Assessing Core Competencies: Results of Quantitative Literacy & Reasoning Assessments

Graduating Seniors
2019 Fañomnåkan

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Quantitative Literacy and Reasoning Assessment Results Highlights

2019 Fañomnåkan

The Quantitative Literacy and Reasoning Assessment (QLRA), an online multiple-choice test, developed by Dr. Eric Gaze at Bowdoin College is a tool for assessing quantitative literacy among US four-year colleges and universities. The University's Mathematics Department began using this instrument in 100 and 400 level Math courses since 2014. The University Assessment Committee adopted the QLRA in 2017 as the Institutional Instrument for Institutional-Level assessment.
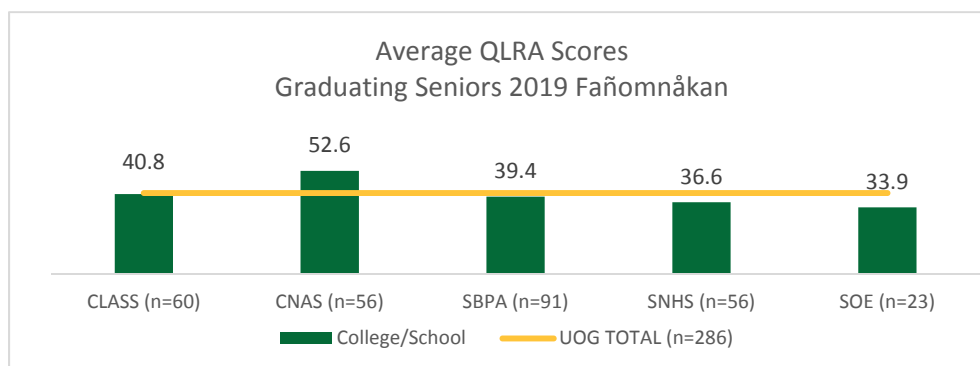
Possible scores for this assessment range from 0% through 100%. Of the 286 graduating seniors who took the assessment across all disciplines, the average score is **41.3%.** This score is a 3-percentage point increase from when the test was first given institution wide in Fañomnåkan 2017.

To serve as a factor in the analysis of results, students were asked if they took the following courses at UOG: MA-085: Fundamentals of Math, MA-110: Basic Mathematical Applications, and MA-151: Introductory Statistics.

49% of seniors who indicated they had taken MA-085 received an average score of 36.1% while the students who did not take MA-085 scored an average of 46.3%. While this course is not required, students who get placed into developmental math must pass this course before proceeding with MA-110 or higher.

58% of seniors indicated they took MA-110 and they received an average score of 38.2%. The 42% who did not take MA-110 received an average score of 45.6%. Although MA-110 is a general education requirement, students may opt to take an equivalent course or higher.

51% of seniors had taken MA-151 and their average score was 39.4%. Those who did not take the course received an average of 43.2%. It is interesting to note that the average score of students who took Introductory Statistics were slightly lower than those who did not take the course.

