

# Quantifying Curricular Reasoning as a Critical Practice in Teaching Mathematics

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## Purpose:

Design and validate two tools with middle school mathematics teachers to improve their practice: a survey and an observation protocol.

These tools aim to provide feedback to teachers on their use of *curricular reasoning* in their practices (i.e., how teachers reason about and use their curriculum).

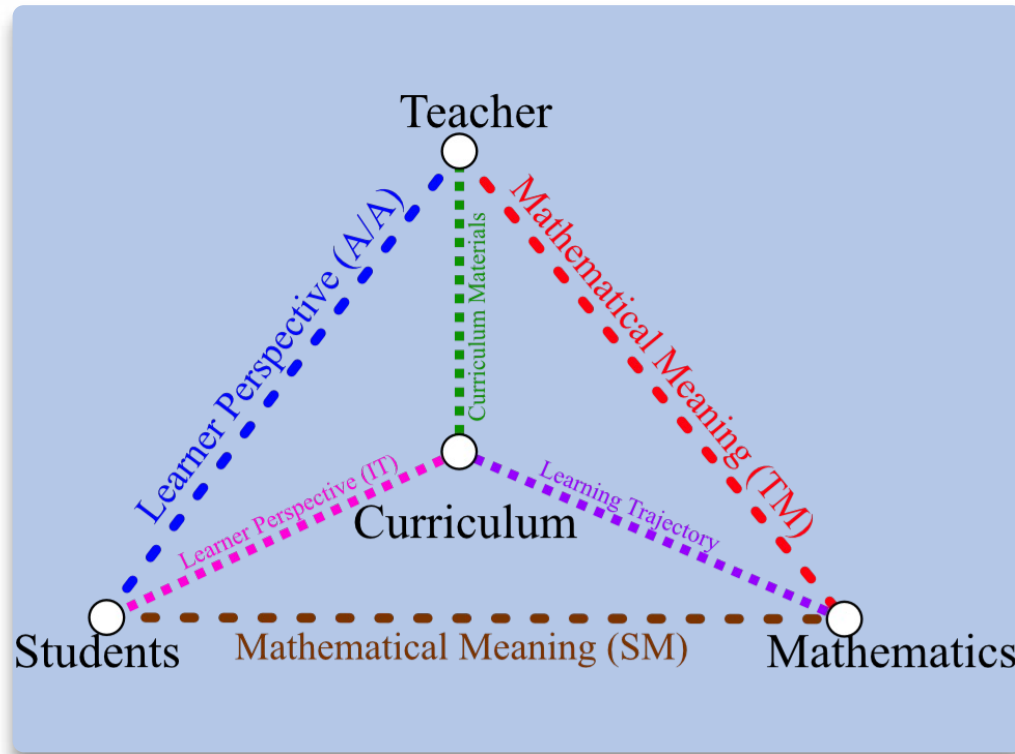
## Research Questions:

**RQ1:** To what extent does validity evidence support use of the *CR Self-Assessment Survey Suite* (CR-SASS) for middle school mathematics teachers to measure their own CR?

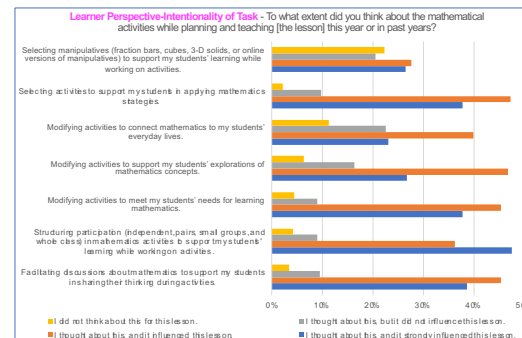
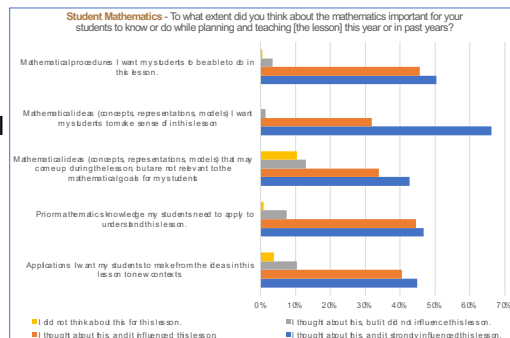
**RQ2:** To what extent does validity evidence support use of the *CR Observation Assessment* (CR-OA) to measure middle school mathematics teachers' CR when used by mathematics education researchers and educational leaders?

**RQ3:** Is there a significant relationship between middle school mathematics teachers' CR when measured by the new CR tools (CR-SASS and CR-OA)?

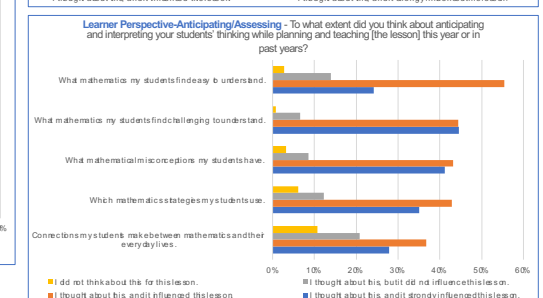
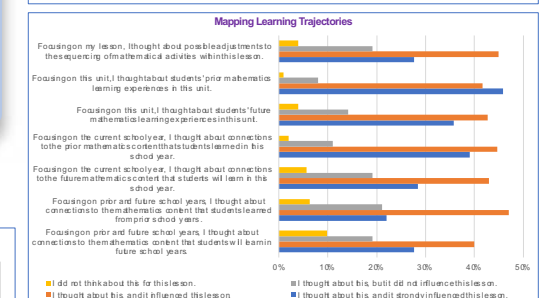
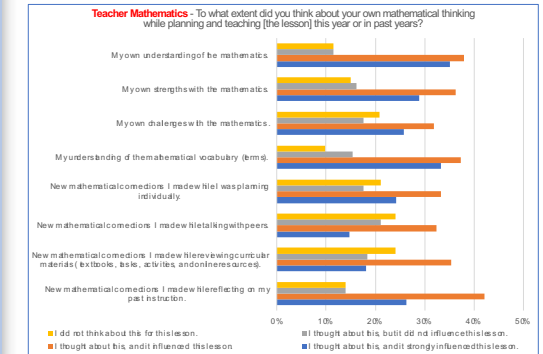
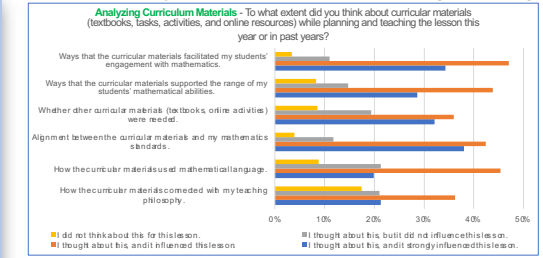
**RQ4:** What benchmarks define different CR levels on the CR-SASS and CR-OA?



After three rounds of CR-SASS quantitative field-testing, psychometric results support strong internal structure and response processes validity evidence.



## Preliminary CR-SASS Results (N=408)



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