

# Spring 2017 College Algebra Assessment

Results and Observations

# Competency Levels

- Level 1 – Beginning
- Level 2 – Developing
- Level 3 – Competent
- Level 4 - Accomplished

# Critical Thinking

- Comprehending data/information
- Analyzing data
- Developing a viable solution plan
- Drawing well supported conclusions (\*)

# Quantitative Reasoning

- Classifying and utilizing facts and formulas correctly
- Constructing a mathematical model
- Solving using appropriate procedures
- Drawing well supported conclusions (\*)

# Learning Outcomes and Expected Performance (%)

- Students will be able effectively analyze, evaluate, synthesize, and apply information and ideas from diverse sources and disciplines.
- Students will be able to demonstrate quantitative reasoning.
- 70% or more will earn a grade of 75% or higher (scoring three or more on a scale of four)



# Details

- **250** students randomly selected from all 5 campuses
  - Stratified by campus, time of day, full-time/part-time instructor
- **229** artifacts returned (92%)
  - **158** completed artifacts (scored)
  - **16** attended but left blank (Compared to 42 spring '16)
  - **24** students withdrew or did not take the final exam
  - **21** artifacts were not submitted by 8 faculty members
  - **31** artifacts had the old assessment question
- **13** faculty members participated in artifact scoring session
  - Most campuses represented (3 out of 5)

# Spring 2017 Holistic Scores

## Quantitative Reasoning

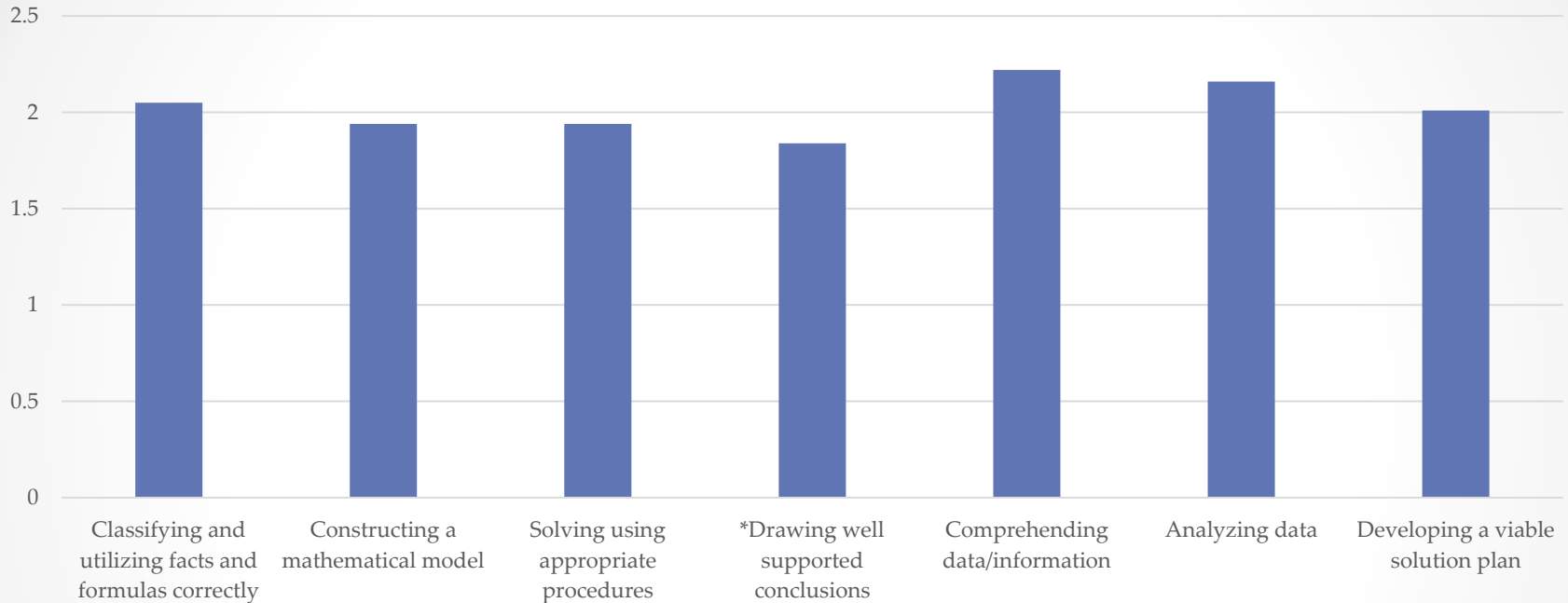
- Beginning: 58%
- Developing: 13%
- Competent: 6%
- Accomplished: 23%

## Critical Thinking

- Beginning: 53%
- Developing: 15%
- Competent: 12%
- Accomplished: 20%

# Statistical Data per Indicator

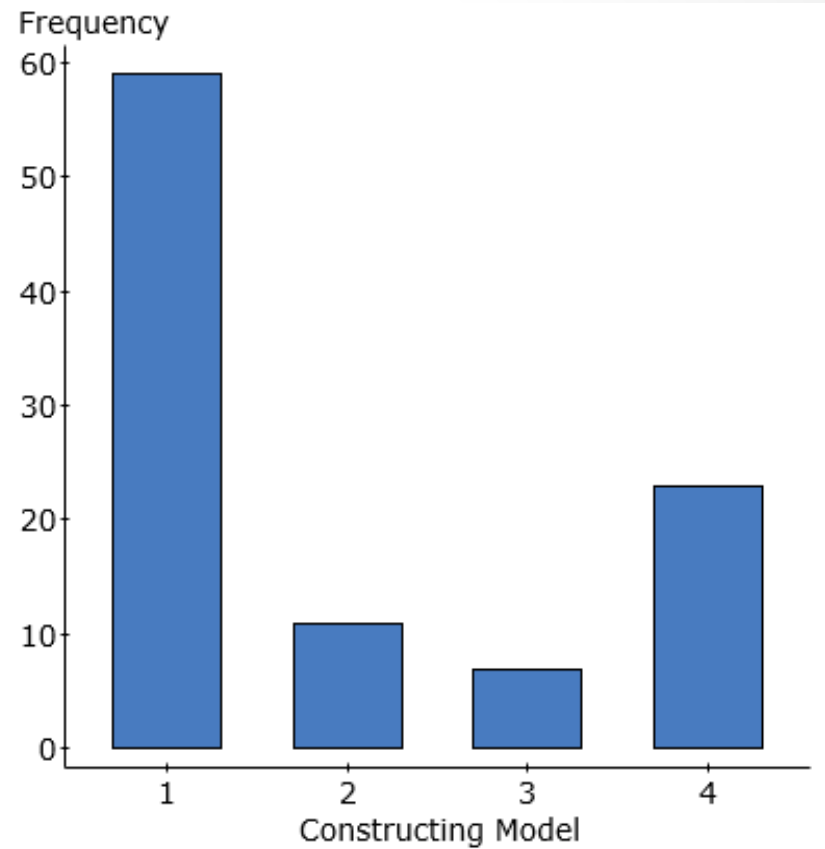
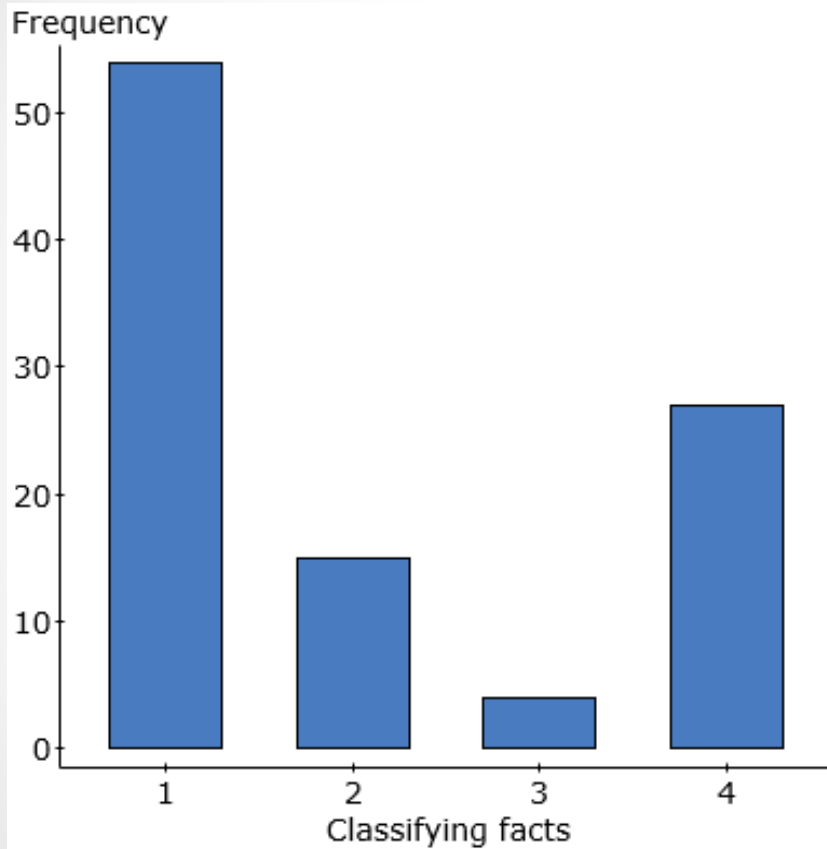
Average



