

Relationship of Meeting of the EMS-020 Prerequisite and Self-Efficacy with EMS-020 Course Success

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Purpose of Brief

The purpose of this brief is to examine the relationship of meeting the EMS-020 prerequisite and the self-efficacy of EMS-020 students with EMS-020 course success in Fall 2017.

Summary of Findings

EMS-020 Course

- 132 students earned a GOR in EMS-020 in Fall 2017
- 44% of EMS-020 students successfully completed the course in Fall 2017
- 57% (n = 58) of EMS-020 students earned a "W" grade in Fall 2017

EMS-020 Prerequisite

- 56% of the EMS-020 students met the prerequisite in Fall 2017
- Students who did not complete the prerequisite were more likely to successfully complete EMS-020 (48%) than students who completed the prerequisite (41%)

EMS-020 Course Success and Self-Efficacy

- Students who successfully completed EMS-020 were substantially more likely to score higher on the self-efficacy measure (M = 6.3) than students who did not successfully complete EMS-020 (6.1)

Overview

As part of the student learning outcomes (SLO) assessment process, the Crafton Hills College (CHC) Emergency Medical Technician (EMT) Program is examining the effectiveness of meeting the EMS-020 prerequisite with EMS-020 course success in Fall 2017. Moreover, to help identify strategies to increase the EMS-020 course success rate the EMT program also is examining the relationship between self-efficacy and EMS-020 course success. In addition, the Office of Institutional Effectiveness, Research, and Planning (OIERP) is also working with the EMT Program to collect data on the National Registry of EMT (NREMT) CBT Exam Results. Future research will examine the results from the NREMT in relation to EMS-020 course grades.

Possible Implications

There are two possible implications that might help to inform the implementation of the CHC EMT Program. First, the prerequisite for EMS-020 does not appear to be consistently enforced for all students. Accordingly, the CHC Office of Instruction needs to work with TESS and A&R to determine how to consistently implement the prerequisite for all students enrolling in EMS-020. In addition, students not completing the prerequisite were more likely to successfully complete EMS-020 (48%) than students who completed the prerequisite (41%). Consequently, the EMT Program may want to consider removing the prerequisite. A limitation to this finding is that the results were only for one semester and examining three years of data would provide a better indication of the relationship between meeting the prerequisite and successfully completing EMS-020. Another variable to consider is that the research for establishing the EMS-020 prerequisite was initially done with READ-078, which no longer exists. The corresponding course was ENGL-010; however, the curriculum of ENGL-010 may not have reflected the curriculum in READ-078. This may have led to the prerequisite no longer being an effective indicator of EMS-020 course success.

The second implication is that the data suggests the possibility that self-efficacy is related to EMS-020 course success. Students who successfully completed EMS-020 were substantially more likely to score higher on the self-efficacy measure (M = 6.3) than students who did not successfully complete EMS-020 (6.1). A limitation to this finding is that there were only 47 (36%) Fall 2017 EMS-020 students who had completed the self-efficacy questions on the Accuplacer Assessment. As a result, the EMT Program may want to work with the OIERP to begin to assess self-efficacy for incoming EMS-020 students, conduct additional research, and use the information to provide support to students who score lower on self-efficacy.

Methodology

The prerequisite for EMS-020, Emergency Medical Technician, is the completion of ENGL-010 with a “C” grade or higher or eligibility for ENGL-101 as determined through the Crafton Hills College assessment process. Crafton Hills College EMS-020 course success is defined as earning a grade of A, B, C, or P divided by the number of grades on record (GOR): A, B, C, D, F, P, NP, I, or W. The EMT Program uses the following scale to assign grades in the EMS-020 course: 94-100 is an A, 86-93 is a B, and 80-85 is a C.