Average QLRA Scores
Graduating Seniors 2019 Fañomnåkan

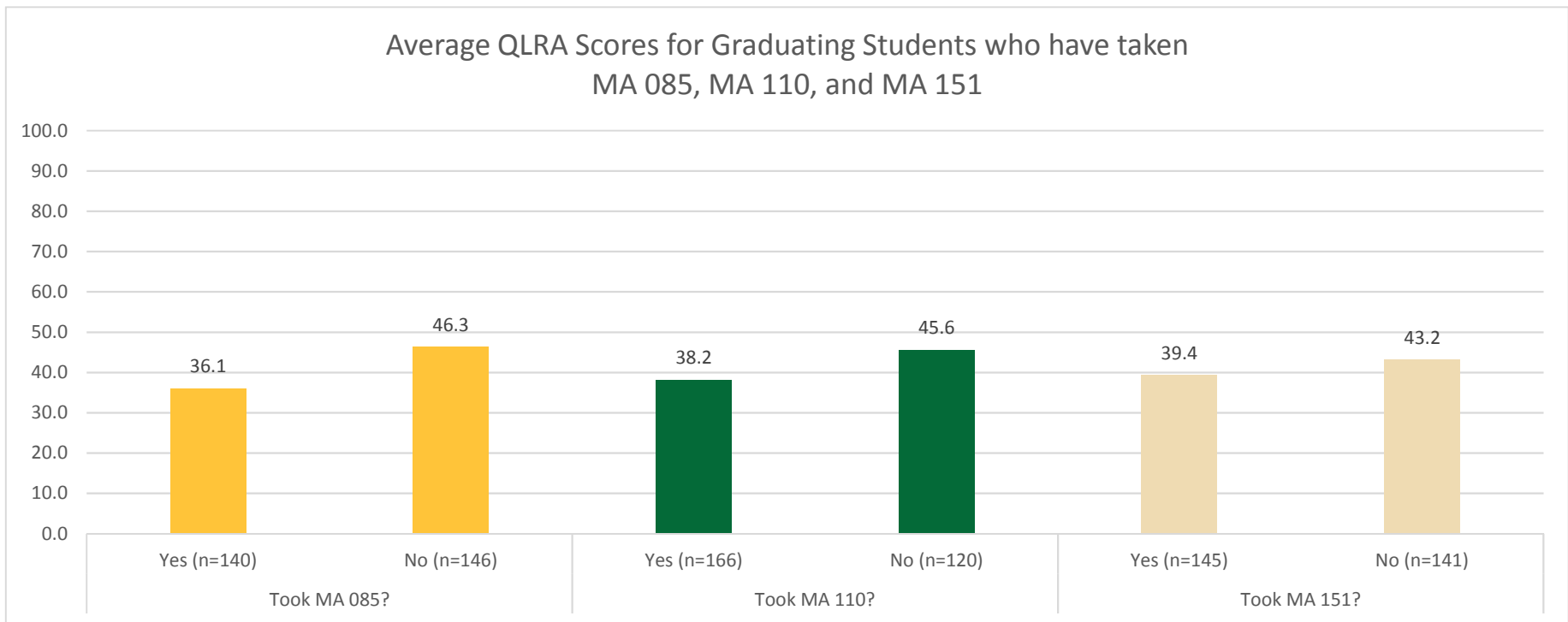| CLASS (n=60)	CNAS (n=56)	SBPA (n=91)	SNHS (n=56)	SOE (n=23)
40.8	52.6	39.4	36.6	33.9

College/School   UOG TOTAL (n=286)

This graph displays the average scores of students in each college/school with the UOG average trendline at 41.3%.

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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Course for Graduating Seniors

	Total	Took MA 085?		Took MA 110?		Took MA 151?	
		Yes	No	Yes	No	Yes	No
Count	286	140	146	166	120	145	141
Percent	100%	49%	51%	58%	42%	51%	49%
Avg Grade	41.3	36.1	46.3	38.2	45.6	39.4	43.2
Std Dev	17.9	15.0	19.1	16.4	19.1	17.0	18.7

Average QLRA Scores for Graduating Students who have taken MA 085, MA 110, and MA 151

