

# THE DIGITAL NATIVE'S PERSPECTIVE: IMPLICATIONS OF COVID FOR STUDENT TEACHERS IN ELEMENTARY MATHEMATICS

Dr. Amy Corp, Associate Professor C&I

# THE RESEARCH PURPOSE

- ✗ To explore teacher candidates experiences in teaching mathematics during internship of fall 2020 (during the pandemic).
  - + To determine what teacher candidates learned about students' mathematic ability after shelter in place orders were given in 3/20.
  - + To describe if and how teacher candidates modified math content.
  - + To describe how teacher candidates felt they were challenged and what they learned during teaching the math lessons during a pandemic.

# A LITTLE BACKGROUND

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- ✘ Our traditional teaching program had all teacher candidates in face to face classrooms by the time they implemented their 3 day math lesson segment.
- ✘ Most where teaching online until Sept. 17 and then nearly all still had students online with their in person students.
- ✘ \*Teacher candidate= internship/2 days a week & 1 day seminar

# METHODOLOGY

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## ✕ IRB submission of study

- + Student Survey invitation via email to all teacher candidates of FA20
- + Analysis of data in Qualtrics for common themes in answer choices
  - ✕ Using numerical values for yes (2), maybe (1) and no (0)
- + Comparative pattern analysis (coding) to develop common themes from written responses
- + Member checking for validation by outside faculty member
- + Findings: Frequency charts, summary of common themes

# FINDINGS

✗ Participants N= 30 (25 % of 120)

+ K(1) 1<sup>st</sup>(4) 2<sup>nd</sup>(7) 3<sup>rd</sup>(4) 4<sup>th</sup>(5) 5<sup>th</sup>(6) 6<sup>th</sup>(2) 7<sup>th</sup>(1)

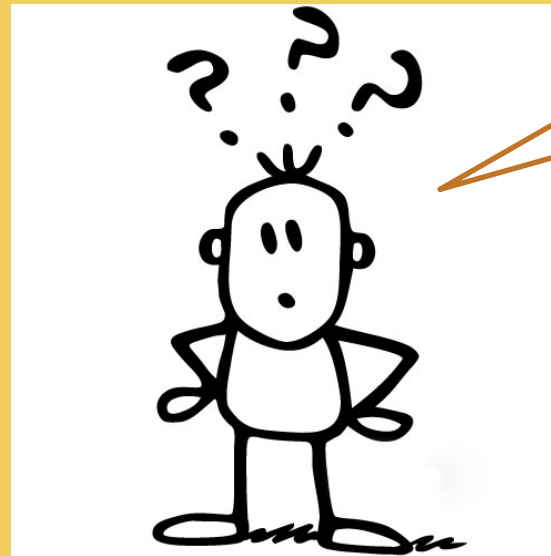


✗ Responses to short answer for all and by grade strands taught.

✗ Responses to written answers by themes for all and by grade strands taught.

# THIS PRESENTATION

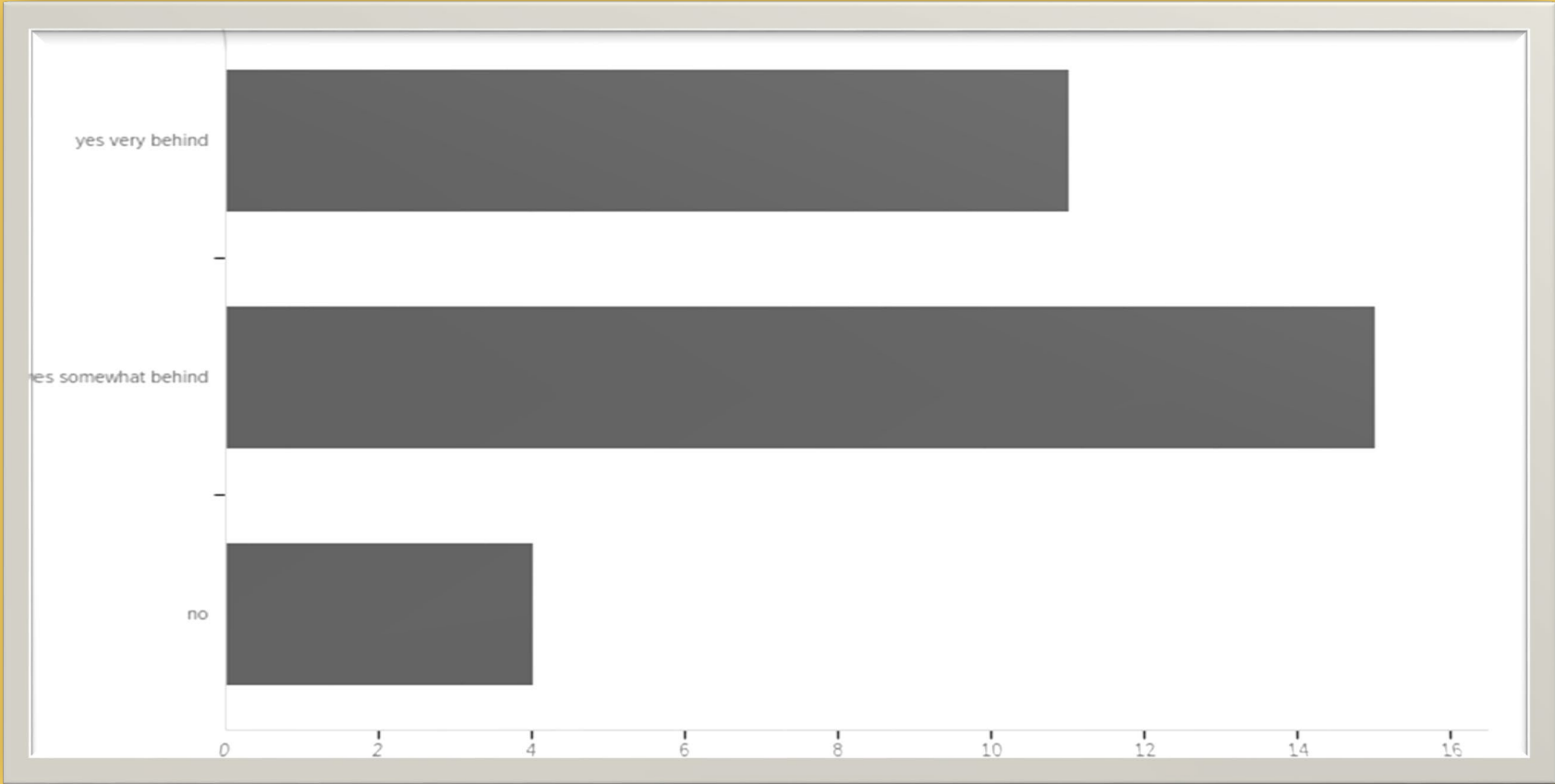
- ✗ We'll look at the questions, show the finding and briefly discuss the implications.



