

EMS Assessment Report

Fall 2018

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1 INTRODUCTION

Florida SouthWestern State College's Emergency Medical Services Program began a study in AY 2018-19 exploring comparative achievement in the Paramedic College Credit Certificate and the Emergency Medical Services AS Program. The study consists of three parts, the first two of which are course level assessments; one from a CCC/AS course (EMS 2119 *Fundamentals of Emergency Medical Care*) and the second from an AS specific course (EMS 2661 *Paramedic Field Internship*). The third part is a new outcome (based on discussions from AY 2017-2018 developmental plan) to understand achievement and progression of students from a course that serves as both a requirement for the CCC EMT and AS EMS program (EMS 2119) to a course that serves exclusively as a requirement for the AS EMS program (capstone course EMS 2661).

The assessment outcomes are intended to provide a baseline and measurement of achievement moving forward as well as investigate the strength and performance of items in the exam. The assessment plan also provides comparisons between dual Enrollment and non-dual enrollment students, online versus traditional students, and by site, where possible. Where data is sufficient, additional analyses are provided including distribution studies and longitudinal studies.

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

2 EMS 2119

2.1 LEARNING OUTCOMES, OBJECTIVES, AND DESCRIPTIVE STATISTICS

The FSW Emergency Medical Services Program Director defined a goal of determining general baseline results for core components of the EMS 2119 course for the fall 2018 term.

During the fall 2018 semester, an enrollment of 73 contributed to scores tallied from 3 of 3 sections of EMS 2119. Descriptive statistics for achievement of outcomes are shown in Table 1. A distribution of scores is shown in Figure 1. Mean scores are described herein as percentages because total scores vary by examination. Mean scores range from 90% to 95%. The Trauma Exam exhibits the lowest mean score and is distinguishable in score distribution shown in Figure 1 where a secondary peak of scores can be seen in the 85%-89% range compared with other examinations.

<i>Core Exams</i>	<i>n</i>	<i>Mean (as %)</i>
Airway & Respiratory	73	94%
Cardiology	73	94%
Operations Unit	71	94%
Medical Unit	71	95%
Trauma Unit	71	90%
OB & PEDS Unit	71	93%

Table 1. Student achievement level by Outcome for EMS 2119.

