

Teachers' Knowledge of Math Strategies May Impact Their Confidence Level in Teaching Math

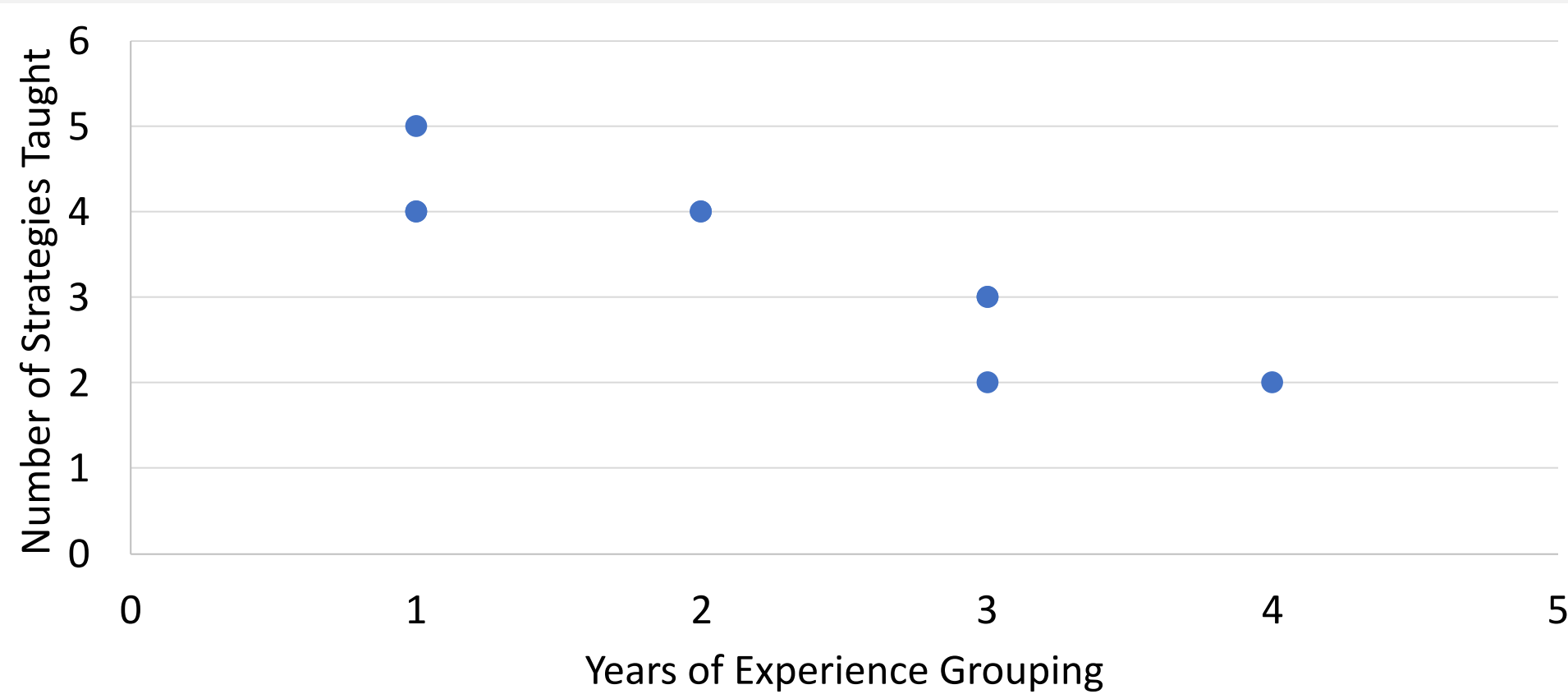
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THE PROBLEM

As teacher confidence and effectiveness is related to student success, it is important to evaluate how teachers are prepared before entering into the classroom. Recent resulting research highlighted teacher preparation and confidence in mathematics to bring accountability to teachers in data-driven classrooms. This study addresses a gap in research to examine how the different programs within the United States specifically impact teacher confidence by preparing teachers with the appropriate mathematics strategies and skillsets.

