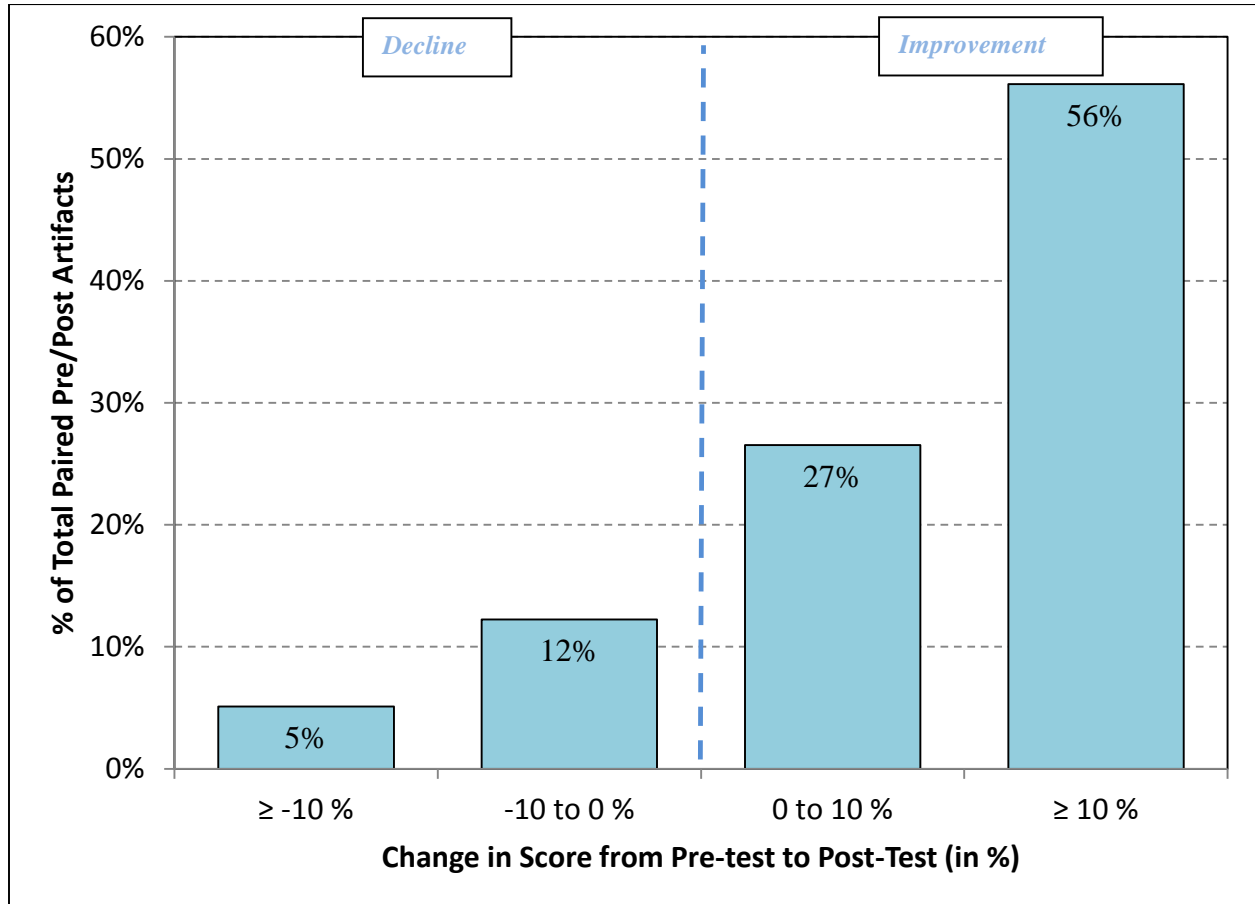

Figure 5. Comparison of the change in individual students' paired tests from pre-test to their post-test counterpart for spring 2019.

[1]Davis, J.C. 1973. Statistics and Data Analysis in Geology. John Wiley & Sons, New York, New York, 564 pp.
[2]McDonald, J.H. 2009. Handbook of Biological Statistics (2nd ed.). Sparky House Publishing, Baltimore, Maryland.
[3]Siegel, S. 1956. Nonparametric statistics for the behavior sciences. McGraw-Hill, New York, New York, 312 pp.
[4]Wilkinson, L. 1999. APA Task Force on Statistical Inference. Statistical Methods in Psychology Journals: Guidelines and Explanations. American Psychologist 54 (8), 594–604.