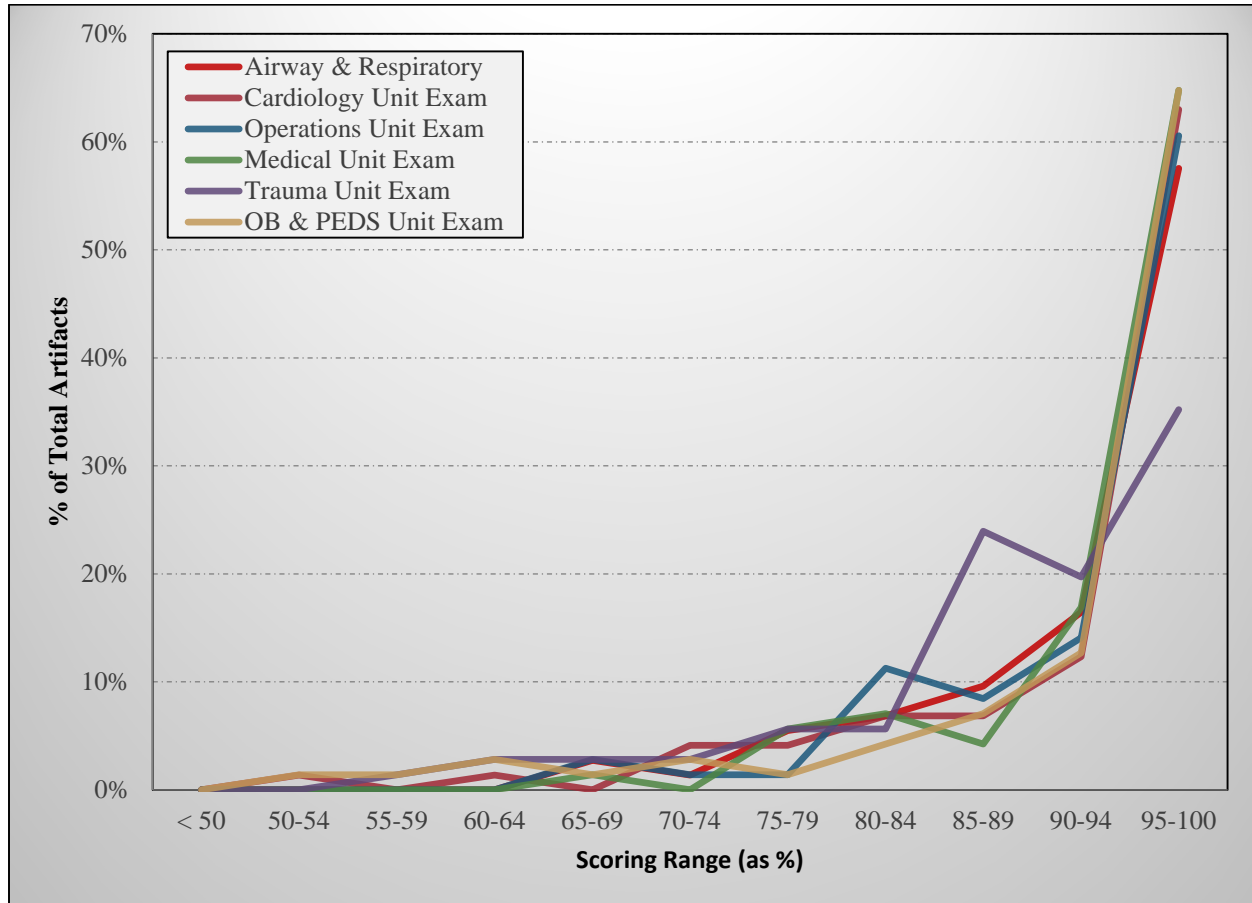


Figure 1. Line graph of score distribution for EMS 2119.

2.2 EXPLORATORY ANALYSIS AND SIGNIFICANCE TESTING

Multiple comparisons of artifact scores across varying formats, campuses, and student types were made, where possible, in order to add depth to the causes of the distribution of the artifacts. Each course was divided into the appropriate subgroups to perform the analysis. In cases where a subgroup is not represented in the course comparisons were not conducted and are noted for comprehensiveness.

2.2.1 Dual Enrollment to Non-Dual Enrollment Comparison

No dual enrollment sections of the course were run during fall 2018 so no comparison study between dual enrollment and non-dual enrollment could be completed.

2.2.2 Online to Traditional Comparison

No online sections of the course were run during the fall 2018 semester, so no comparison study between online and traditional could be completed.

2.2.3 Comparison by Campus/Site

Of the range of 71-73 artifacts (varies by the six core exams) collected from EMS 2119, 21 for each exam originated from the Charlotte campus, 26-28 from the Collier campus depending on exam, and 26 for each exam from the Thomas Edison (Lee) campus. A comparison of mean scores is provided in Table 2 and graphically represented in Figure 2. The Charlotte campus exhibits the highest mean score in 4 of 6 exams. The Thomas Edison (Lee) campus exhibits the highest in the remaining 2 of 6. The Collier campus consistently exhibits the lowest mean scores in 5 of 6 exams.

	Airway & Respiratory	Cardiology Unit Exam	Operations Unit Exam	Medical Unit Exam	Trauma Unit Exam	OB & PEDS Unit Exam
Charlotte	95%	96%	91%	95%	92%	95%
Collier	93%	92%	94%	94%	89%	90%
Thomas Edison (Lee)	94%	94%	95%	95%	89%	94%

Table 2. Comparison of mean scores by site. Bold denotes highest among all sites.