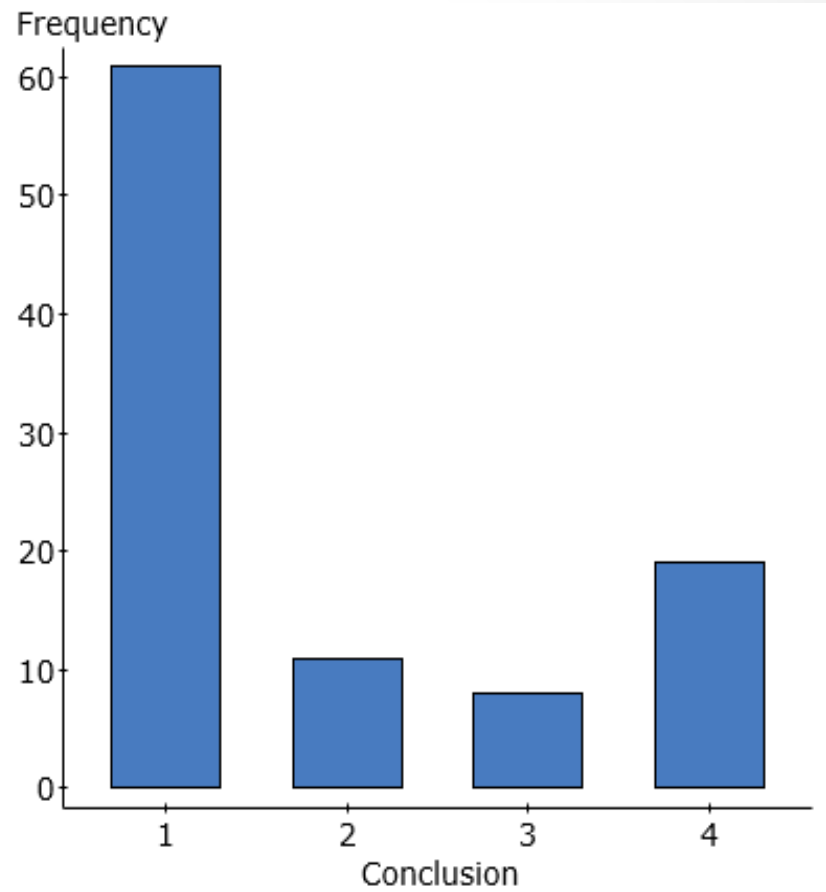
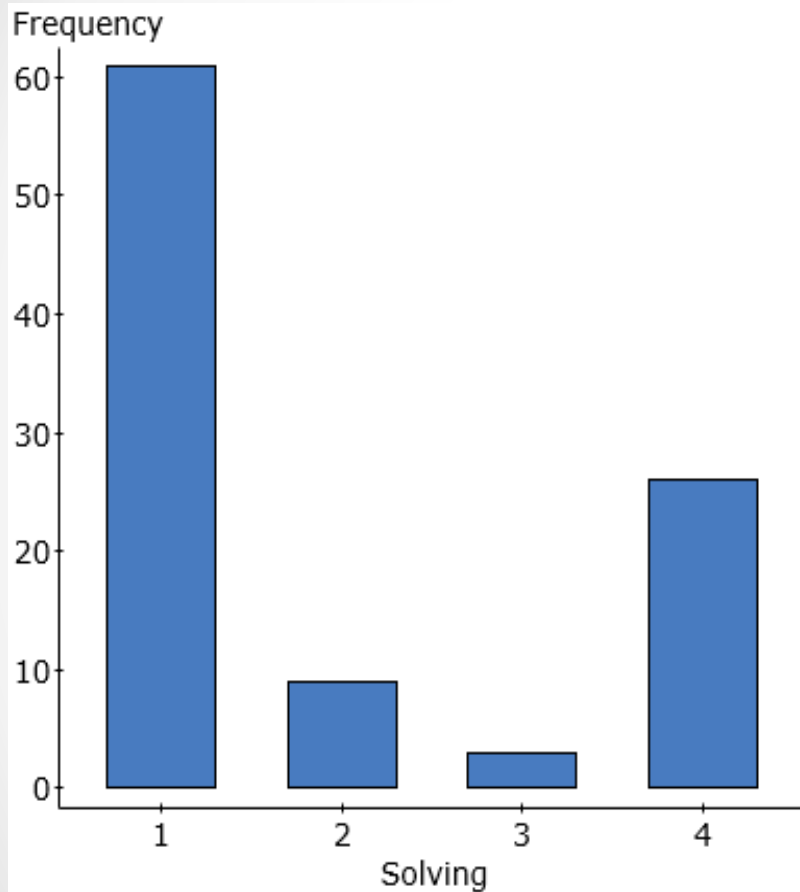
Performance Indicators	Average	STD DEV	Median
Classifying and utilizing facts and formulas correctly	2.05	1.29	1.00
Constructing a mathematical model	1.94	1.25	1
Solving using appropriate procedures	1.94	1.3	1
*Drawing well supported conclusions	1.84	1.17	1
Comprehending data/information	2.22	1.31	2
Analyzing data	2.16	1.21	2
Developing a viable solution plan	2.01	1.27	1



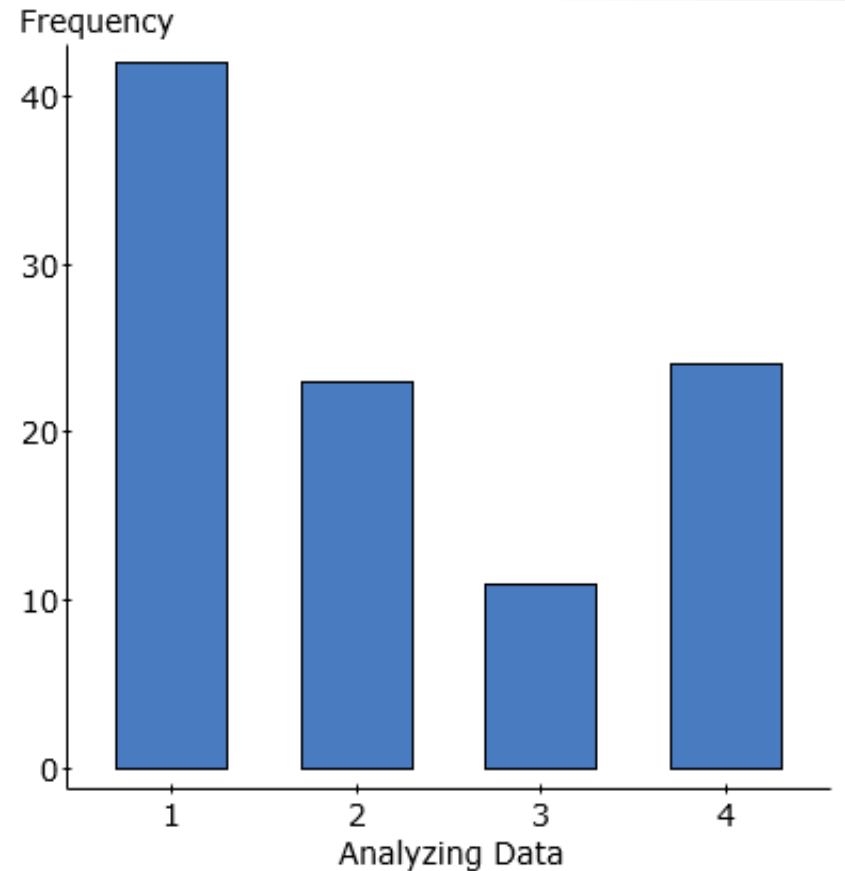
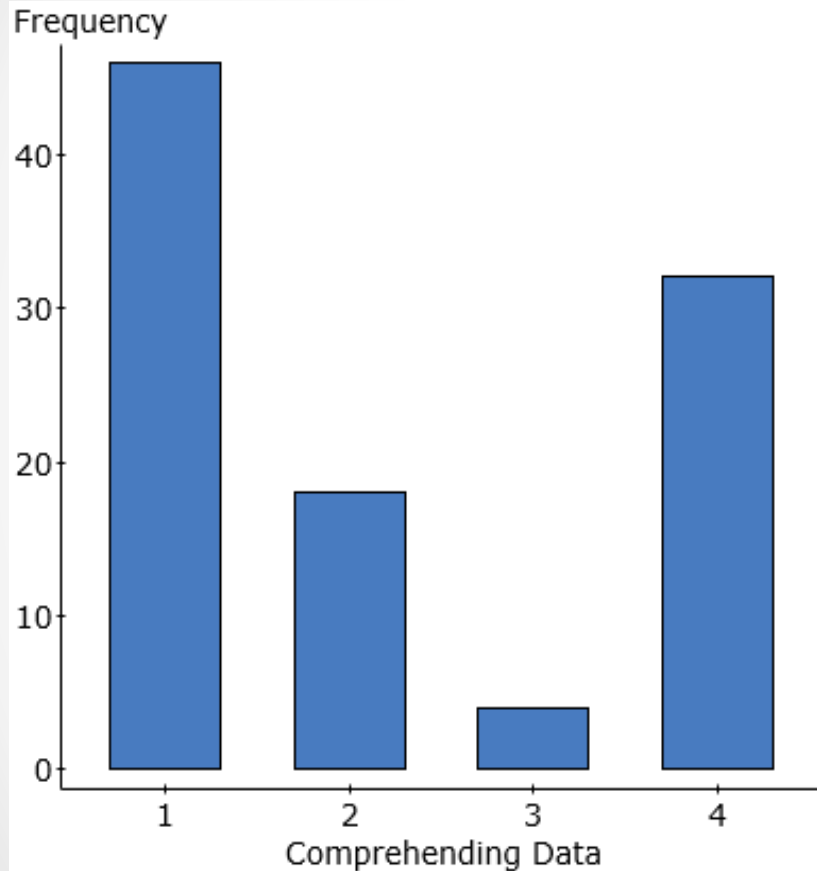
# Frequency Histograms