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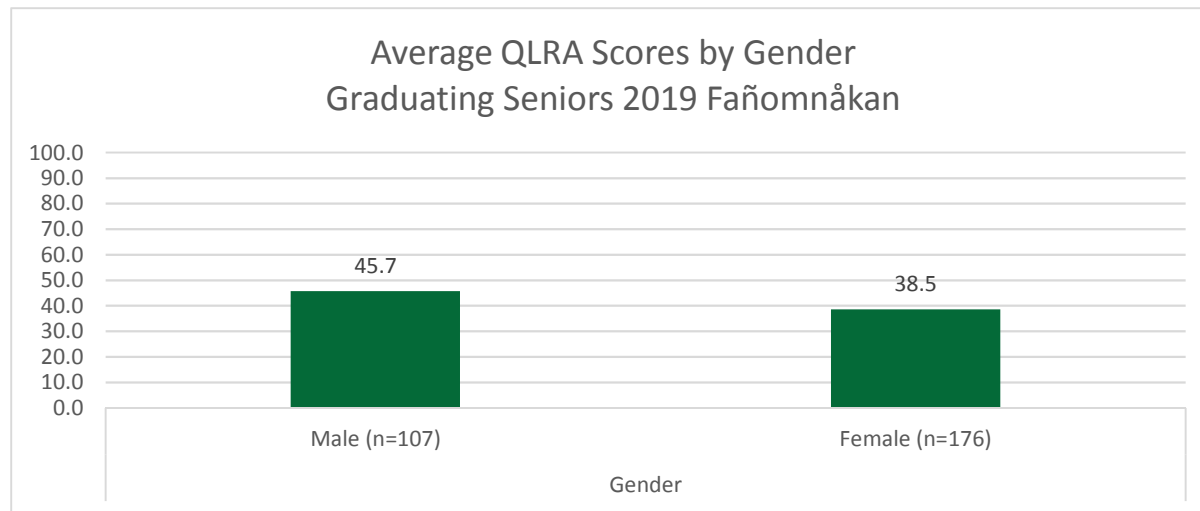ACADEMIC & STUDENT AFFAIRS
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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Gender for Graduating Seniors

	Total	Gender	
		Male	Female
Count	286	107	176
Percent	100%	37%	62%
Avg Grade	41.3	45.7	38.5
Std Dev	17.9	20.1	16.1

Three students declined to specify gender

Average QLRA Scores by Gender
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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by College

MAJOR by College	AVERAGE GRADE	STDEV
CLASS (n=60)	40.8	16.1
CNAS (n=56)	52.6	18.9
SBPA (n=91)	39.4	17.6
SNHS (n=56)	36.6	16.3
SOE (n=23)	33.9	14.3
UOG TOTAL (n=286)	41.3	17.9

Average QLRA Scores
Graduating Seniors 2019 Fañomnåkan
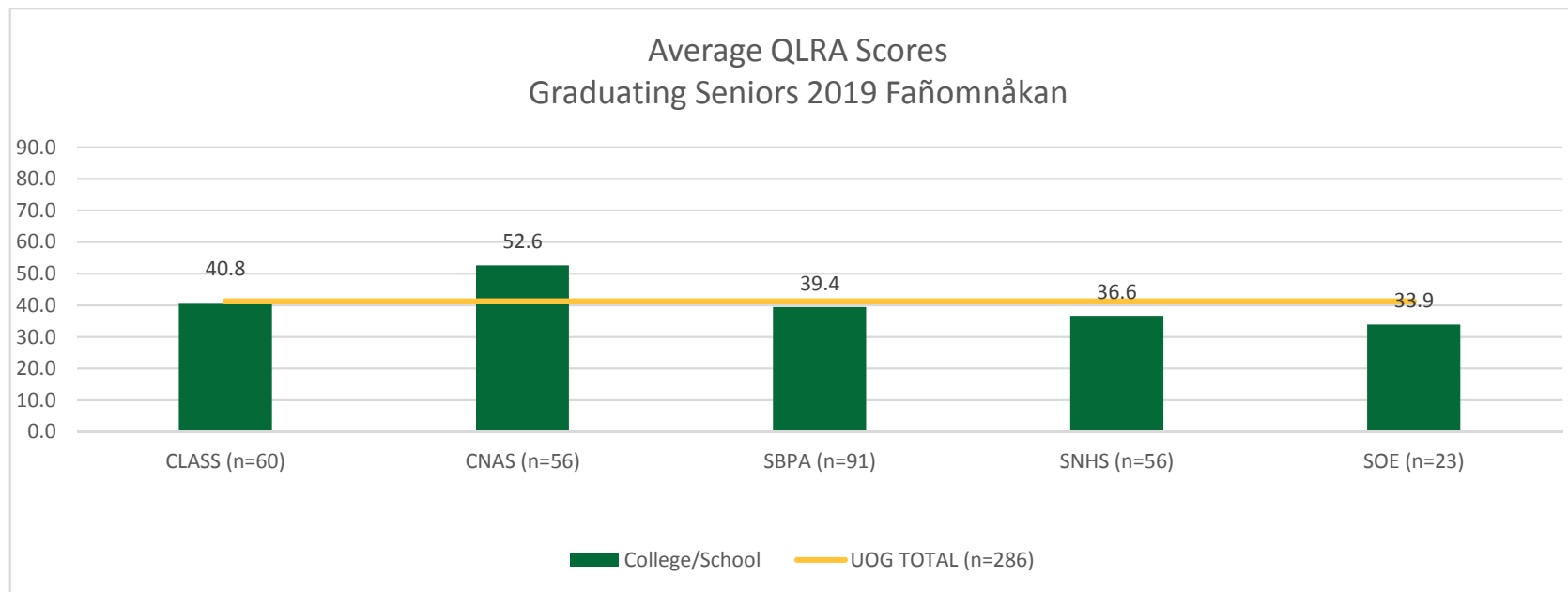
Average time spent on test: 36 minutes (*55 minute time limit*)