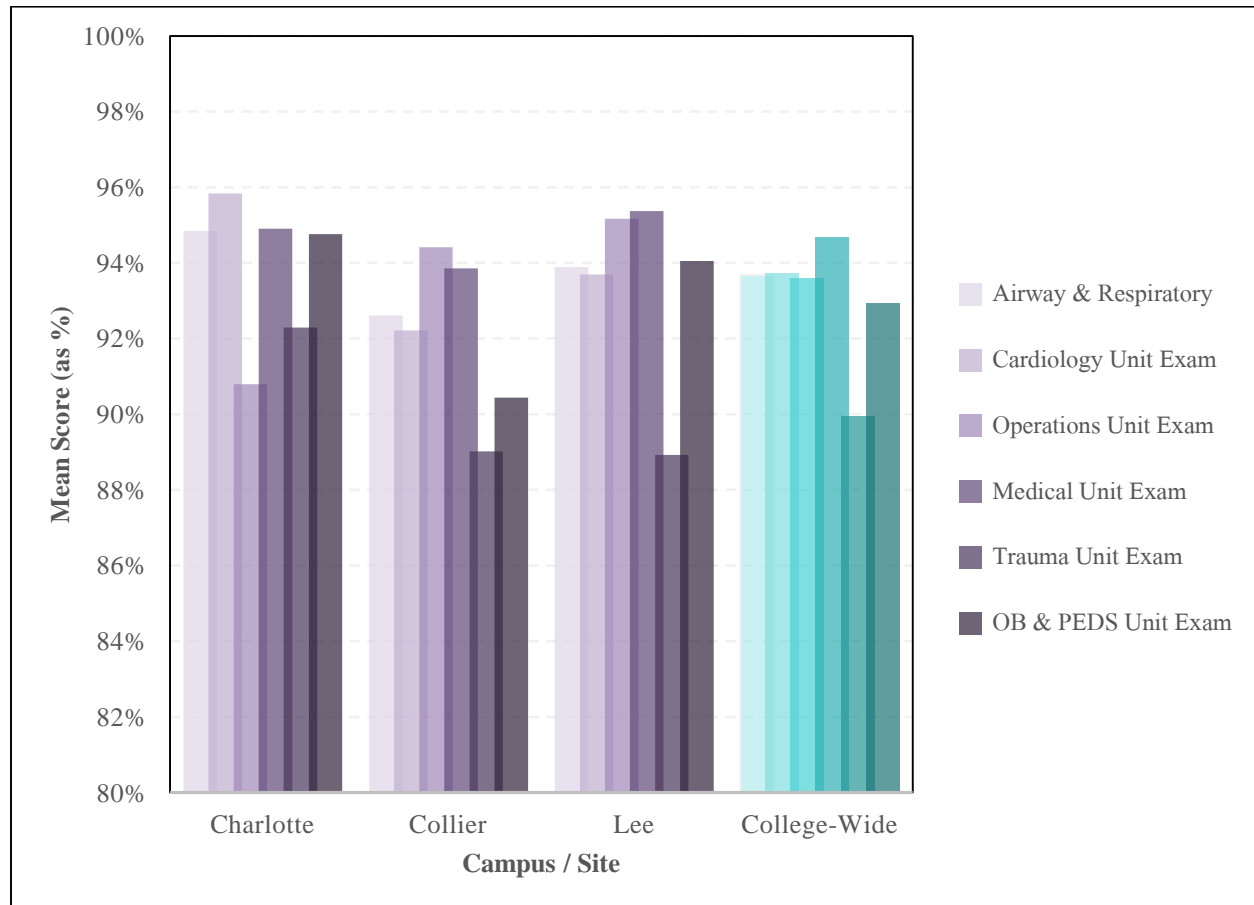


Figure 2. Comparison of mean scores (as %) by site.

2.3 LONGITUDINAL STUDY

As further data is collected in coming terms, this section will track achievement through time and highlight strengths, weaknesses and any long term trends.

3 EMS 2661

3.1 LEARNING OBJECTIVES AND DESCRIPTIVE STATISTICS

The FSW Emergency Medical Services Program Director defined a goal of determining general baseline results for core components of the EMS 2661 course for the fall 2018 term.

During the fall 2018 semester, an enrollment of 40 contributed to scores tallied from 2 of 2 sections of EMS 2661. Descriptive statistics for achievement of outcomes are shown in Table 3. A graphic display of completion of tests (first data column in Table 3) is shown in Figure 3 and 4. In terms of completing tests/certifications in the course, 97% of students complete two or more of the four tests. In total, 25% complete all four.

	<i>Completion % (of Flu Vaccination, TB (PPD), ACLS, CPR) {e.g., 4/4 = 100%}</i>	<i>PMD Internship Folder (max=72)</i>
n	40	40
mode	75%	62
mean	75%	63.2
standard deviation	0.204	6.98
skewness	-1.19	-0.67
kurtosis	3.35	1.37

Table 3. Student achievement level by Outcome for EMS 2661.