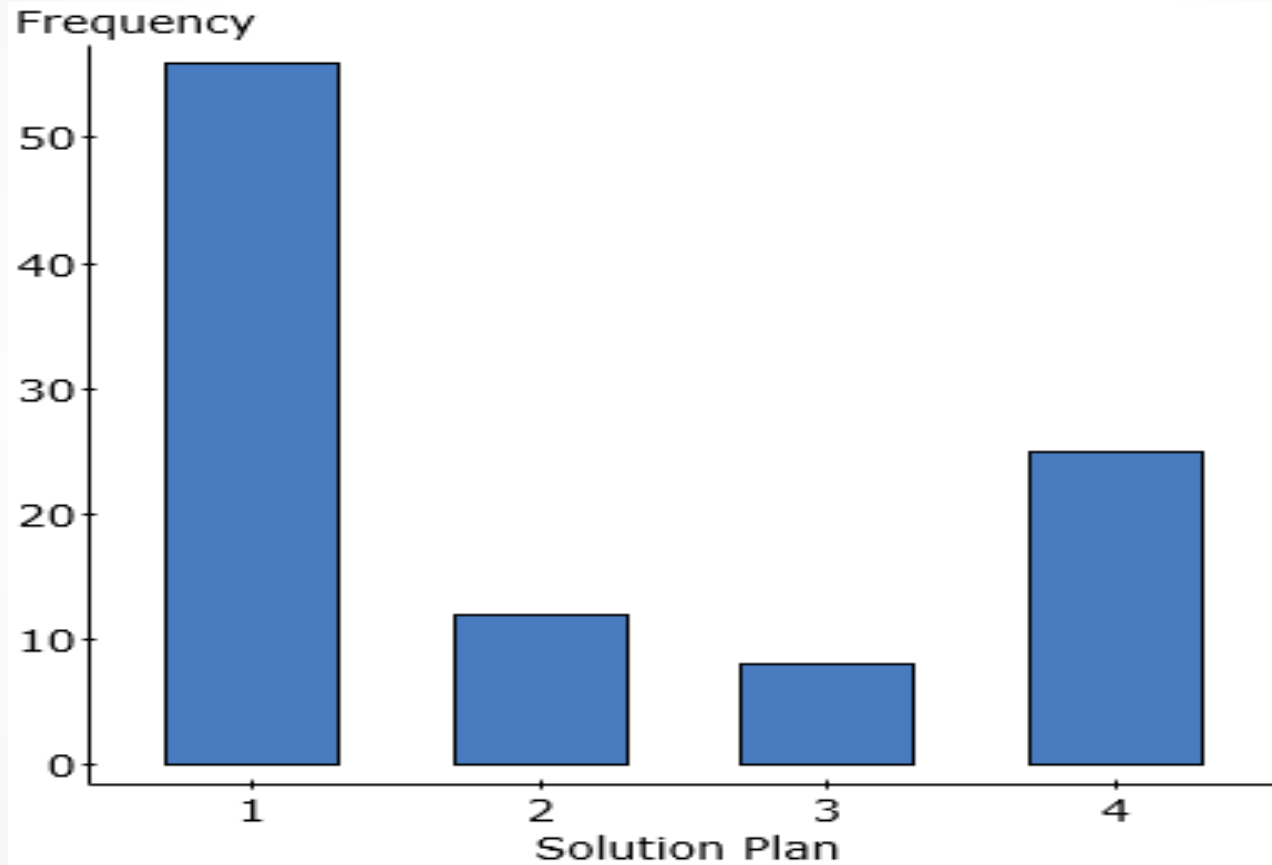
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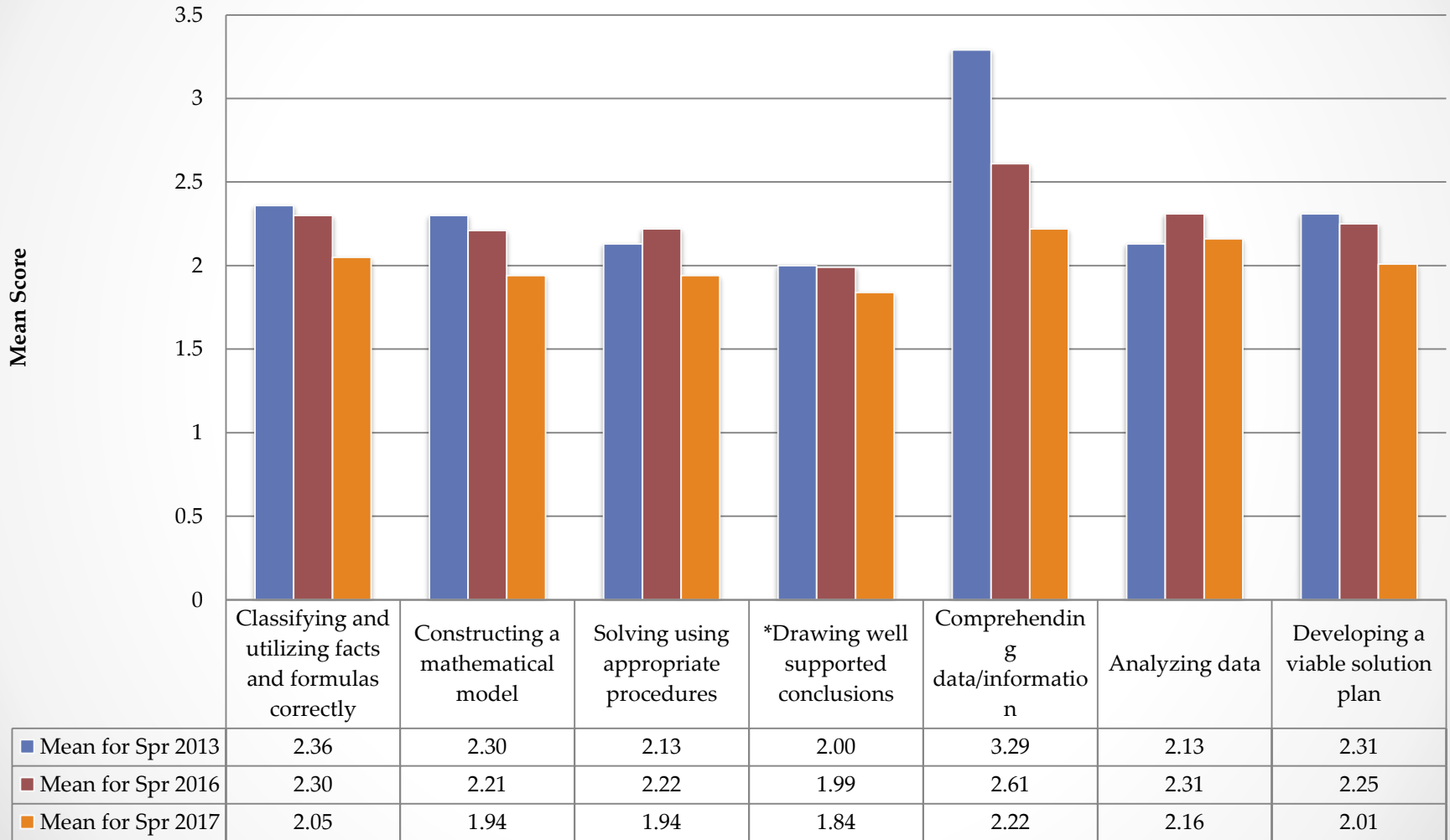
# Frequency Histograms