The EMT program was also interested in learning if there was a relationship between self-efficacy and EMS-020 course success. Self-efficacy measures a student’s expectancy of success and their judgement of their own ability (Garcia-Duncan & McKeachie, 2005; Garcia & Pintrich, 1995; Pintrich et al., 1993). The self-efficacy measurement scale used at Crafton Hills College is a subscale of the Motivated Strategies for Learning Questionnaire (MSLQ). As of April 24, 2013, students who complete the Accuplacer Assessment Test answer eight questions from the MSLQ that measure self-efficacy. The MSLQ has a long history of being used in education to help improve student outcomes and the self-efficacy measure has been found to be one of the strongest predictors of final course grades (Bandalos, Finney, and Geske, 2003; Green, 2000; McKeachie, Lin, & Middleton, 2004; McKenzie, Gow, and Schweitzer, 2004; Pintrich, Smith, Garcia, & McKeachie, 1993).

The effect size statistic was used to indicate the size of the difference on student course success and self-efficacy. Jacob Cohen developed one method of interpreting effect size. Jacob Cohen defined “small,” “medium,” and “large” effect sizes. He explained that an effect size of .20 can be considered small, an effect size of .50 can be considered medium, and an effect size of .80 can be considered large. Research in the social sciences has indicated that a substantial effect is considered meaningful if the effect size is .10 or higher. It is important to mention that the number of students in each group does not influence Effect Size. Whereas, when statistical significance is calculated, the number of students in each group does influence the significance level (i.e. “p” value being lower than .05).

Findings

In Fall 2017, 132 students earned a GOR in EMS-020 (see Table 1). Forty-four percent of students dropped the course after census and prior to the last day to drop, and earned a “W” grade. In addition, 44% of the students successfully completed the EMS-020 course with a “C” grade or better. Consequently, of the 132 students who earned a GOR, 56% did not successfully complete the course by earning a grade of “F” or “W.”

Table 1: Fall 2017 Number and Percent of Grades Earned in EMS-020.

Success	Grade	#	% of Each Grade	% Successful
Percent Successful	A	12	9.1	44%
	B	32	24.2	
	C	14	10.6	
Percent Not Successful	F	16	12.1	56%
	W	58	43.9	
Total		132	100.0	100%

Table 2 illustrates the number and percent of Fall 2017 EMS-020 students who met the prerequisite for EMS-020 either through successfully completing ENGL-010 with a “C” grade or higher or by demonstrating eligibility for ENGL-101 as determined through the Crafton Hills College assessment process. The results indicated that 56% of the Fall 2017 EMS-020 students met the prerequisite for EMS-020. Conversely, 44% (n = 58) students who earned a grade on record did not meet the prerequisite.

Table 2: Number and Percent of Fall 2017 EMS-020 Students who met the Prerequisite by Grade.

Course	# who Met the Prerequisite	GOR	% who Met Prerequisite
A	4	12	33.3%
B	16	32	50.0%
C	10	14	71.4%
F	11	16	68.8%
W	33	58	56.9%
Total	74	132	56.1%

Table 3 shows the relationship between students who met and did not meet the EMS-020 prerequisite on course success. Students who did not meet the prerequisite were more likely to complete EMS-020 (48%) than students who met the prerequisite (41%). This relationship was almost substantial but not statistically significant.

Table 3: Fall 2017 EMS-020 Course Success of Students who met and Did Not Meet the Prerequisite for EMS-020.

Course	Did Not Meet the Prerequisite			Met the Prerequisite			Statistically Significant*	Substantially Different*
	#	N	%	#	N	%		
EMS-020	28	58	48.3	30	74	40.5	No	No

*P < .05; ES = .16.

The relationship between students who successfully and did not successfully complete EMS-020 on self-efficacy is illustrated in Table 4. Students who successfully completed EMS-020 were substantially more likely to score higher on the self-efficacy measure (M = 6.3) than students who did not successfully complete EMS-020 (6.1). This relationship was not statistically significant. A limitation to this finding is that there were only 47 Fall 2017 EMS-020 students who had completed the self-efficacy questions on the Accuplacer Assessment.

Table 4: Fall 2017 EMS-020 Course Success of Students who met and Did Not Meet the Prerequisite for EMS-020.

Self-Efficacy	Successfully Completed EMS-020						Statistically Significant*	Substantially Different*
	No			Yes				
	N	Mean	SD	N	Mean	SD		
Average Self-Efficacy	27	6.1	.613	20	6.3	.649	No	Yes

*P < .05; ES = .42.

References

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