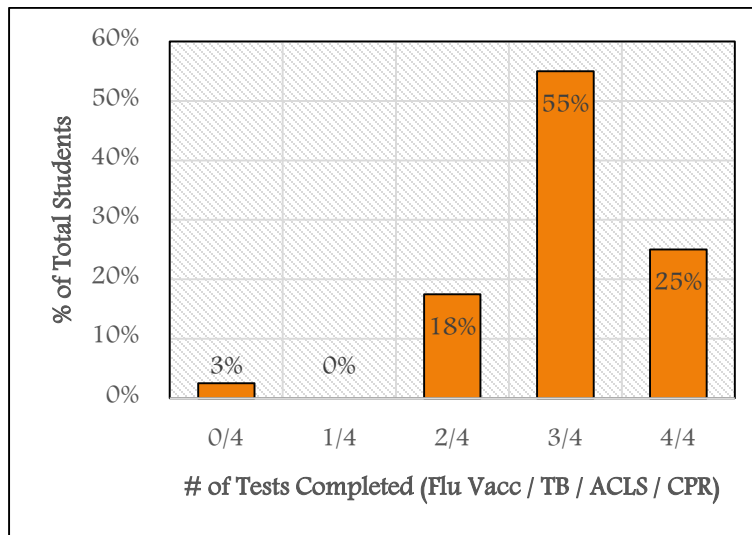


Figure 3. Distribution of students completing all four tests (Flu Vacc, TB, ACLS, CPR).

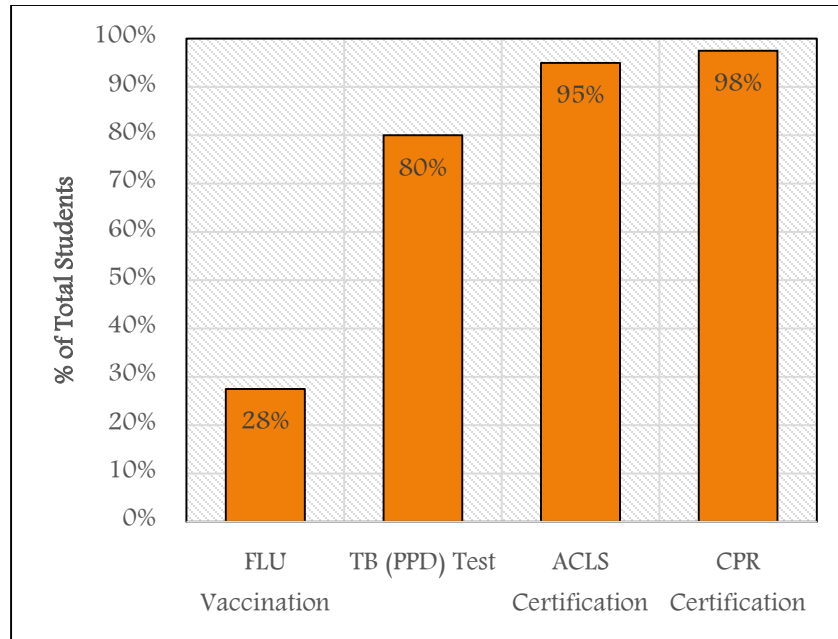


Figure 4. Percentage of students completing each of the tests of EMS 2661.

3.2 EXPLORATORY ANALYSIS AND SIGNIFICANCE TESTING

Multiple comparisons of artifact scores across varying formats, campuses, and student types were made, where possible, in order to add depth to the causes of the distribution of the artifacts. Each course was divided into the appropriate subgroups to perform the analysis. In cases where a subgroup is not represented in the course comparisons were not conducted and are noted for comprehensiveness.

3.2.1 Dual Enrollment to Non-Dual Enrollment Comparison

No dual enrollment sections of the course were run during fall 2018 so no comparison study between dual enrollment and non-dual enrollment could be completed.

3.2.2 Online to Traditional Comparison

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3.2.3 Comparison by Campus/Site

Since the course was only run on one site, no comparison by site can be completed.

3.3 LONGITUDINAL STUDY

As further data is collected in coming terms, this section will track achievement through time and highlight strengths, weaknesses and any long term trends.