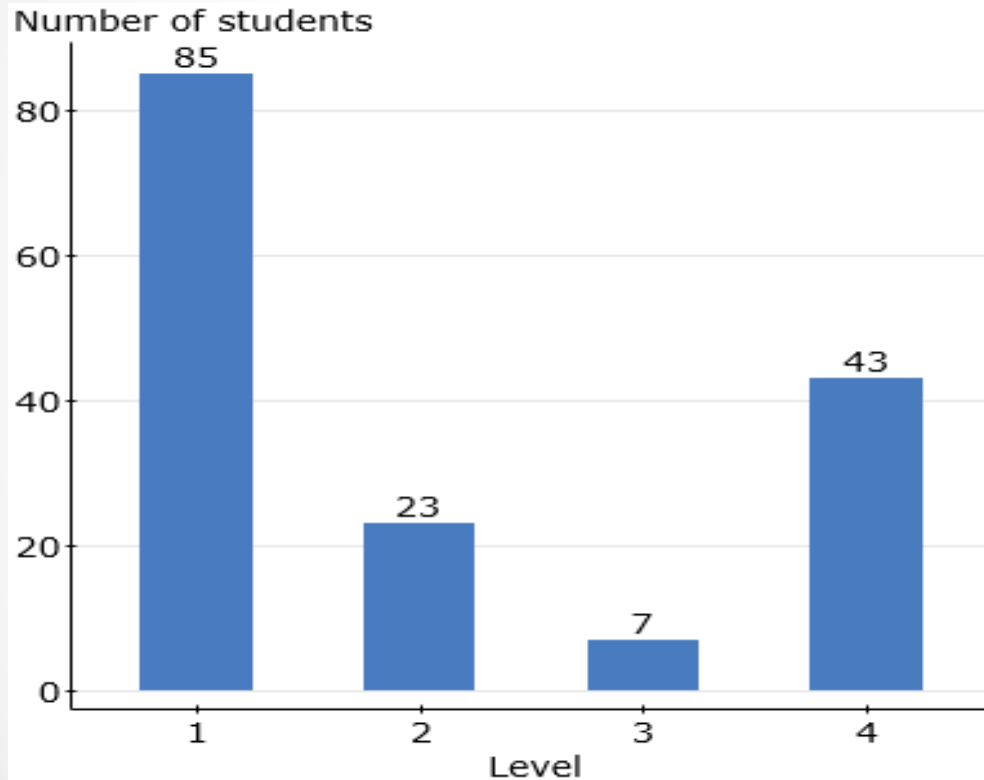
# Comparison of Results

Performance Indicators	Mean			Standard Deviation		
	Spring 2013	Spring 2016	Spring 2017	Spring 2013	Spring 2016	Spring 2017
Classifying and utilizing facts and formulas correctly	2.36	2.30	2.05	1.35	1.38	1.29
Constructing a mathematical model	2.30	2.21	1.94	1.22	1.35	1.25
Solving using appropriate procedures	2.13	2.22	1.94	1.18	1.38	1.3
*Drawing well supported conclusions	2.00	1.99	1.84	1.17	1.24	1.17
Comprehending data/information	3.29	2.61	2.22	0.92	1.23	1.31
Analyzing data	2.13	2.31	2.16	1.13	1.33	1.21
Developing a viable solution plan	2.31	2.25	2.01	1.23	1.35	1.27

## Comparison of Spring 2017 to previous results from Spring 2013 and 2016



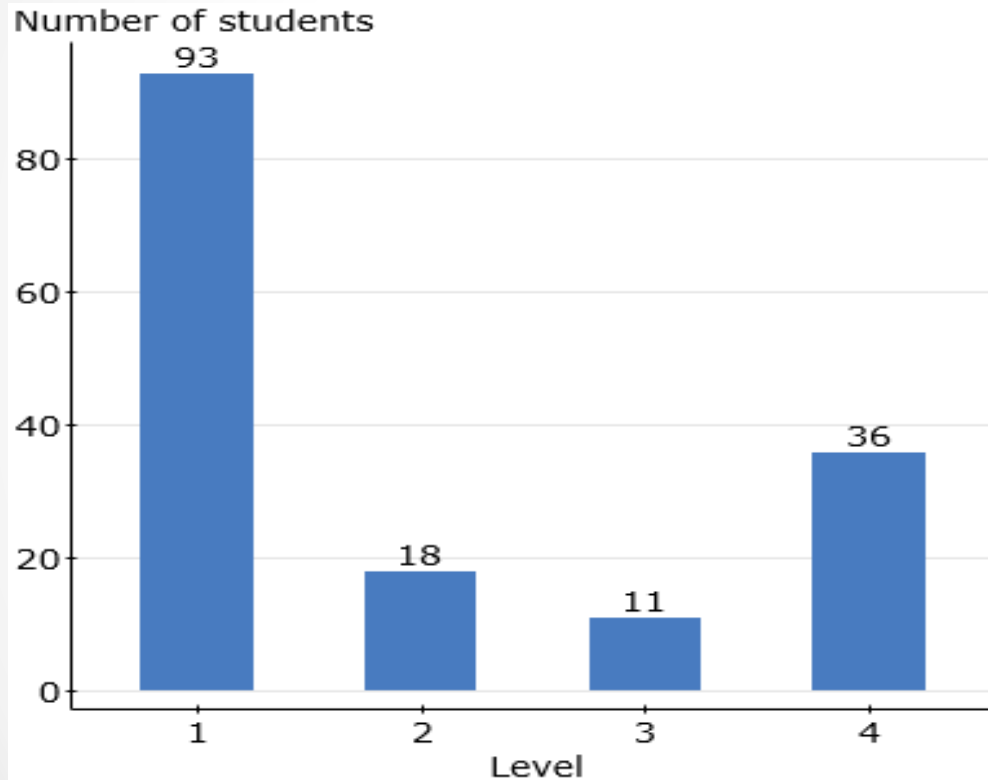
# QR1: Classifying and Utilizing Facts and Formula Correctly



Level	# of students	%
1	85	54%
2	23	15%
3	7	4%
4	43	27%

50 students, 31%, scored a 3+

# QR2: Constructing a Mathematical Model

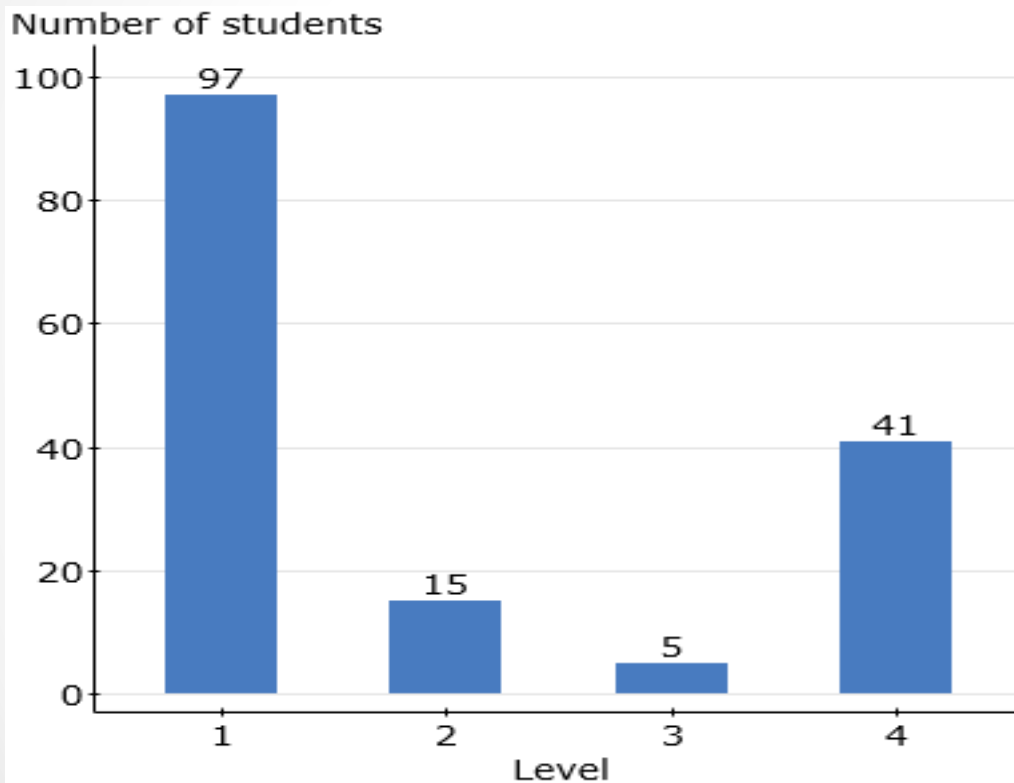


Level	# of students	%
1	93	59%
2	18	11%
3	11	7%
4	36	23%

47 students, 30%, scored a 3+



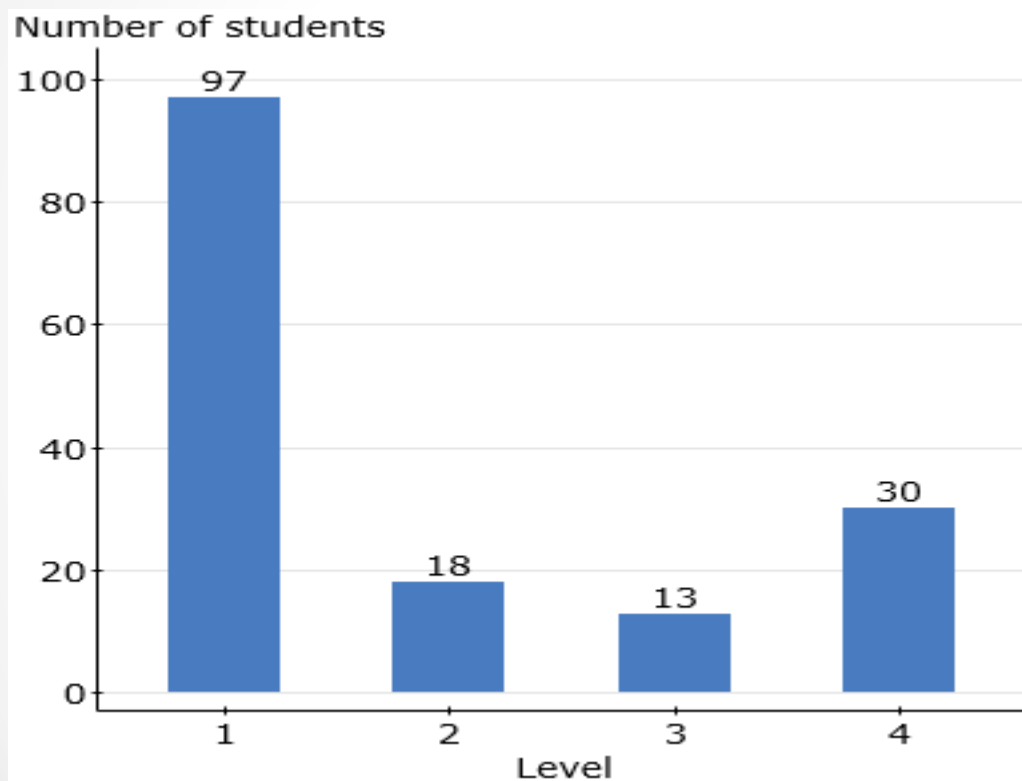
# QR3: Solving Using Appropriate Procedures