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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Major - CLASS

MAJOR	AVERAGE GRADE	STDEV
COMMUNICATION STUDIES (n=8)	46.3	13.0
ENGLISH (UNDERGRAD) (n=14)	42.5	21.7
FINE ARTS/ART (n=13)	35.8	11.7
FINE ARTS/MUSIC (n=2)	*	
FINE ARTS/THEATER (n=1)	*	
HISTORY (n=4)	42.5	2.9
JAPANESE STUDIES (n=1)	*	
Pacific Asian Studies Program (n=2)	*	
POLITICAL SCIENCE (n=3)	38.3	23.6
PSYCHOLOGY (n=11)	38.2	14.7
SOCIOLOGY (n=1)	*	
CLASS (n=60)	40.8	16.1
UOG TOTAL (n=286)	41.3	17.9
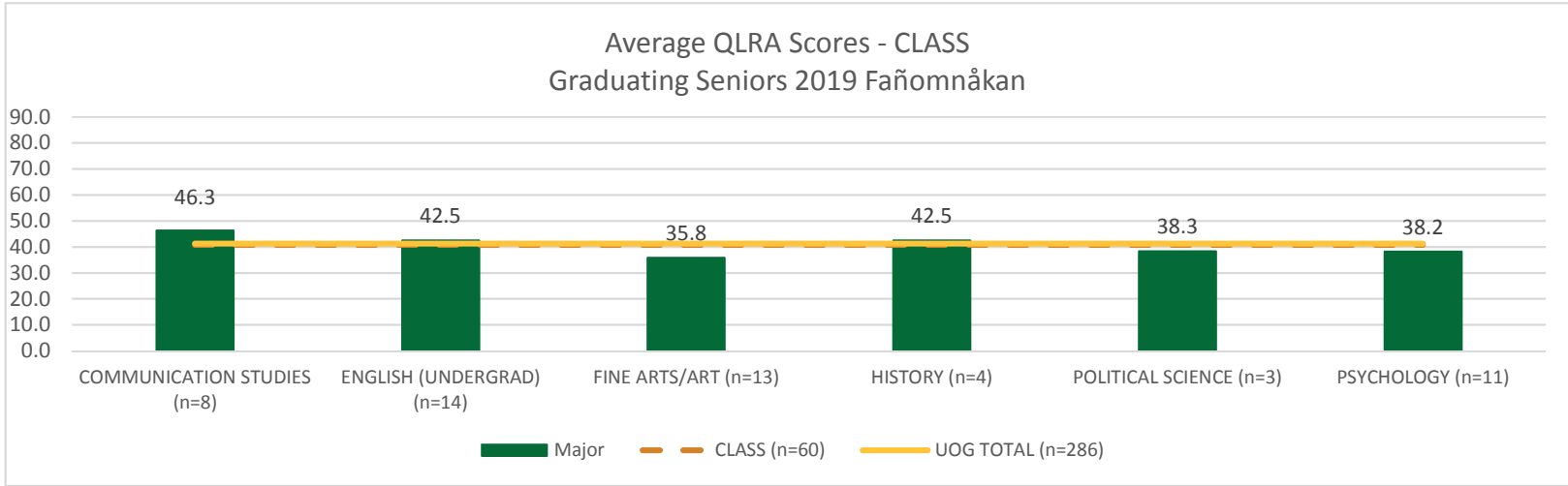
Average QLRA Scores - CLASS
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*Not enough data to report