What does this  
mean to us as  
educators?



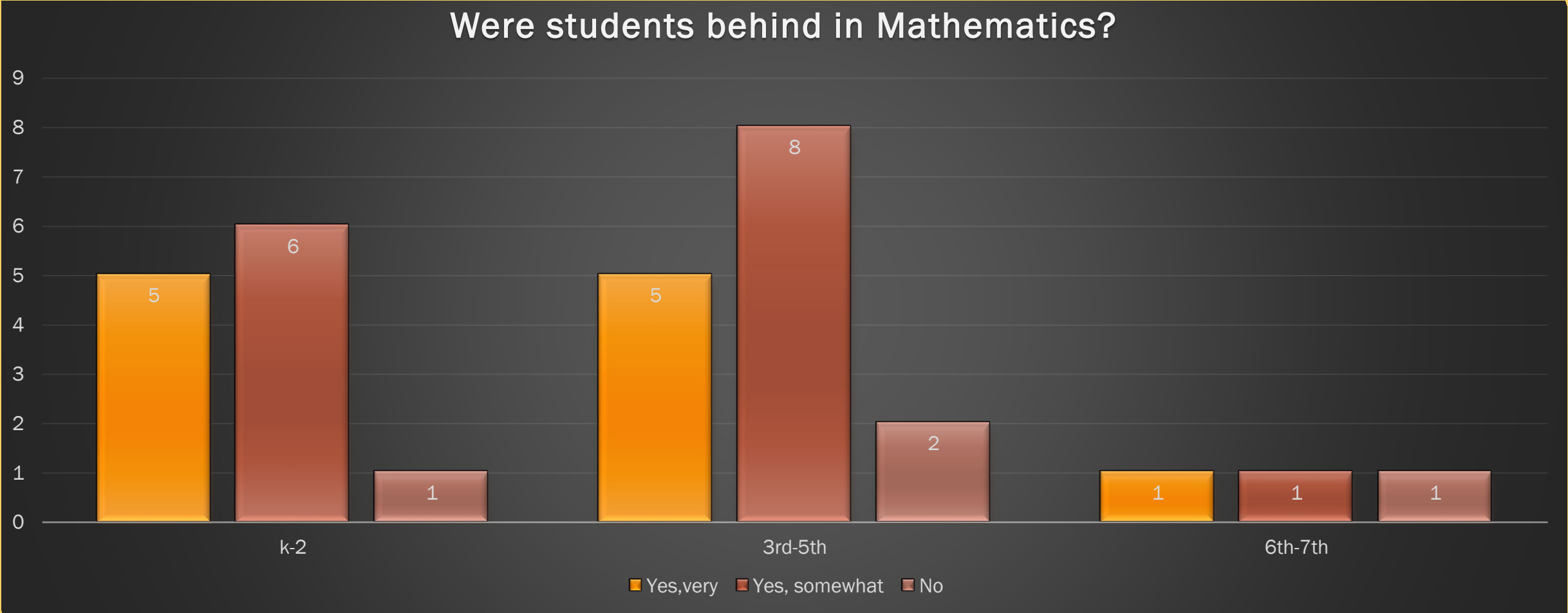
Q2 - DID YOUR MENTOR(S) TELL YOU THAT STUDENTS WERE BEHIND WHERE THEY SHOULD BE IN MATHEMATICS (SKILLS OR KNOWLEDGE)? OVERALL DATA.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Q2	1.00	3.00	1.77	0.67	0.45	30