4 CCC EMT AND AS EMS PROGRESSION

The CCC-EMT / AS EMS progressions study is an attempt to understand achievement and progression of students from a course that serves as both a requirement for the CCC EMT and AS EMS program (EMS 2119) to a course that serves exclusively as a requirement for the AS EMS program (capstone course EMS 2661). The idea is that the program will be able to review achievement data from a benchmark course in CCC/AS program to capstone course in AS program through the collection of data from both courses and the persistence of students from early CCC course to late AS course.

This operation is an effort to make decisions that would better serve the CCC graduates in employment and furthering their degree. Because the dual-course study began in fall 2018, this study is longitudinal by design. As a result, what follows below is a brief overview of some of the types of information that will be collected going forward (Figures 5 and 6).

An early pilot study sample size of $n = 27$ was available utilizing the most recent cohort of EMS 2661 completers. When comparing achievement across courses (EMS 2119 to EMS 2661), no trends are readily apparent (Figure 5). Those who complete EMS 2119 at a lower achievement level are no less likely to complete EMS 2661 at a higher achievement level than any other student.

In an early study investigating the time lag between students completing EMS 2119 and those completing EMS 2661, some information can be gleaned. In total, 59% of those completing EMS 2661 (from an early pilot study sample size of 27) do so two academic years or less since completing EMS 2119 (Figure 6). Of the remaining 41% who continue on from EMS 2119, most do so within one additional academic year. Only 15% of those continuing on to EMS 2661 from 2119 take more than three academic years.