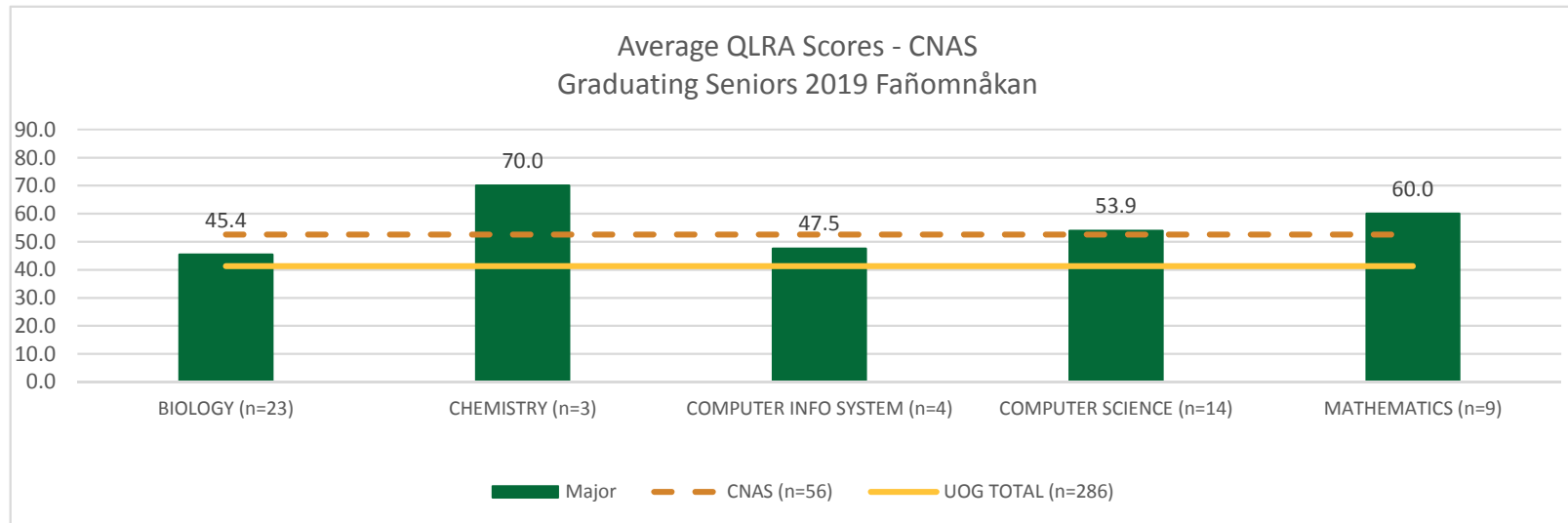**UNIVERSITY OF GUAM**
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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Major - CNAS

MAJOR	AVERAGE GRADE	STDEV
AGRICULTURE AND LIFE SCIENCES (n=1)	*	
BIOLOGY (n=23)	45.4	17.3
CHEMISTRY (n=3)	70.0	18.0
COMPUTER INFO SYSTEM (n=4)	47.5	15.5
COMPUTER SCIENCE (n=14)	53.9	15.3
MATHEMATICS (n=9)	60.0	25.2
TROPICAL AGRICULTURE RESEARCH (n=2)	*	
CNAS (n=56)	52.6	18.9
UOG TOTAL (n=286)	41.3	17.9