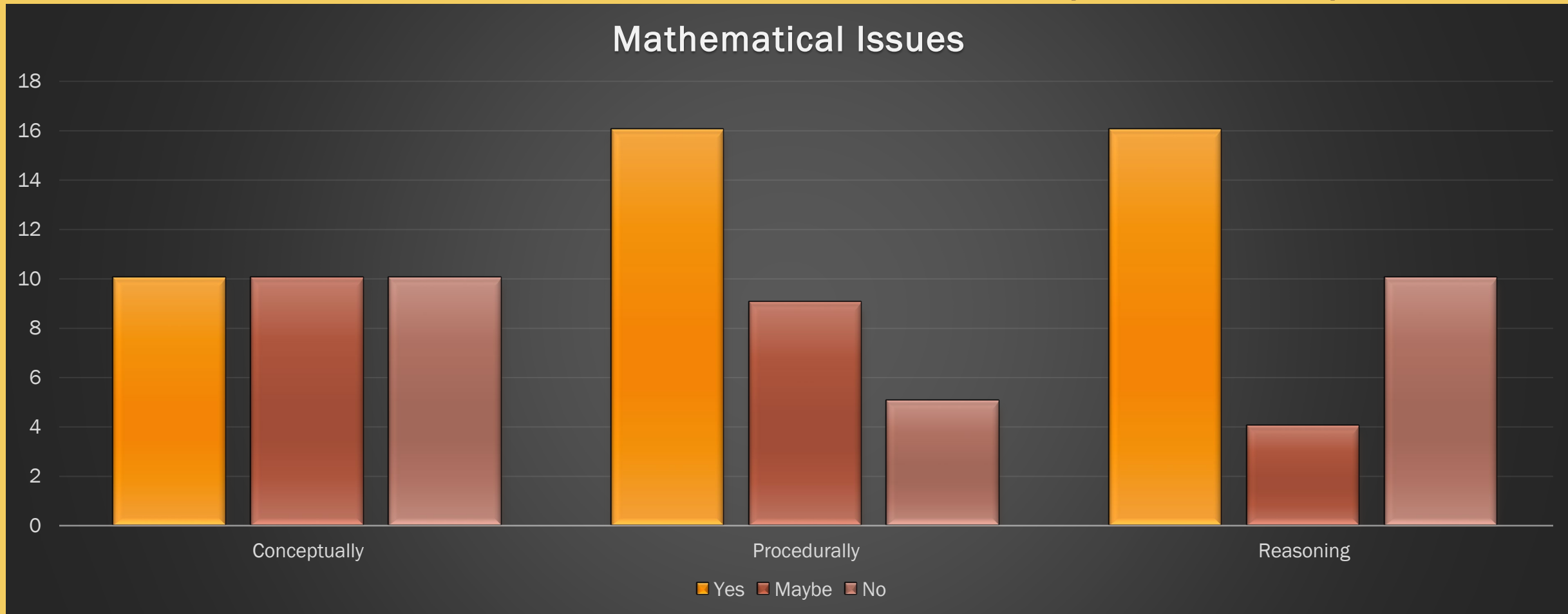


# BEHIND BY GRADE LEVEL STRAND



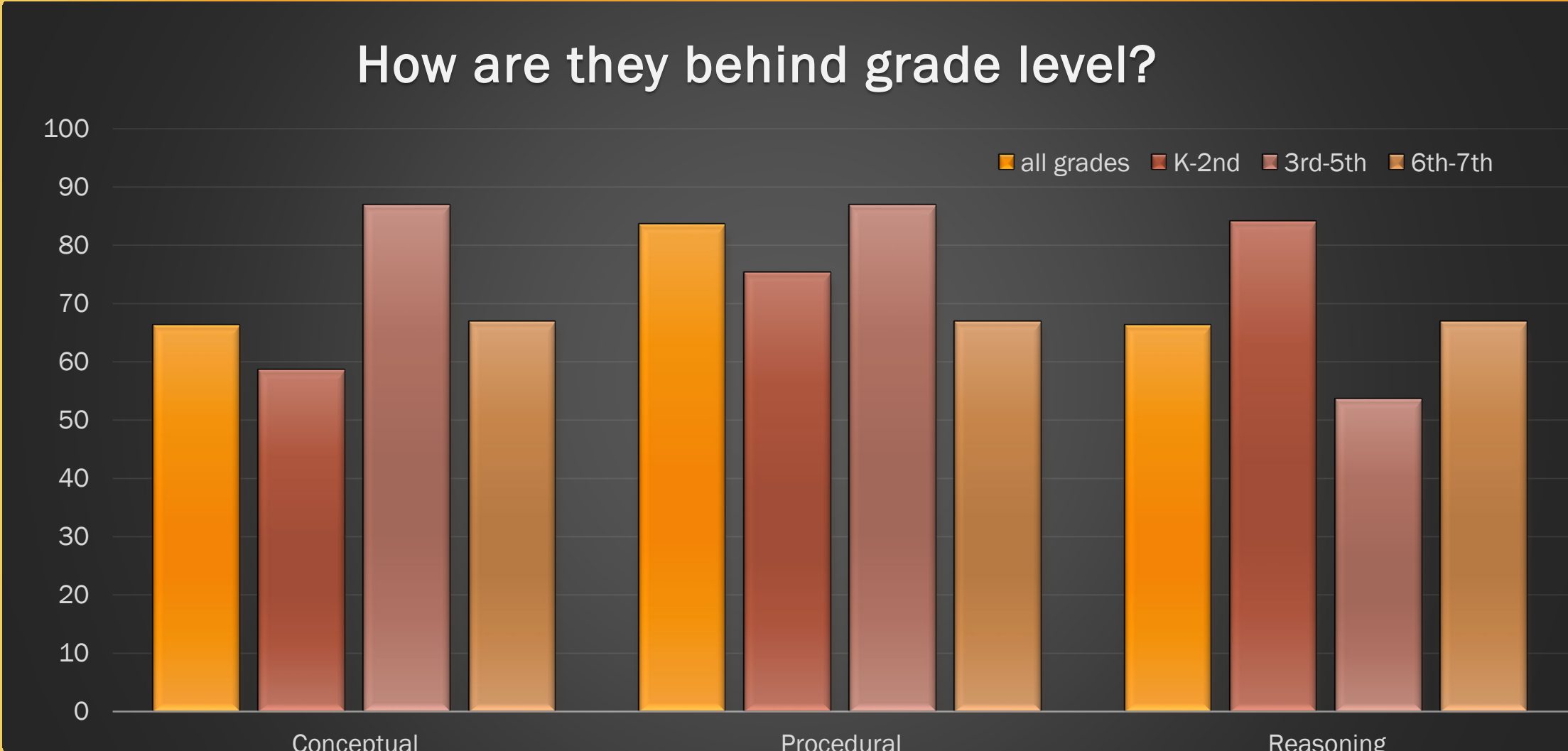


# WHAT WAS THE MATHEMATICAL ISSUE (ALL DATA)





# MATHEMATICAL ISSUES BY GRADE LEVEL

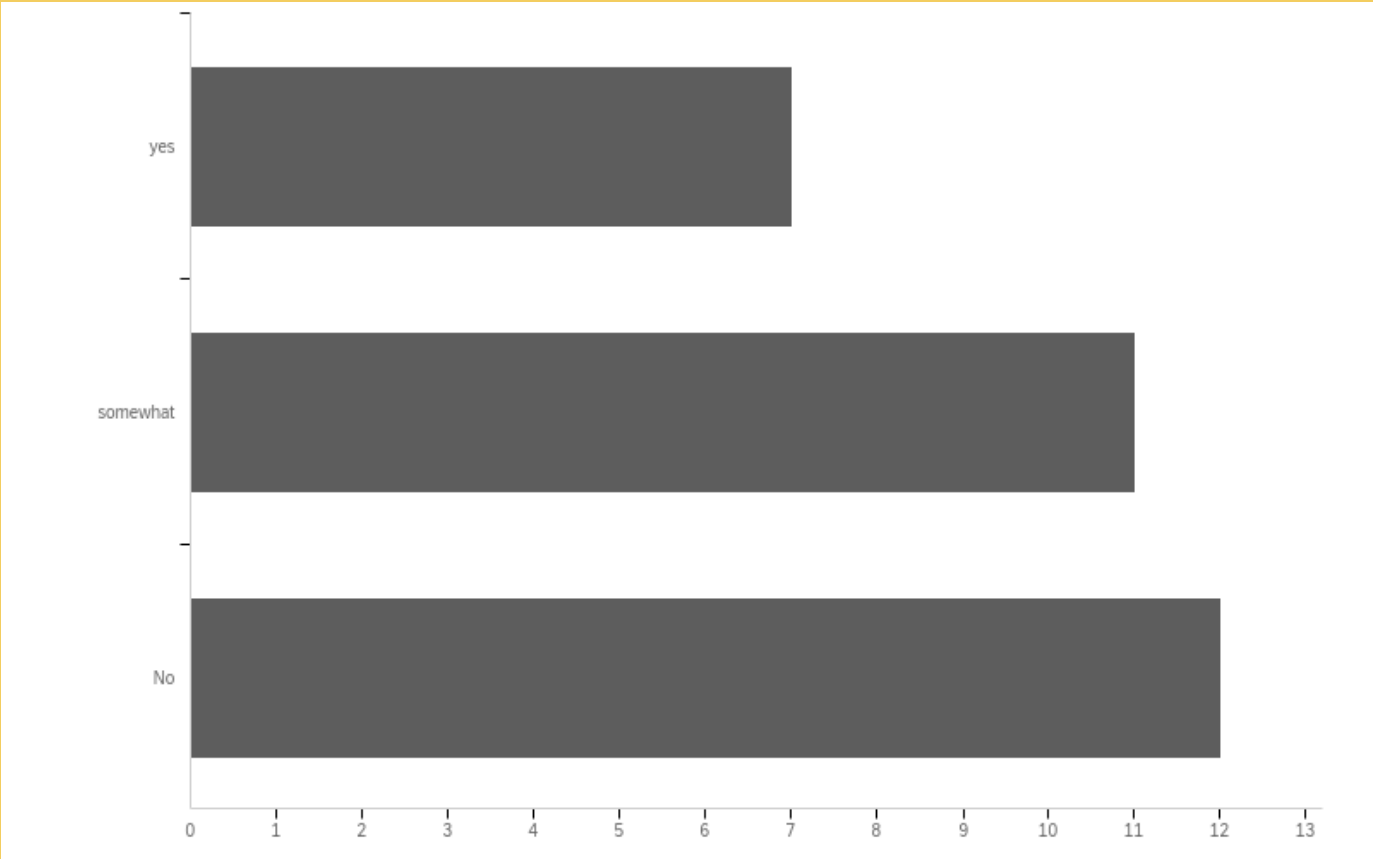


# TOP REASONS MENTORS GAVE FOR STUDENTS BEING BEHIND IN MATHEMATICS?

Themes	Frequency out of 30
Not having physical school (shut down Mar.-May): time missed	14