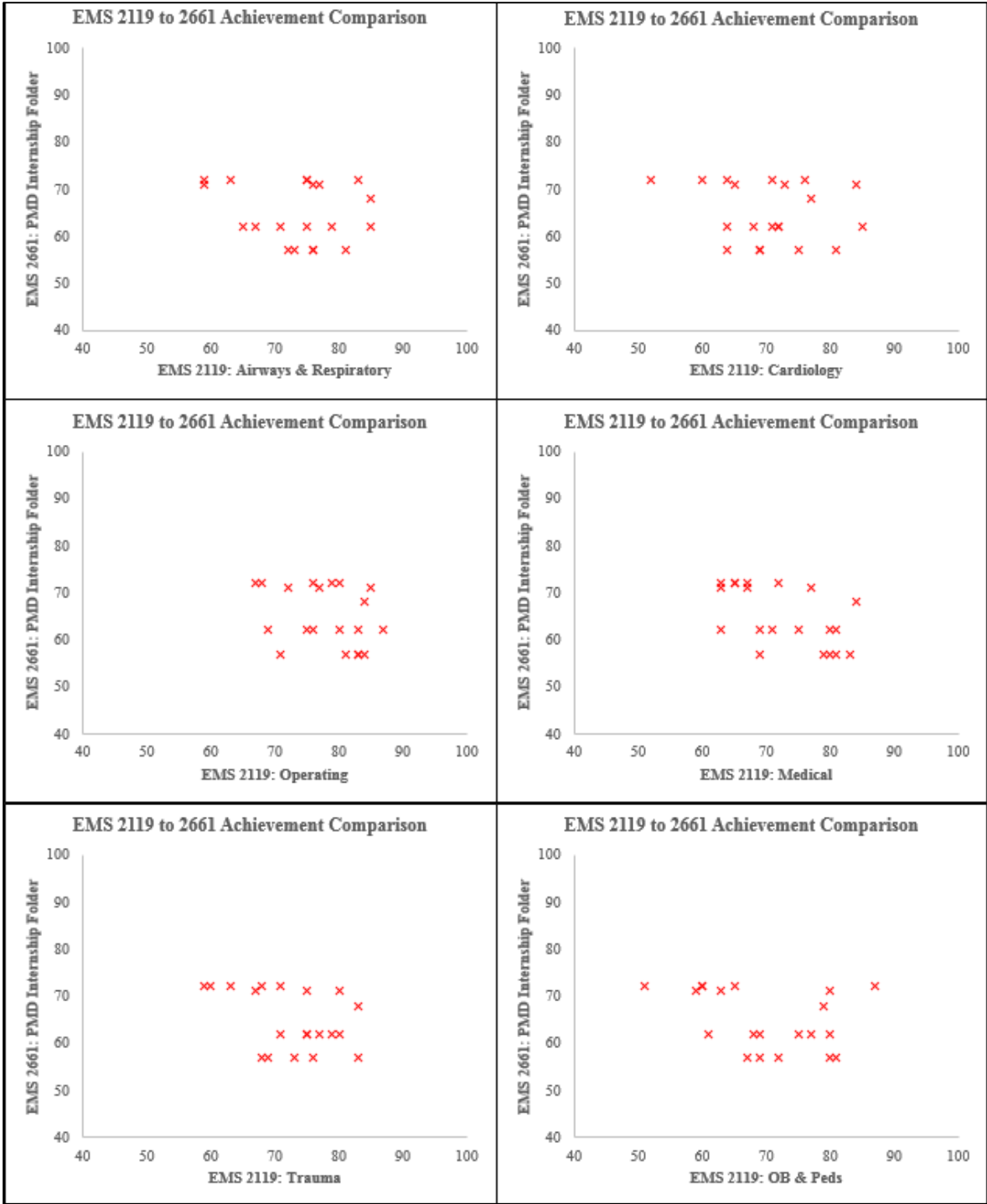


Figure 5. One-to-one comparison of EMS 2119 and EMS 2661 achievement. Each red 'x' denotes a single student's performance who has completed both the EMS 2119 achievement measure (x-axis) and the EMS 2661 achievement measure (y-axis).