Average QLRA Scores - CNAS
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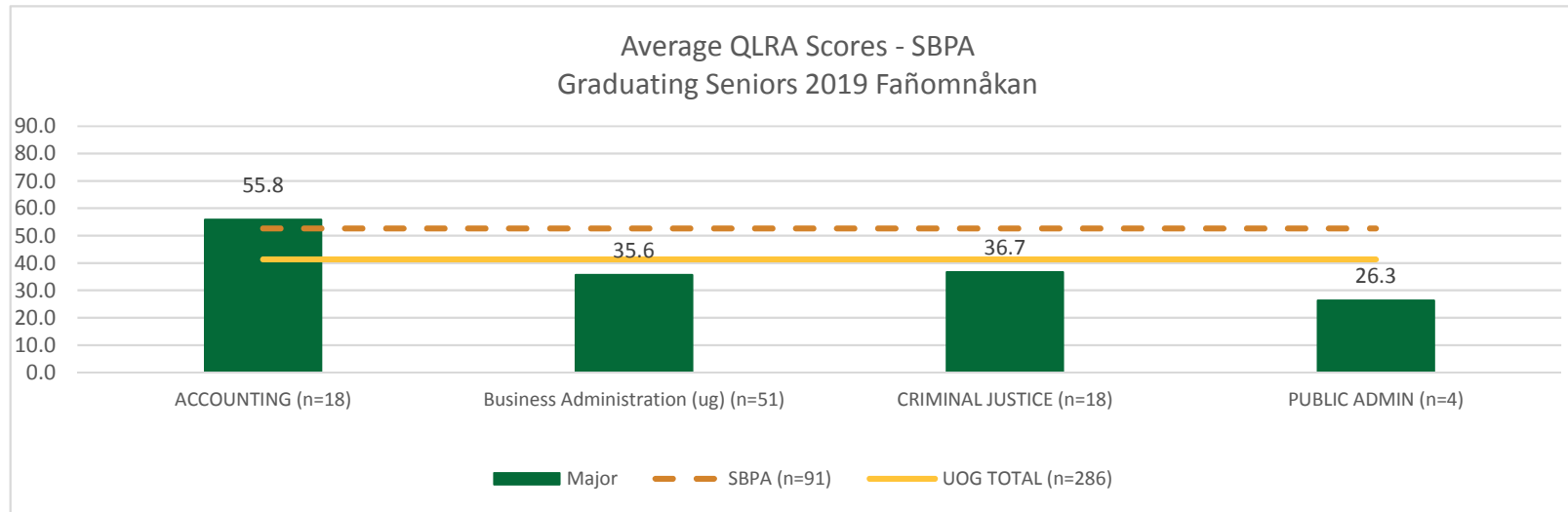
2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Major - SBPA

MAJOR	AVERAGE GRADE	STDEV
ACCOUNTING (n=18)	55.8	15.4
Business Administration (ug) (n=51)	35.6	16.2
CRIMINAL JUSTICE (n=18)	36.7	15.0
PUBLIC ADMIN (n=4)	26.3	10.3
SBPA (n=91)	39.4	17.6
UOG TOTAL (n=286)	41.3	17.9

Average QLRA Scores - SBPA
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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Major - SNHS