Shift to virtual/online learning (lack of effort, lack of teaching, not doing it at all/no devices)	6
Specific skills forgotten (when to add/subtract, multiplication tables, what to do in problem)	7
Lack of peer or teacher interaction	2

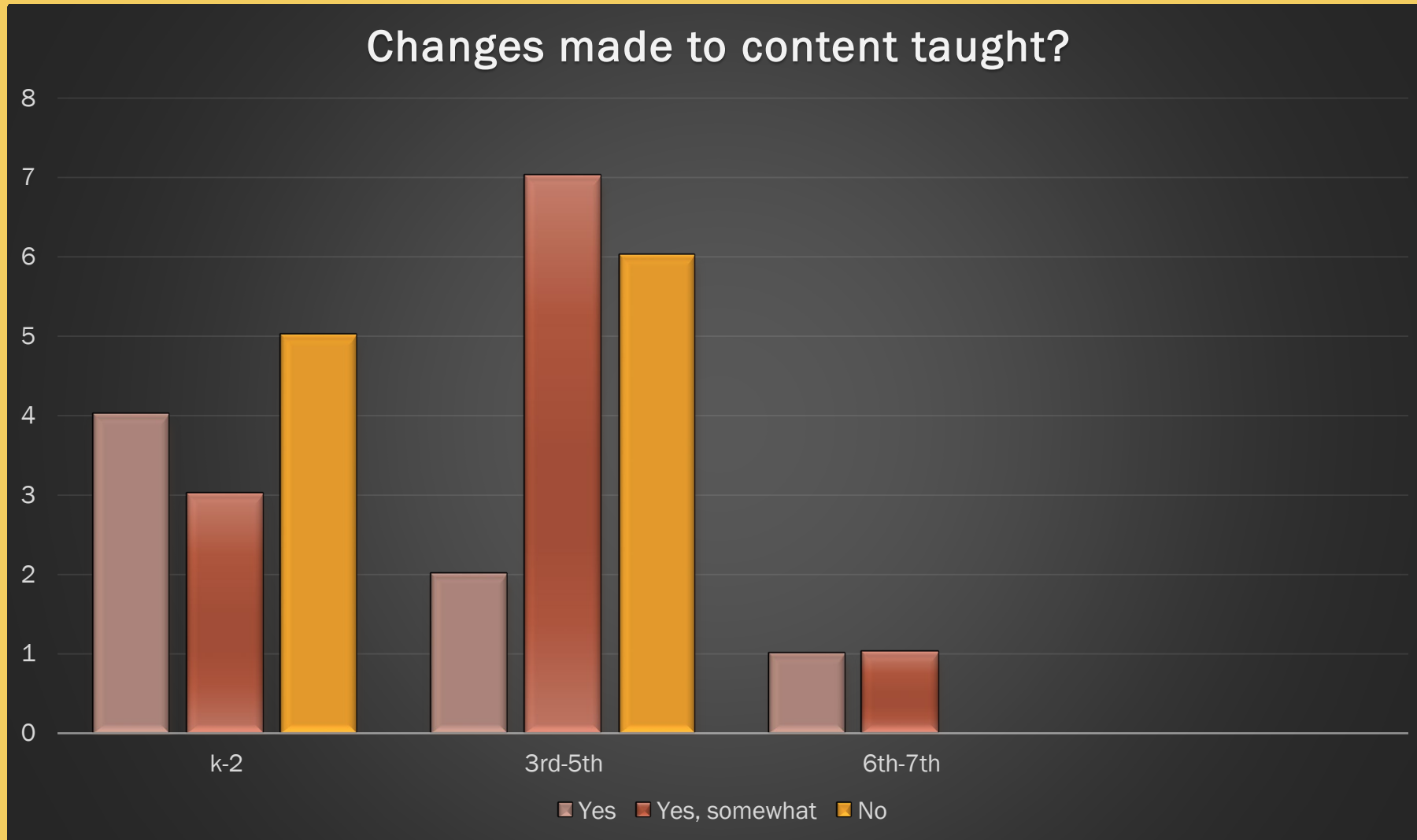


Q7:DID YOU HAVE TO CHANGE YOUR CONTENT (THE TEKS YOU WERE GOING TO TEACH) FOR THE LESSONS DUE TO STUDENTS BEING BEHIND OR LAGGING ON THE CONTENT FOR THE SEMESTER?