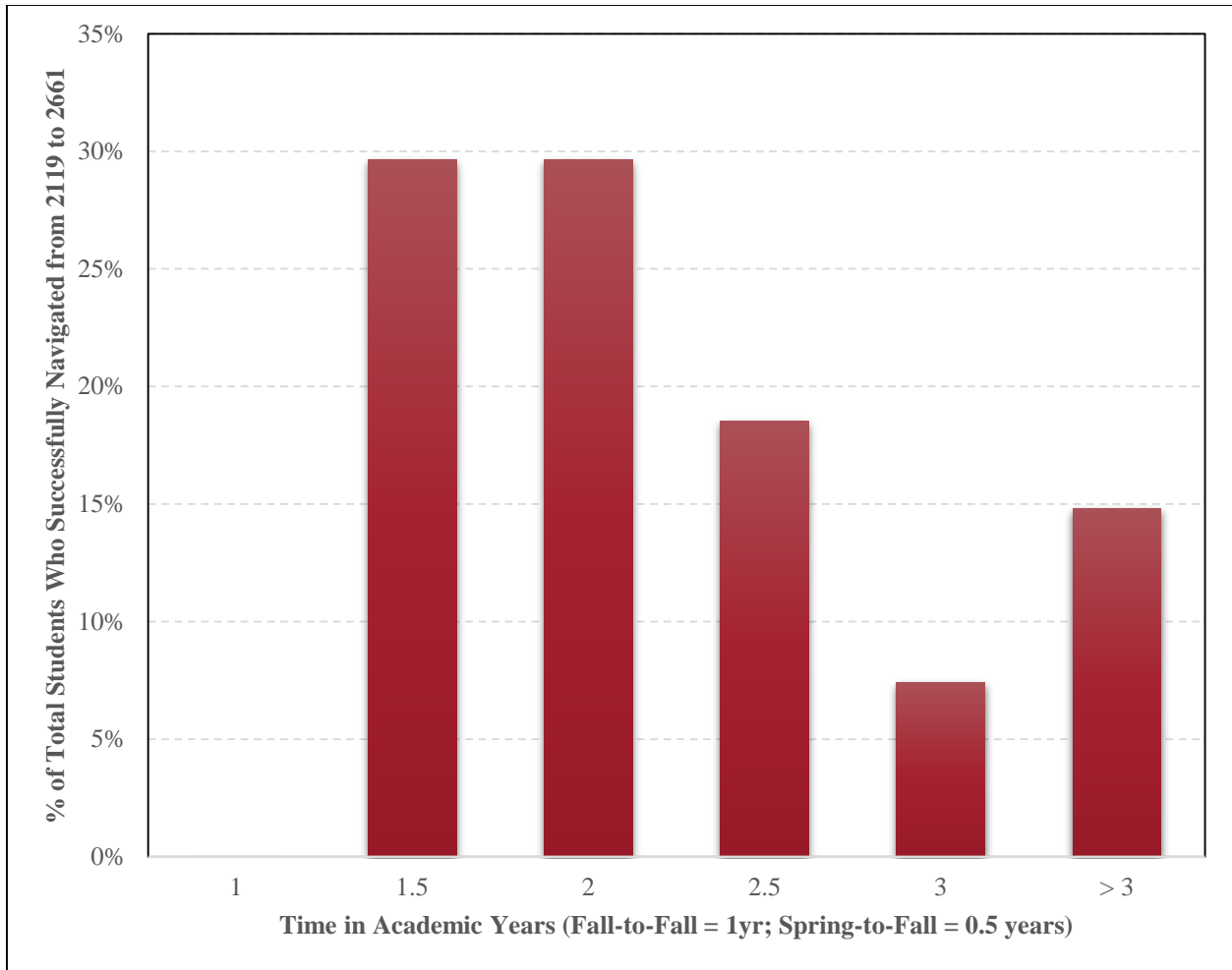


Figure 6. Comparison of the amount of time between successful students completing EMS 2119 and completing EMS 2661. Note that Academic Year in this sense is defined as follows: Fall to Fall = 1 year, Spring to Fall = 0.5 years.

5 CONCLUSIONS

FSW's Emergency Medical Services Program began a study in AY 2018-19 exploring comparative achievement in the Paramedic College Credit Certificate and the Emergency Medical Services AS Program. The study consists of three parts, the first two of which are course level assessments; one from a CCC/AS course (EMS 2119 *Fundamentals of Emergency Medical Care*) and the second from an AS specific course (EMS 2661 *Paramedic Field Internship*). The third part is a new outcome (based on discussions from AY 2017-2018 developmental plan) to understand achievement and progression of students from a course that serves as both a requirement for the CCC EMT and AS EMS program (EMS 2119) to a course that serves exclusively as a requirement for the AS EMS program (capstone course EMS 2661).

5.1 EMS 2119

A drill-down of EMS 2119 results are as follows:

1. During the fall 2018 semester, an enrollment of 73 contributed to scores tallied from 3 of 3 sections of EMS 2119.
2. In a study comparing core exams (Airways & Respiratory, Cardiology, Operations Unit, Medical Unit, Trauma Unit, and OB/Peds Unit), mean scores range from 90% to 95%. The Trauma Exam exhibits the lowest mean score.
3. No dual enrollment sections of the course were run during fall 2018 so no comparison study between dual enrollment and non-dual enrollment could be completed.
4. No online sections of the course were run during the fall 2018 semester, so no comparison study between online and traditional could be completed.
5. In a cross-campus comparison study, the Charlotte campus exhibits the highest mean score in 4 of 6 exams. The Thomas Edison (Lee) campus exhibits the highest in the remaining 2 of 6. The Collier campus consistently exhibits the lowest mean scores in 5 of 6 exams.

5.2 EMS 2661

A drill-down of EMS 2661 results are as follows:

1. During the fall 2018 semester, an enrollment of 40 contributed to scores tallied from 2 of 2 sections of EMS 2661.
2. In a study comparing core exams, in terms of completing tests/certifications in the course, 97% of students complete two or more of the four tests. In total, 25% complete all four.
3. No dual enrollment sections of the course were run during fall 2018 so no comparison study between dual enrollment and non-dual enrollment could be completed.
4. No online sections of the course were run during the fall 2018 semester, so no comparison study between online and traditional could be completed.
5. Since the course was only run on one site, no comparison by site can be completed.

5.3 EMT / EMS PROGRESSION

A drill-down of EMS 2661 results are as follows:

1. An early pilot study sample size of $n = 27$ was available utilizing the most recent cohort of EMS 2661 completers.
2. When comparing achievement across courses (EMS 2119 to EMS 2661), no trends are readily apparent.
3. In an early study investigating the time lag between students completing EMS 2119 and those completing EMS 2661, some information can be gleaned. In total, 59% of those completing EMS 2661 (from an early pilot study sample size of 27) do so two academic years or less since completing EMS 2119. Of the remaining 41% who continue on from EMS 2119, most do so within one additional academic year. Only 15% of those continuing on to EMS 2661 from 2119 take more than three academic years.