Level	# of students	%
1	97	61%
2	15	9%
3	5	3%
4	41	26%

46 students, 29%, scored a 3+

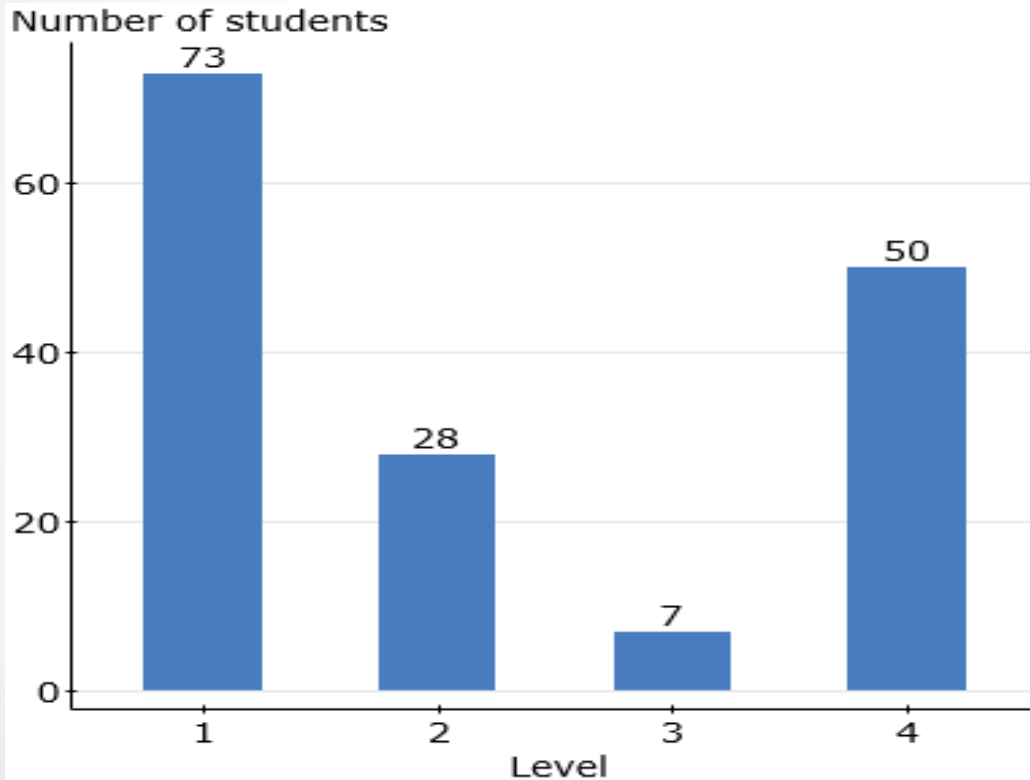
# QR/CT4: Drawing Well Supported Conclusions