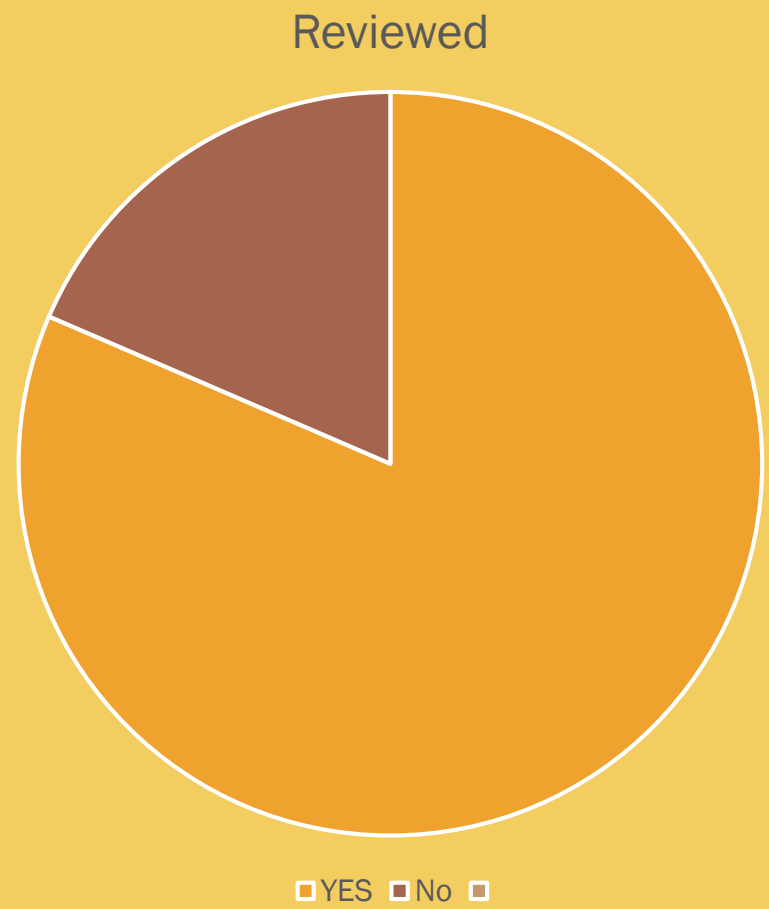


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Q7	1.00	3.00	2.17	0.78	0.61	30

# DID YOU CHANGE CONTENT? (BY GRADE LEVEL)



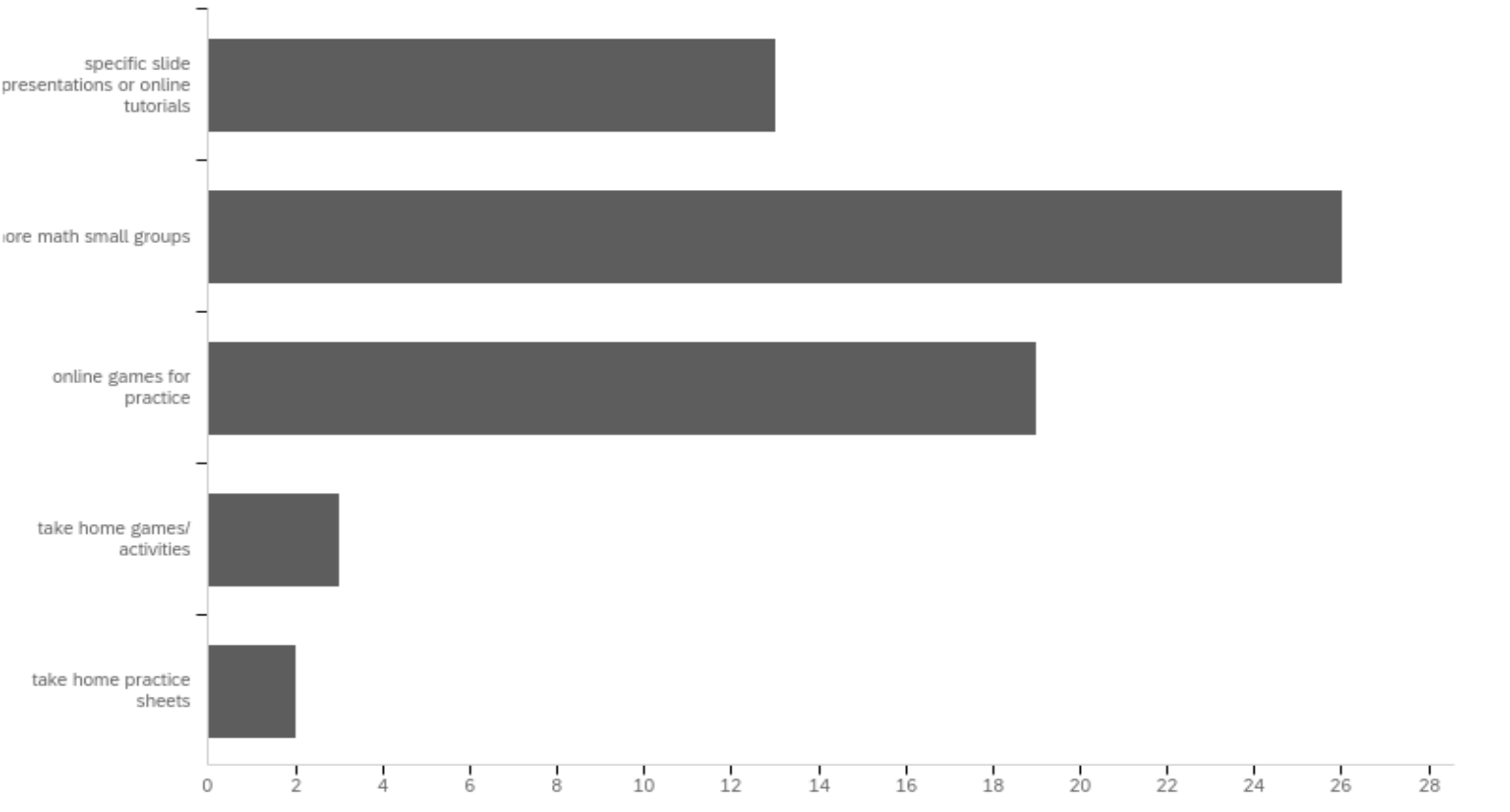
# DID YOU HAVE TO REVIEW PRIOR CONTENT (TEKS) BEFORE TEACHING YOUR TEKS? IF SO WHAT?



Themes	Frequency out of 30
Reviewing or teaching specific teks from the previous grade level.	13
Reviewing prior knowledge (of grade level teks)	6
Change in reading level or vocabulary	2