MAJOR	AVERAGE GRADE	STDEV
HEALTH SCIENCES (n=4)	41.3	11.1
NURSING (n=31)	42.3	16.8
SOCIAL WORK (n=21)	27.4	12.1
SNHS (n=56)	36.6	16.3
UOG TOTAL (n=286)	41.3	17.9
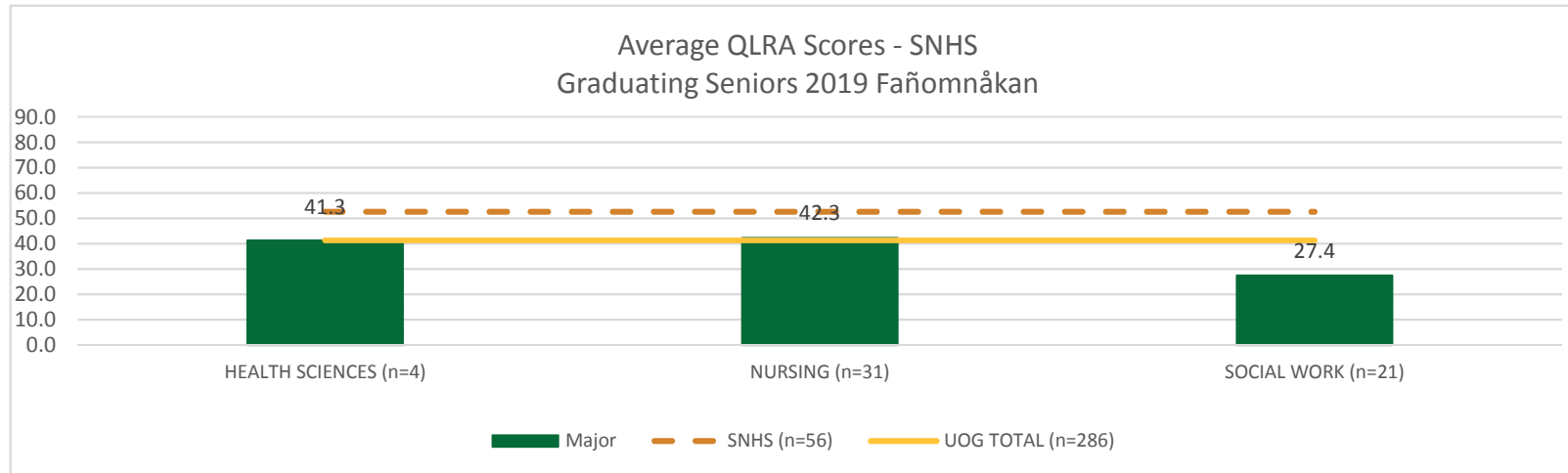
Average QLRA Scores - SNHS
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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Average Scores by Major - SOE

MAJOR	AVERAGE GRADE	STDEV
CHAMORU LANG ELED (n=1)	*	
EARLY CHILDHOOD (n=5)	33.0	8.4
ELEMENTARY EDUCATION (n=12)	30.8	13.1
GEN SCIENCE, SEC ED (n=1)	*	
PHYSICAL EDUC/ SCHOOL HEALTH (n=1)	*	
SECONDARY EDUCATION (n=1)	*	
SPECIAL EDUCATION (n=2)	*	21.2
SOE (n=23)	33.9	14.3
UOG TOTAL (n=286)	41.3	17.9
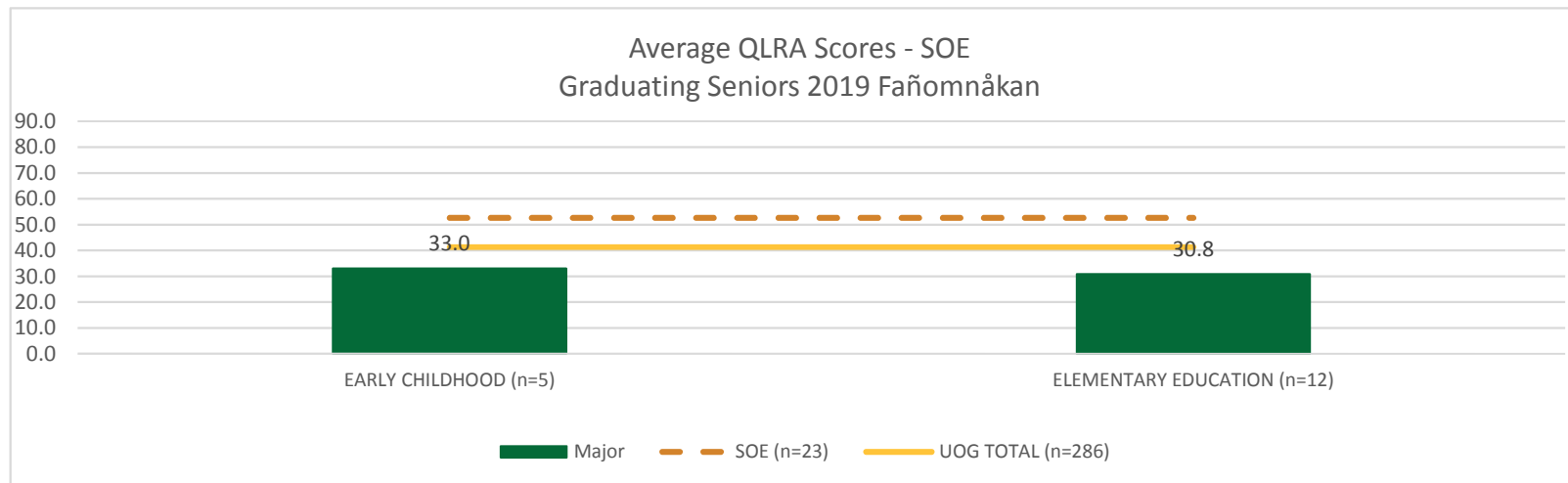
Average QLRA Scores - SOE
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2019 Fañomnåkan Quantitative Literacy and Reasoning Assessment Math Attitudes - Indirect Assessment