Level	# of students	%
1	97	61%
2	18	11%
3	13	8%
4	30	19%

43 students, 27%, scored a 3+

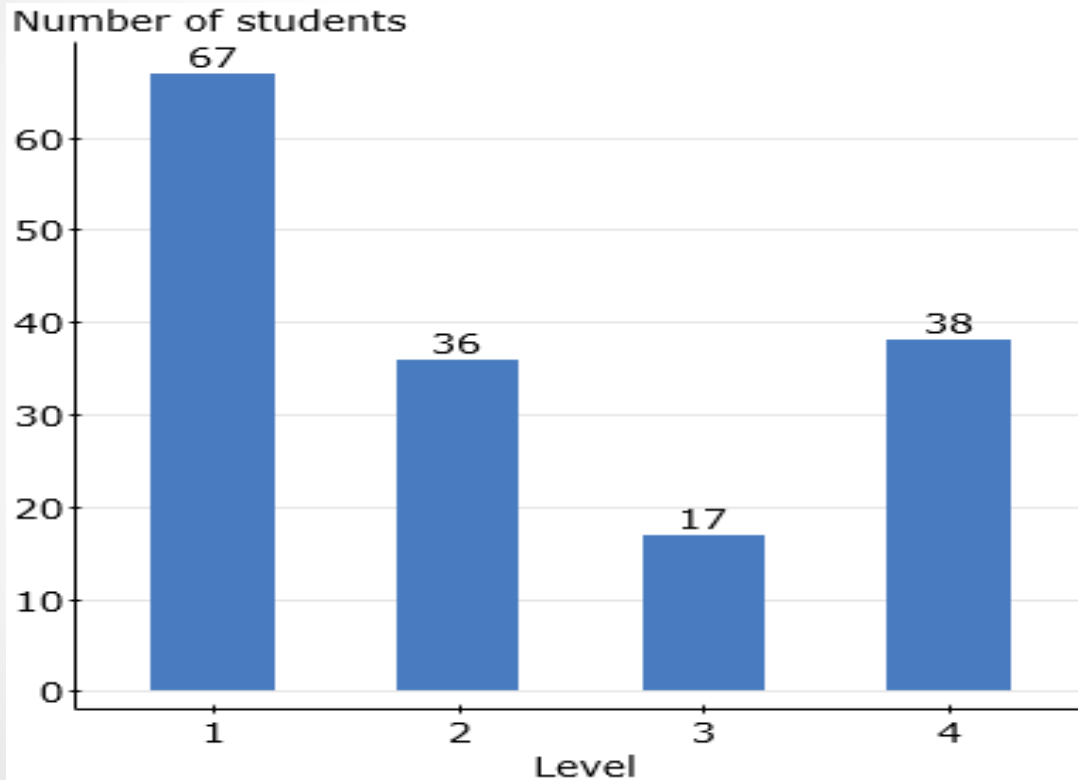
# CT1: Comprehending Data/Information



Level	# of students	%
1	73	46%
2	28	18%
3	7	4%
4	50	32%

57 students, 36%, scored a 3+

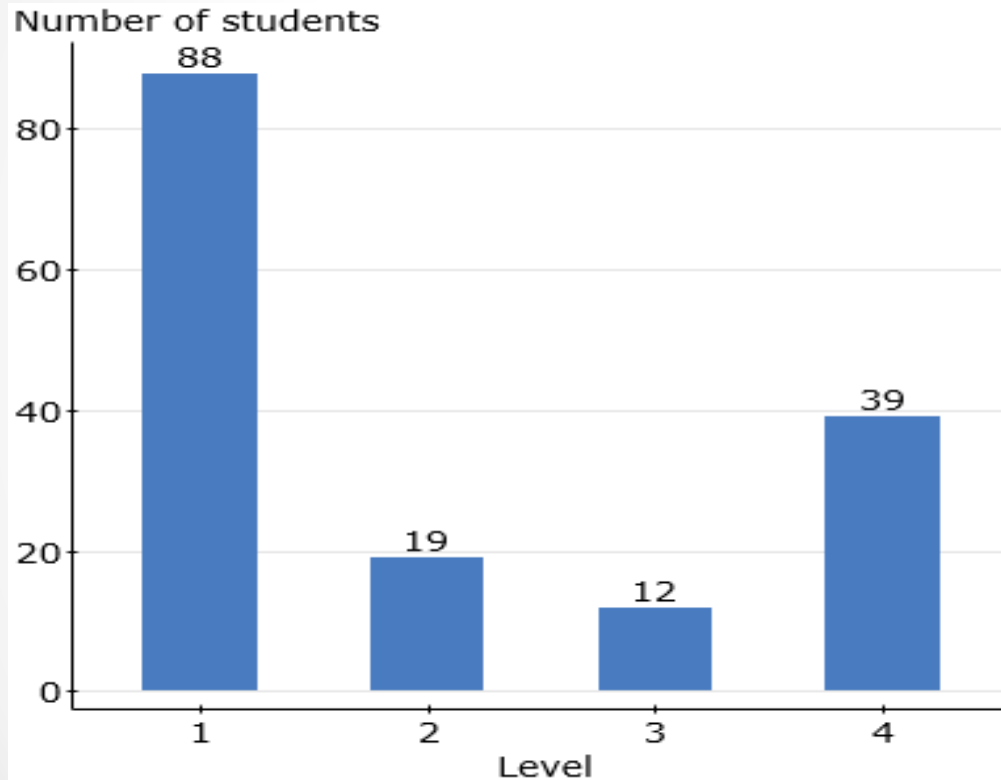
# CT2: Analyzing Data



Level	# of students	%
1	67	42%
2	36	23%
3	17	11%
4	38	24%

55 students, 35%, scored a 3+