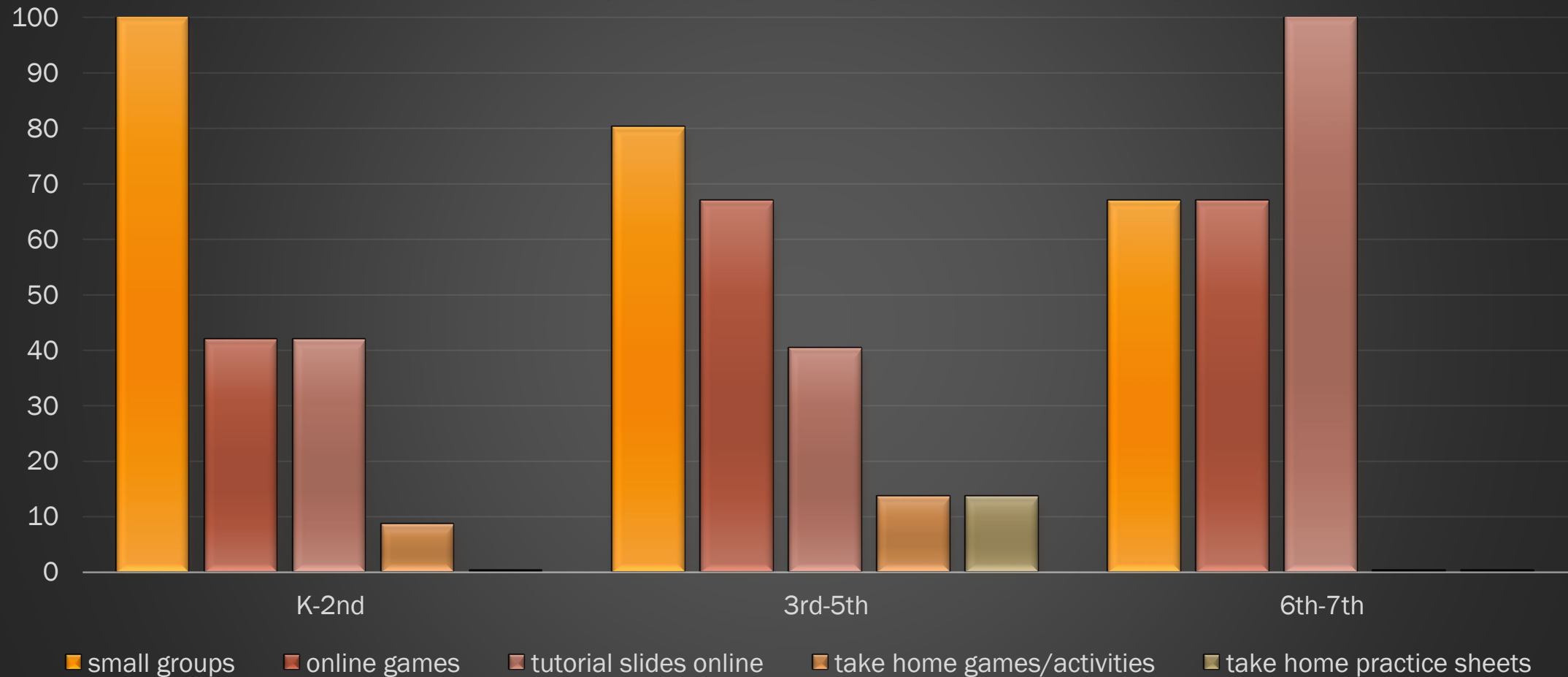
# WHAT SUPPORTS WERE IMPLEMENTED (OVERALL):



Answer overall data	%	Count
specific slide presentations or online tutorials	20.63%	13
more math small groups	41.27%	26
online games for practice	30.16%	19
take home games/activities	4.76%	3
take home practice sheets	3.17%	2
Total	100%	63

# WHAT WAS IMPLEMENTED TO SUPPORT STUDENTS?

These were implemented to help students 'catch up'.





## \*TEACHER CANDIDATE GROWTH (FROM THEIR PERSPECTIVE)

### ✖ From K-2:

Themes from student teacher responses	frequency
Use manipulatives: “incorporate manipulatives” “hands on with manipulatives”	42% (5)
Explicitly explain: “Breaking it down” “Step by step explaining” “slow down”	30% (4)
Adapt: “create new strategies” “more than one way” “new ways”	25% (3)
Use small groups	16% (2)

*“Being able to examine the patterns of learning, and the students mathematical reasoning helped me see the effectiveness of my teaching first hand.” (2<sup>nd</sup> grade)*

# \*TEACHER CANDIDATE GROWTH (FROM THEIR PERSPECTIVE)

## ✗ From 3<sup>rd</sup>-5<sup>th</sup>:

Themes from student teacher responses	frequency
About themselves “more confident” “more connected” “more flexible”	7
Struggle to teach virtual and in person at the same time	4
Need to be explicit	3
Hands on “manipulatives/models/food” “hands on activities”	3

“The students enjoy certain virtual work/games but others get boring and they complain about doing computer work. But too many worksheets become tiring as well. However if you use both for the right amount of time (for example: worksheets on fractions and then a fraction whole group game online) as well as manipulatives/models/food can make for a successful lesson. (4<sup>th</sup> grade)



## \*TEACHER CANDIDATE GROWTH (FROM THEIR PERSPECTIVE)

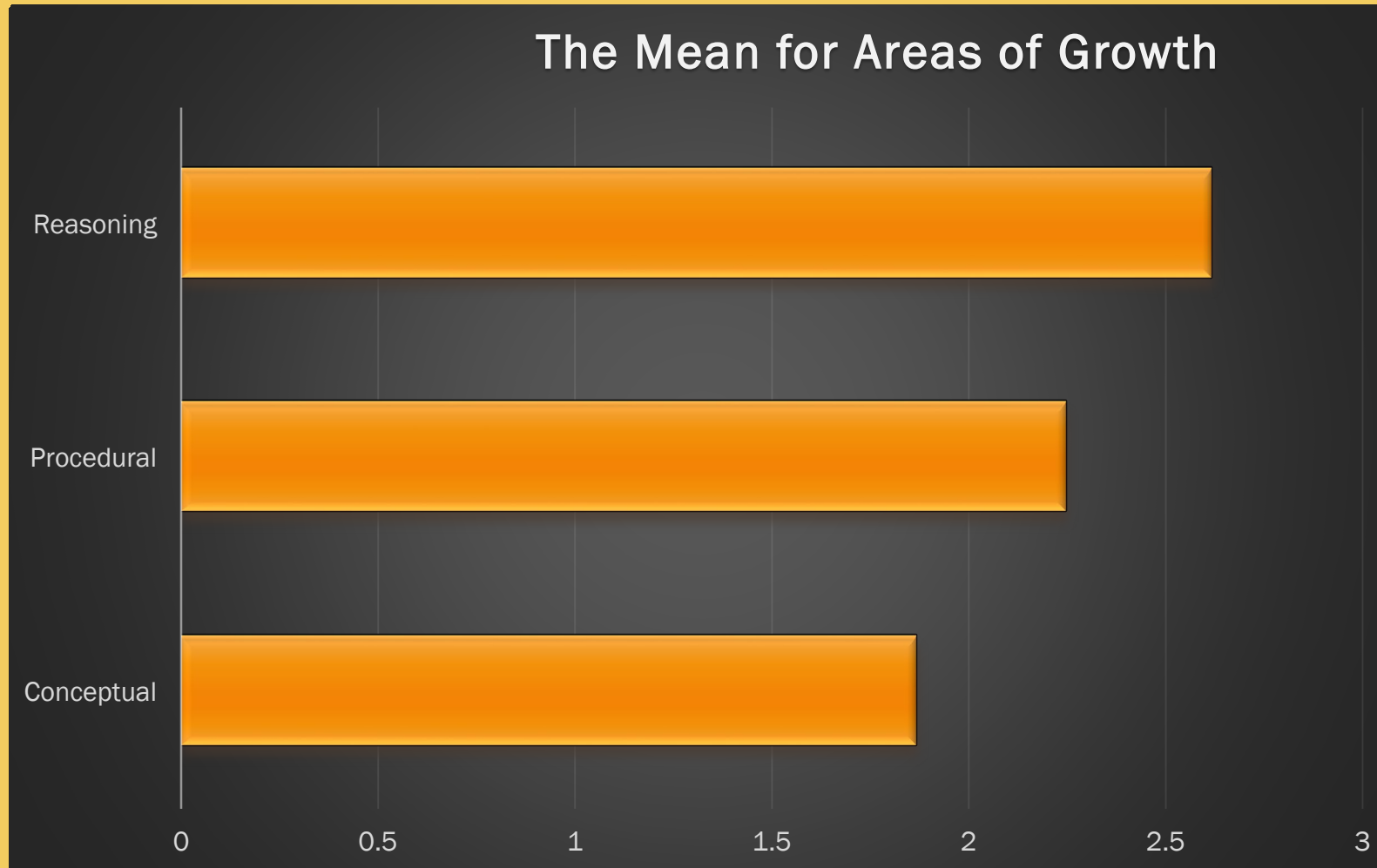
### ✕ From 6<sup>th</sup>-7<sup>th</sup>:

*We did virtual and face to face at the same time. It was difficult getting some (most) virtual students to participate and take notes at home. It was difficult doing small group virtually we ended up getting breakout room on Google Meets so that has helped this semester. Juggling both has been difficult but has been a little easier. Making sure we are checking in with virtual students to see if they need any help or extra resources. (6<sup>th</sup> grade)*

*Mathematics is like a puzzle you need to get all the smaller pieces to create the bigger piece. Working backwards is something that is a valuable tool. (6<sup>th</sup> grade)*

*I was taught math on paper and manipulatives growing up. Now I have learned an abundance of online resources like games, activities, group activities, note taking, etc. (7<sup>th</sup> grade)*

# GROWTH SPECIFIC TO MATHEMATICS CONTENT TAUGHT



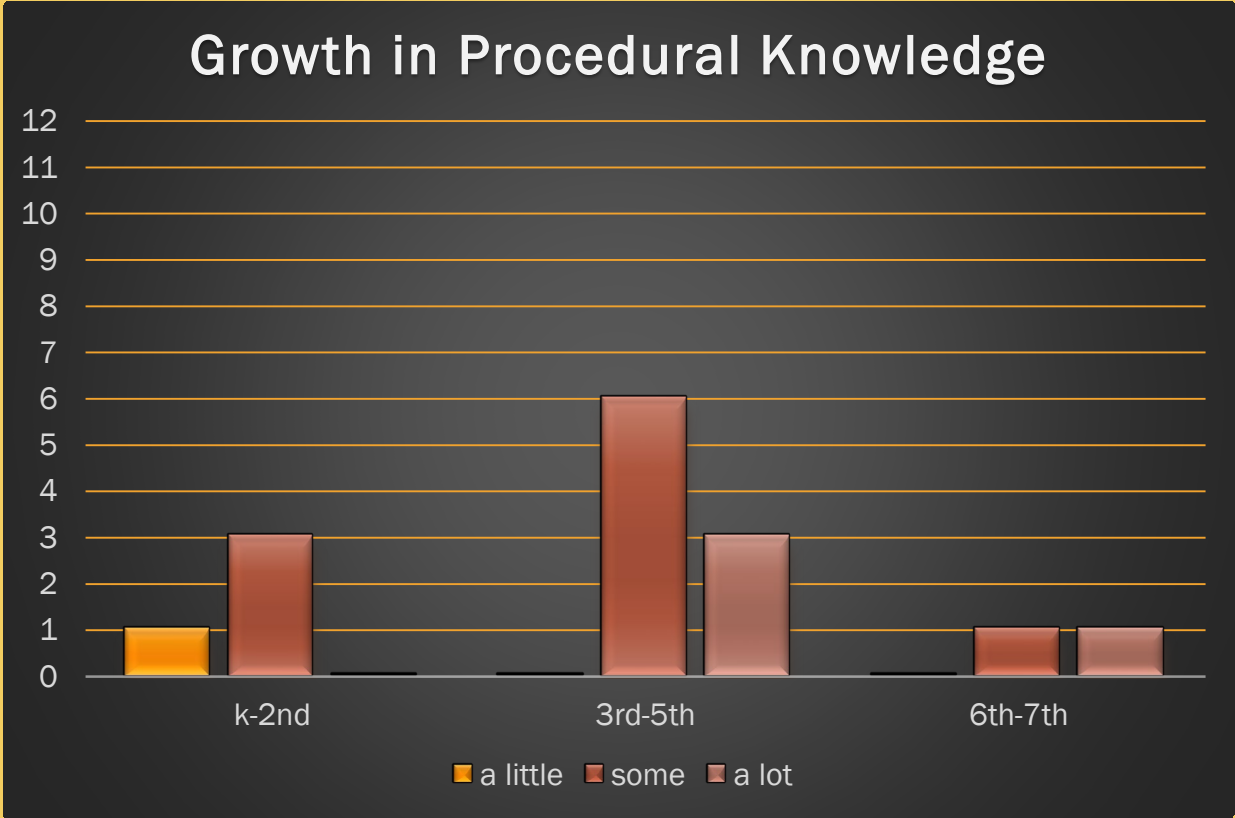
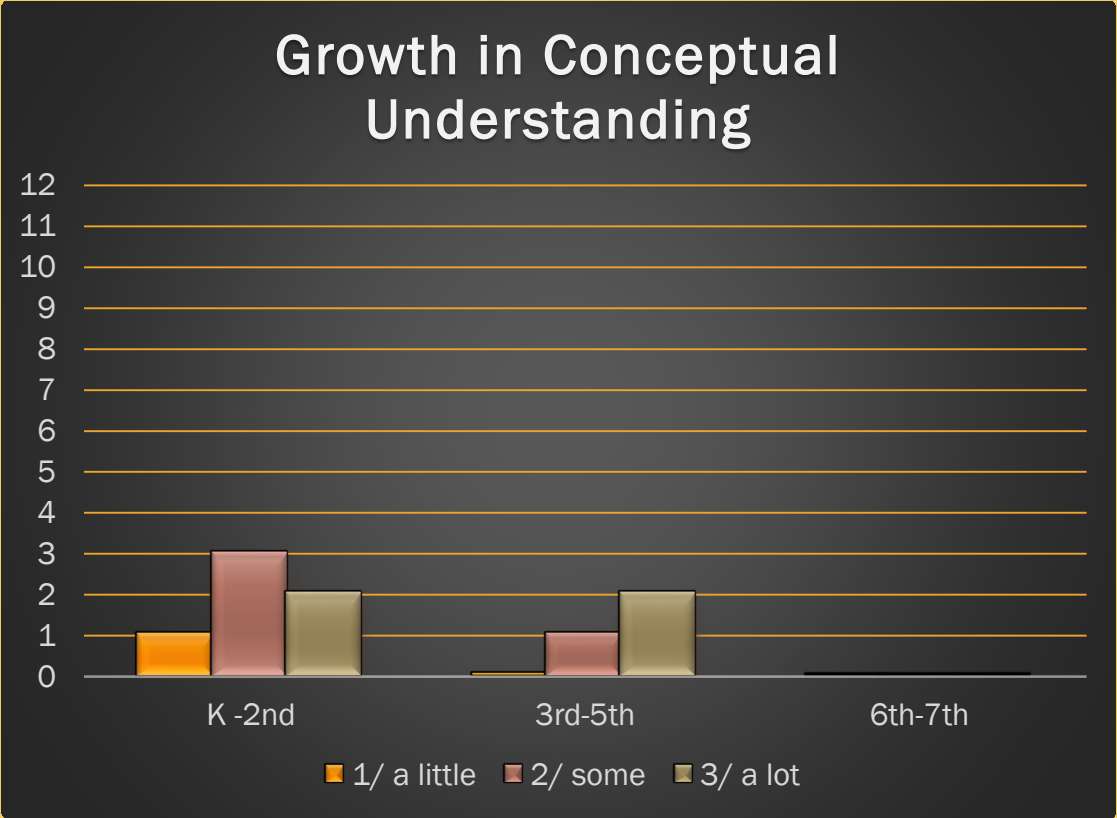