Question	Response	Count	Percent
Numerical information is very useful in everyday life	Strongly Agree	190	66%
Numbers are not necessary for most situations	Strongly Disagree	65	23%
Quantitative information is vital for accurate decisions	Strongly Agree	148	52%
Understanding numbers is as important in daily life as reading and writing	Strongly Agree	210	73%
It is a waste of time to learn information containing a lot of numbers	Strongly Disagree	174	61%

Relationship between Math Attitudes and QLRA Test Score

$y = 0.5385x + 29.764$
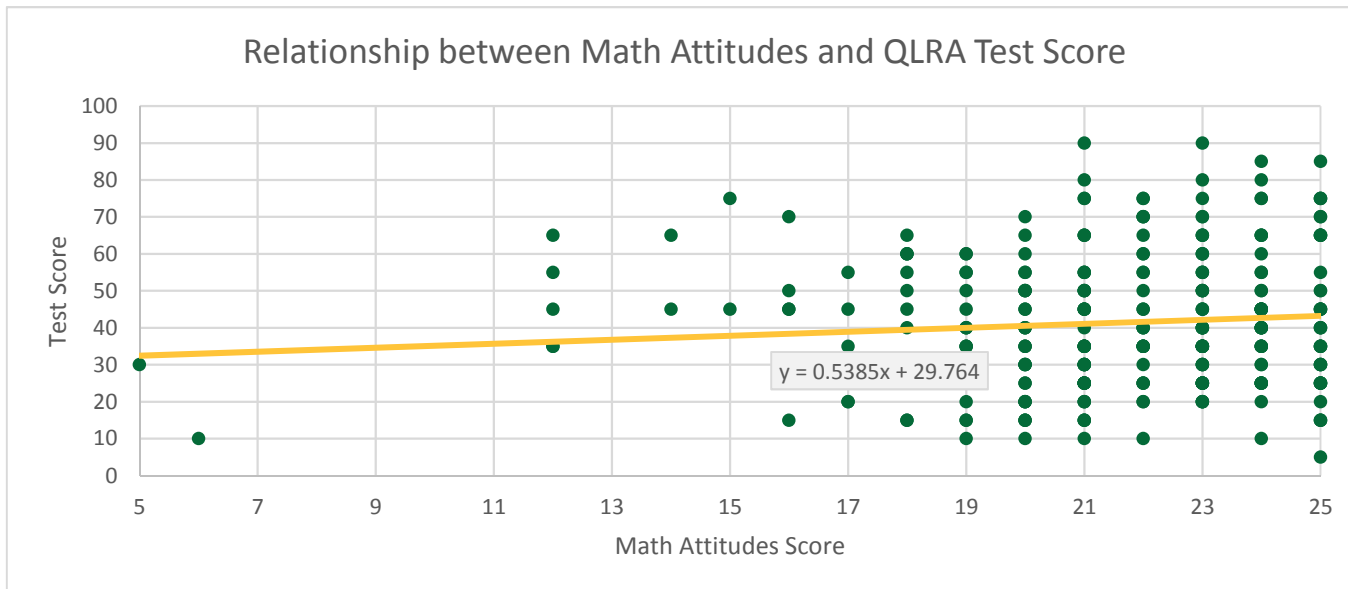
Higher Math Attitudes Scores correspond to more positive attitudes towards Math.