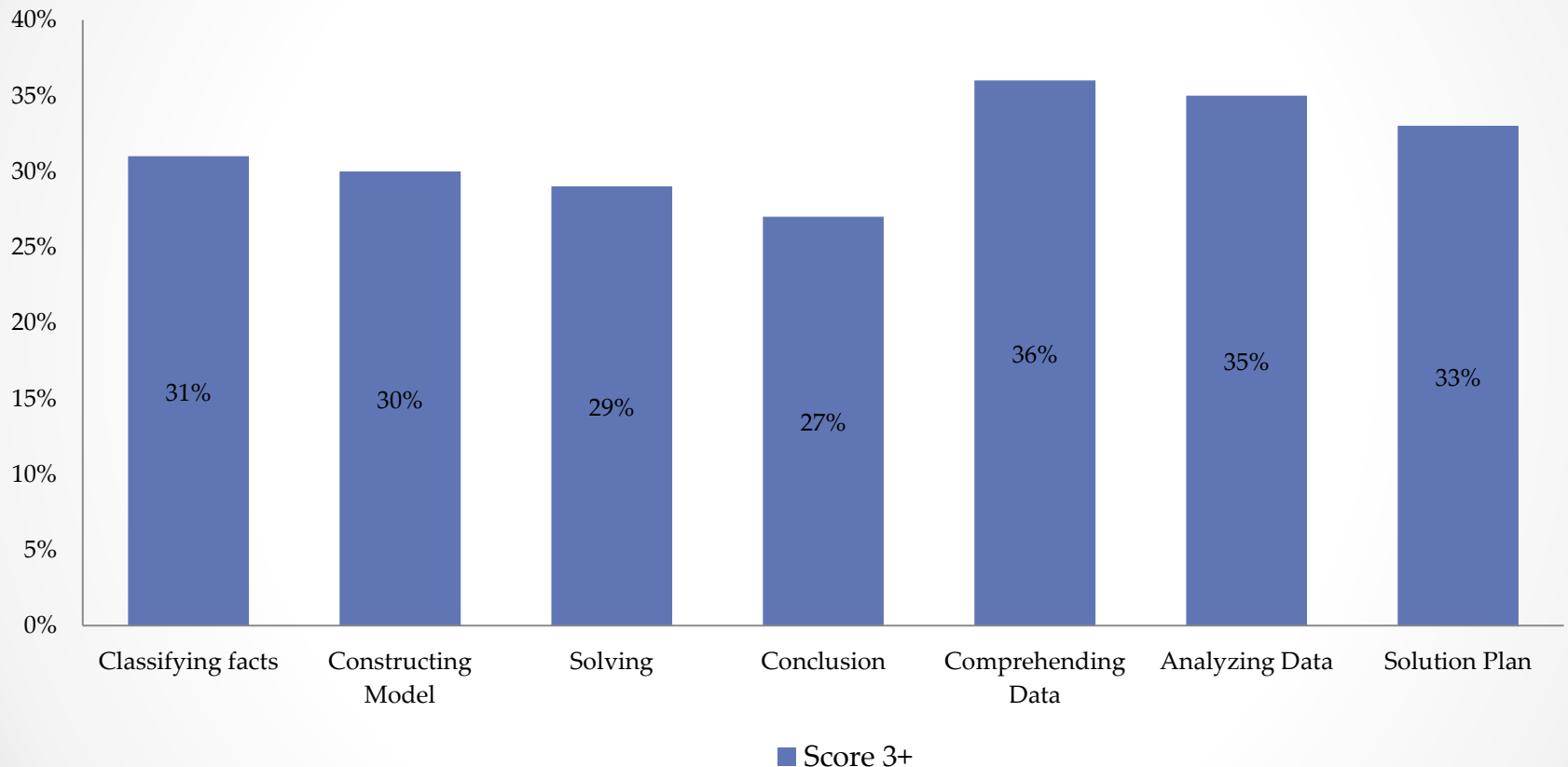
# CT3: Developing a Viable Solution



Level	# of students	%
1	88	56%
2	19	12%
3	12	8%
4	39	25%

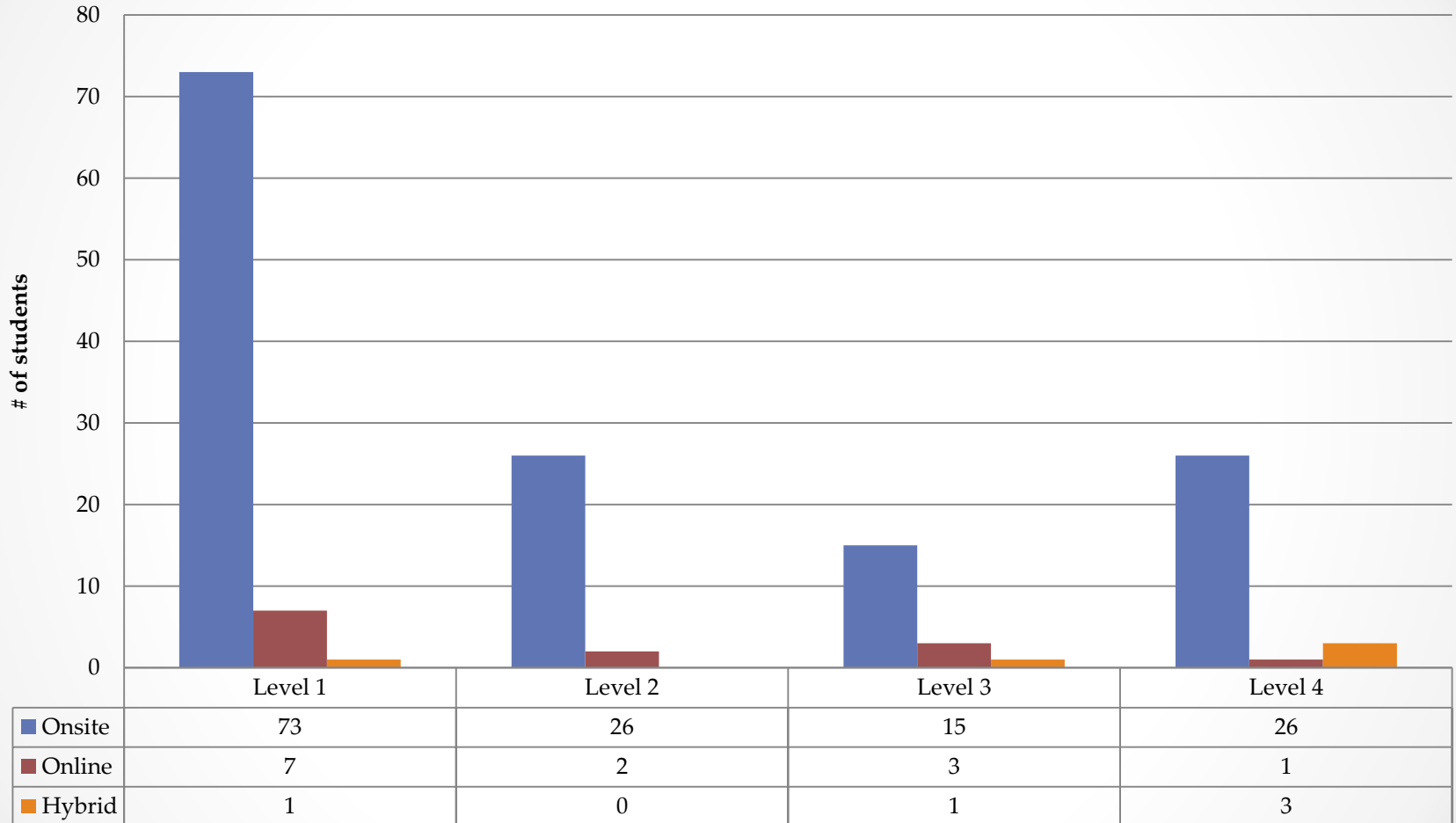
51 students, 33%, scored a 3+

# Percentage of Score 3+ at a Glance per Indicator

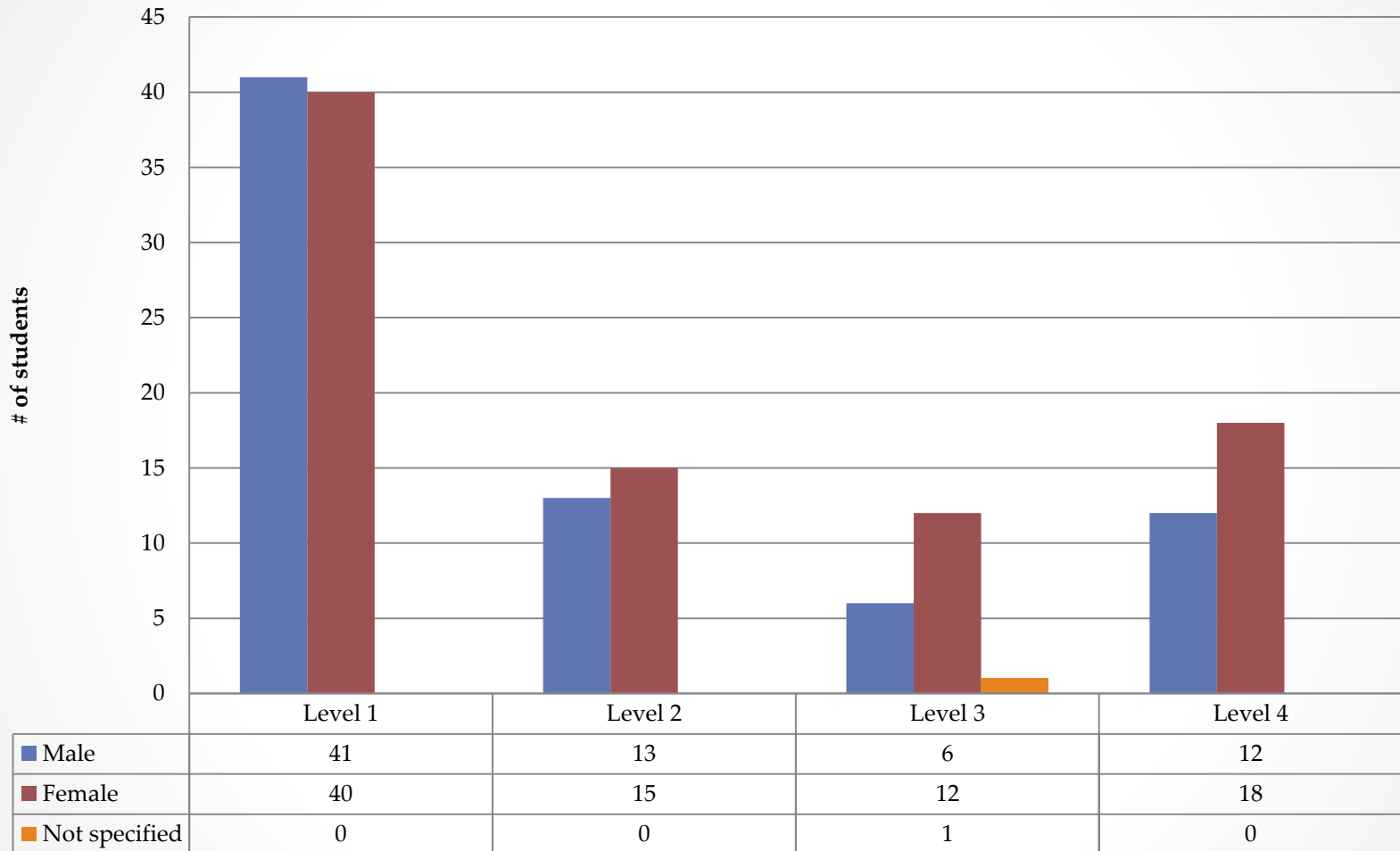


Expected Performance: 70% or more will earn a grade of 75% or higher (3+ on a scale of 4)