# FINDINGS BROKEN DOWN

#	Question	1 (a little)		2 (some)		3 (a lot)		Total out of 30
1	the concept:	40.00%	6	33.33%	5	26.67%	4	15
2	the procedures:	6.25%	1	62.50%	10	31.25%	5	16
3	mathematical reasoning	10.34%	3	17.24%	5	72.41%	21	29

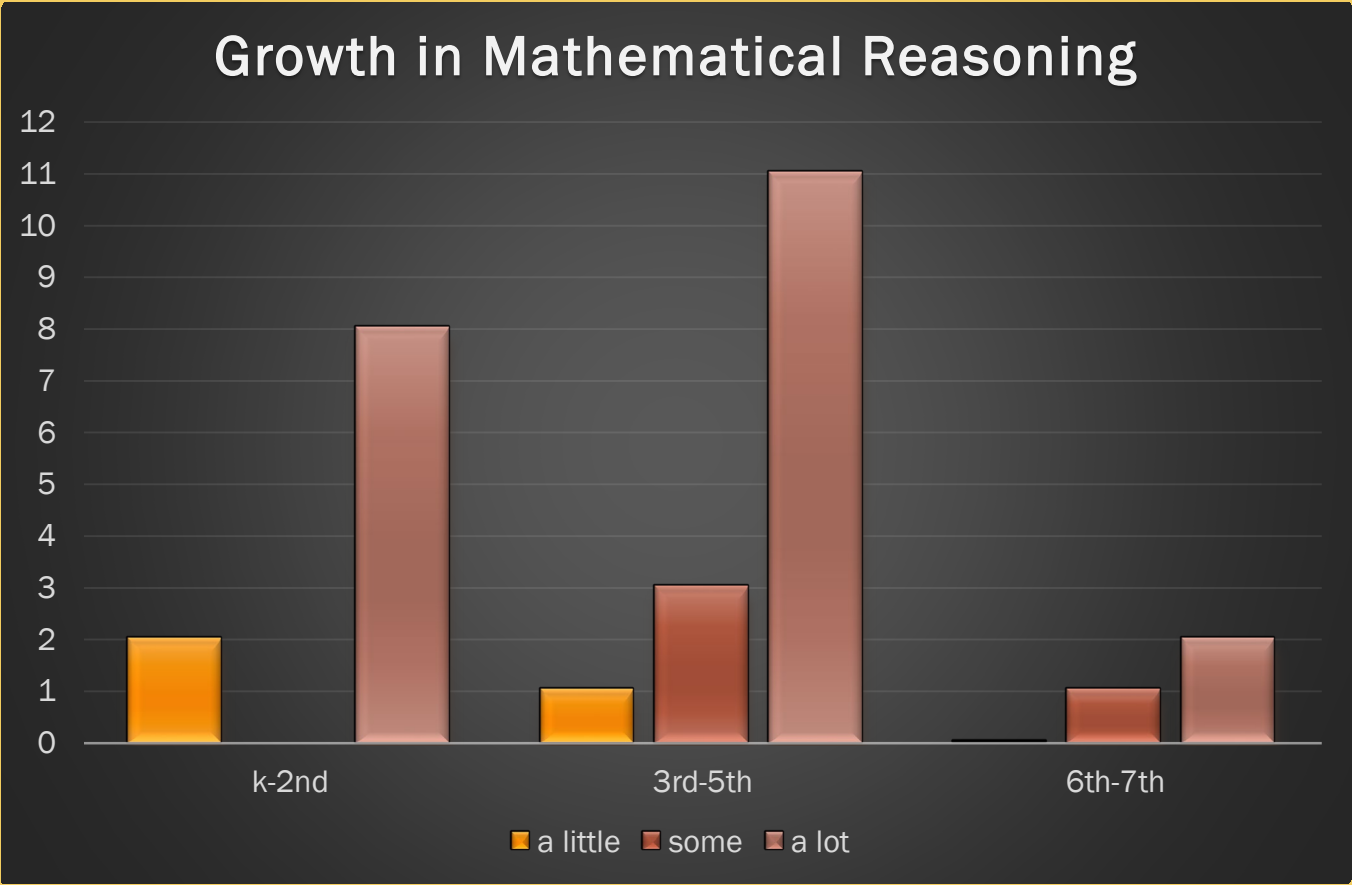


# BREAKDOWN OF SPECIFIC STUDENT GROWTH (ALL)





# MATHEMATICAL REASONING



Focus of the 3 day teach: to plan consecutive lessons and analyze patterns of learning to reteach.

	growth
K-2	83.3%
3 <sup>rd</sup> -5 <sup>th</sup>	100%
6 <sup>th</sup> -7 <sup>th</sup>	100%

# CONCLUSIONS

- ✘ ST's overwhelming learned students were behind due to pandemic.
- ✘ ST's noted all areas had some concerns (varied at each grade strand- all about 50%).
- ✘ ST's noted challenge was dual teaching (VLA & in person) but also noted most personal growth & then growth in their own knowledge in mathematics.
- ✘ 96.6% marked growth in reasoning.



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✕ Questions or comments: [Amy.Corp@tamuc.edu](mailto:Amy.Corp@tamuc.edu)

Thank you for viewing. 😊