## RQ & CT Holistic Scores Comparison : Mode of Delivery

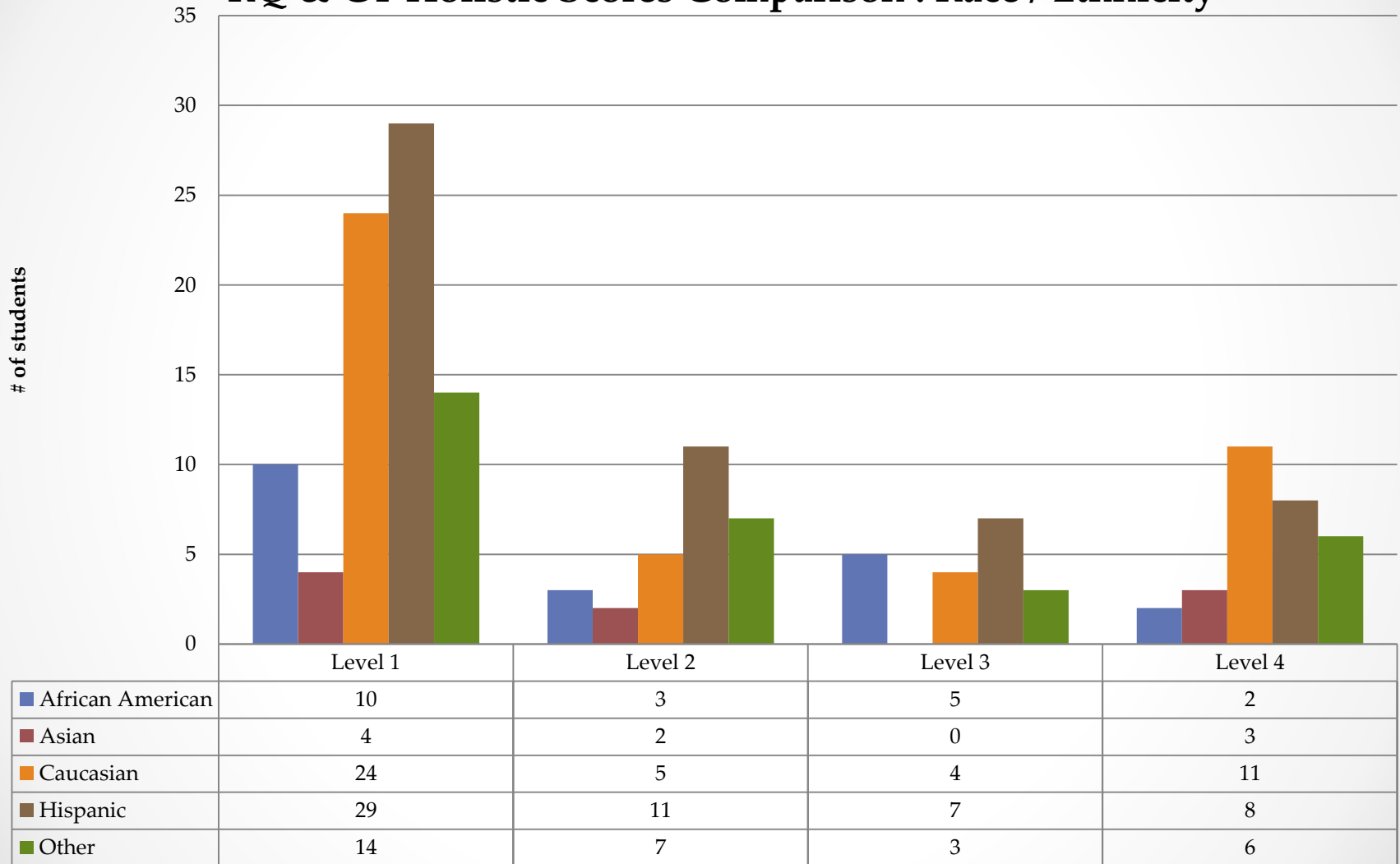


## RQ & CT Holistic Scores Comparison : Gender



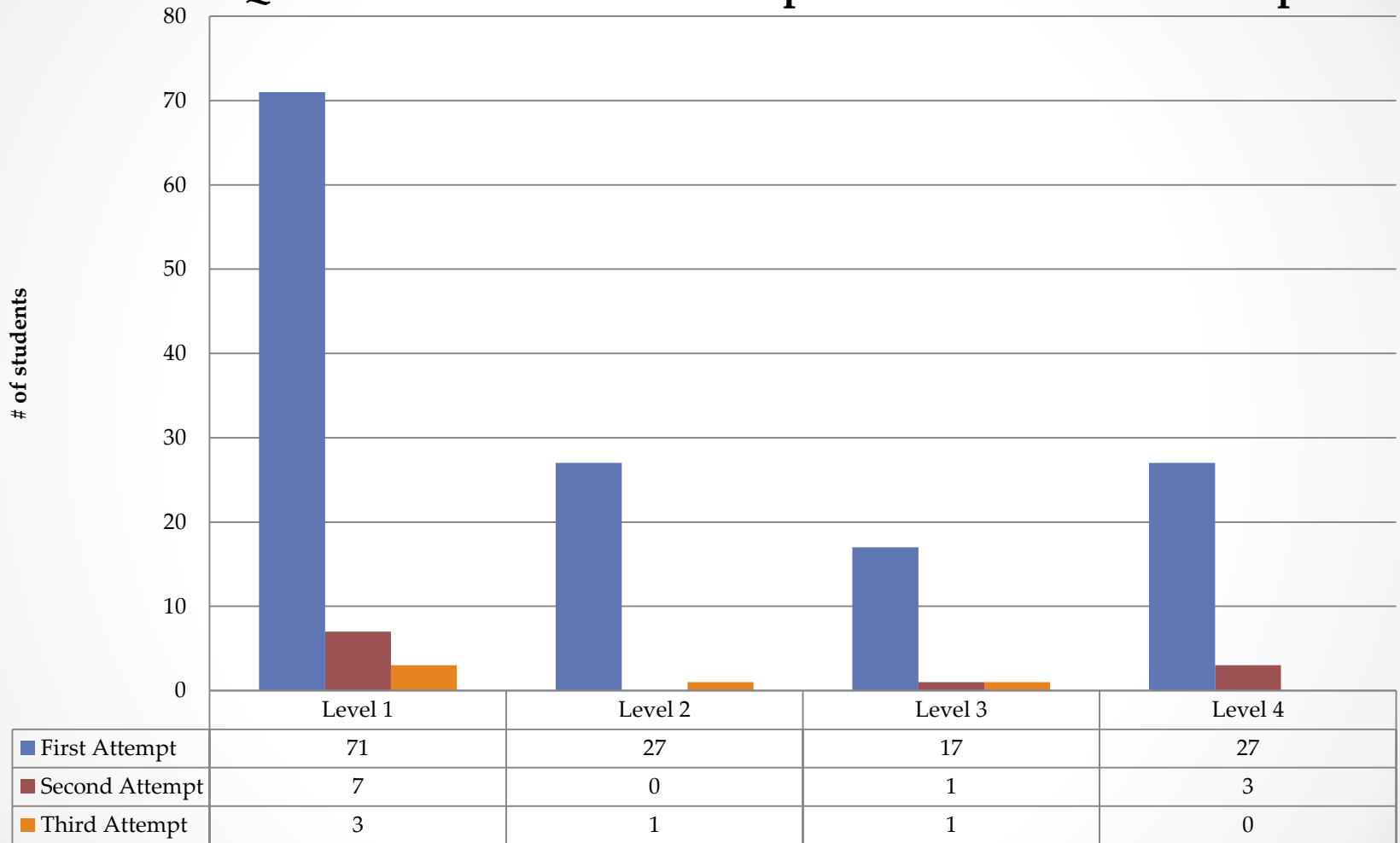


## RQ & CT Holistic Scores Comparison : Race / Ethnicity

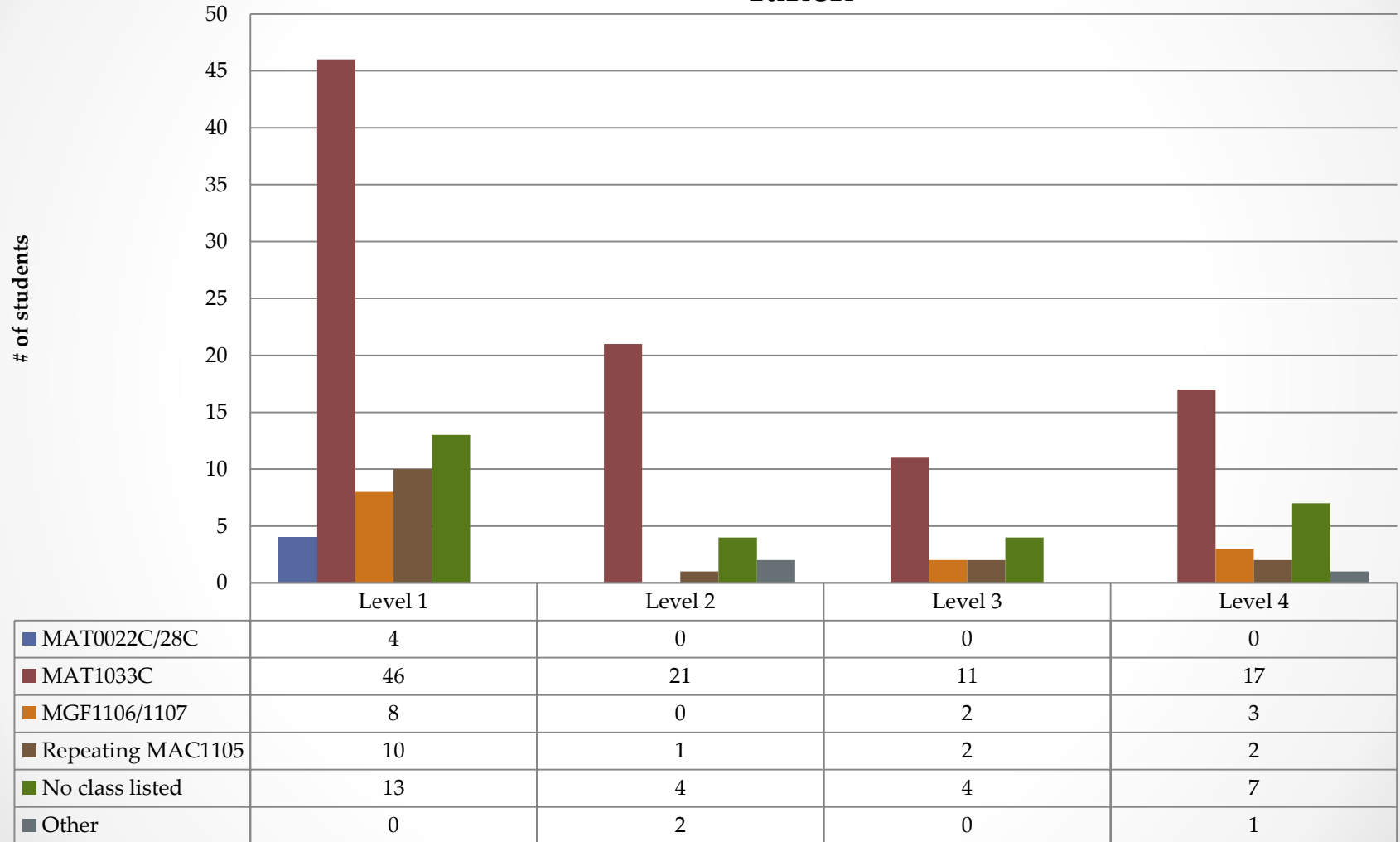


Other includes Hawaiian, Multi-race, unknown, unspecified.

## QR & CT Holistic Score Comparison: Number of Attempts

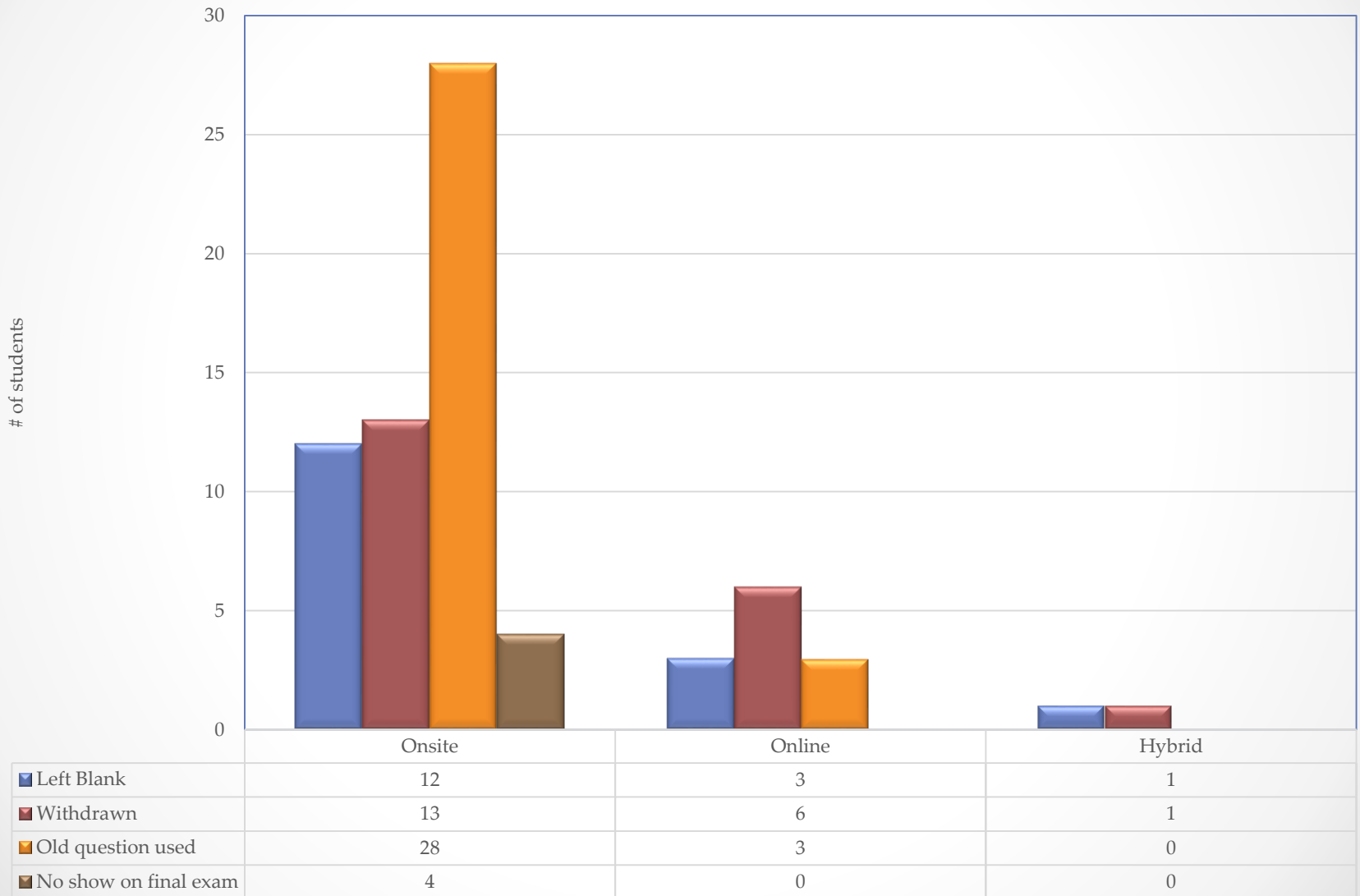


## QR & CT Holistic Scores Comparison: Most recent Math Taken



Other includes Engineering Tech Math and Statistics

## Unusable Artifacts - Per Mode of delivery



# Items Discussed During Assessment

## Day Discussions (05-05-17)

- Timing of assessment: Fall versus Spring
- Requesting feedback on how to help our students do better when it comes to quantitative reasoning and critical thinking
- Surveys were collected and feedback will be shared with instructors.