RESULTS

- Teachers emphasized the importance and resulting confidence of utilizing certain strategies such as hands-on manipulatives and visuals over other strategies.
- Teachers' personal attitudes towards mathematics—whether a strong love or a previously experienced weakness—helped drive their instruction and confidence.
- The results displayed increased confidence also stems from years of experience teaching.
- Teachers suggested areas of improvement for future preparation programs to help foster confident future teachers. These areas includes explicit strategy application and strategies with which to respond to unsuccessful lessons.



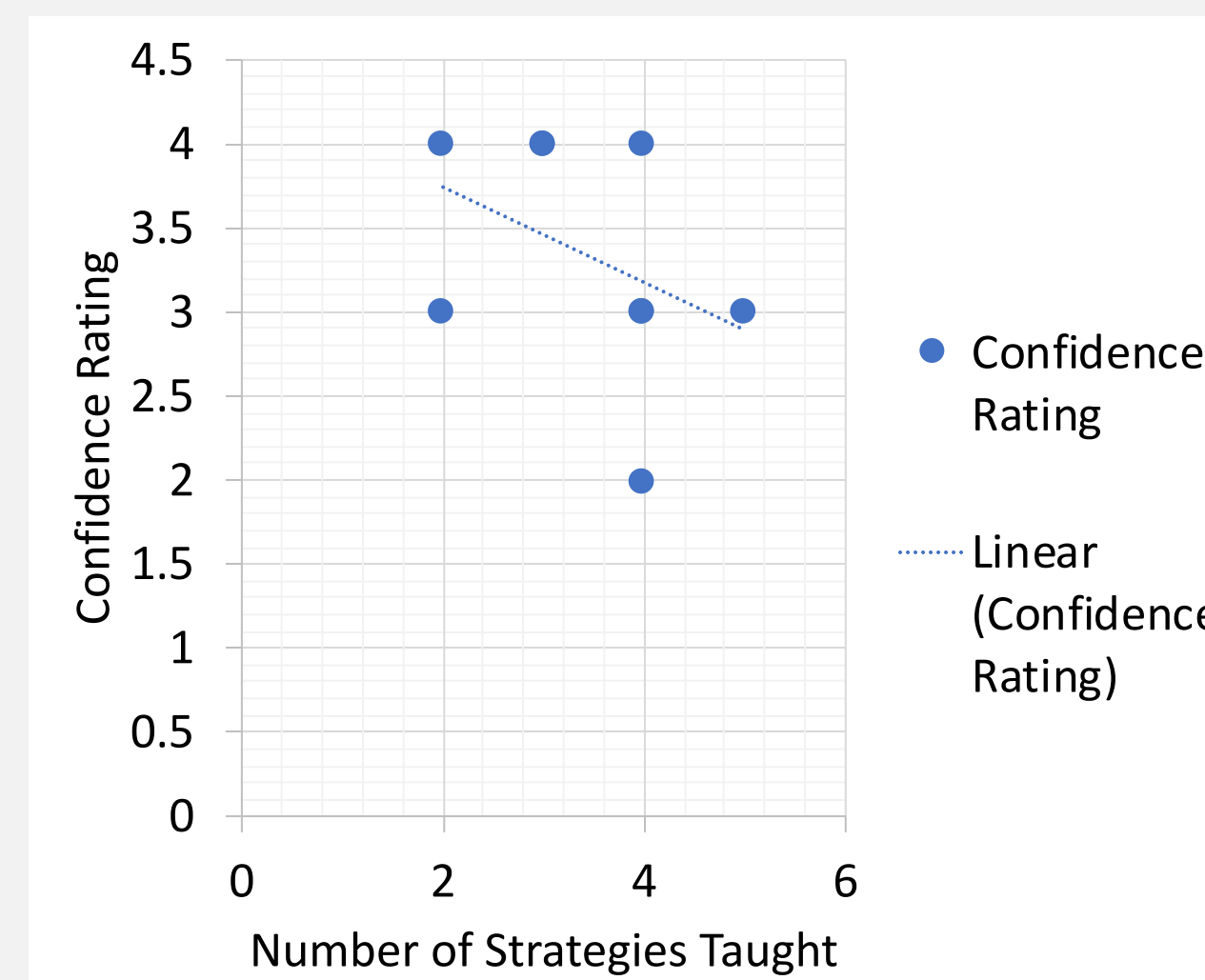
Participants' Years of Experience Teaching Compared to the Number of Strategies Taught in their Preparation Program

PURPOSE OF THE STUDY

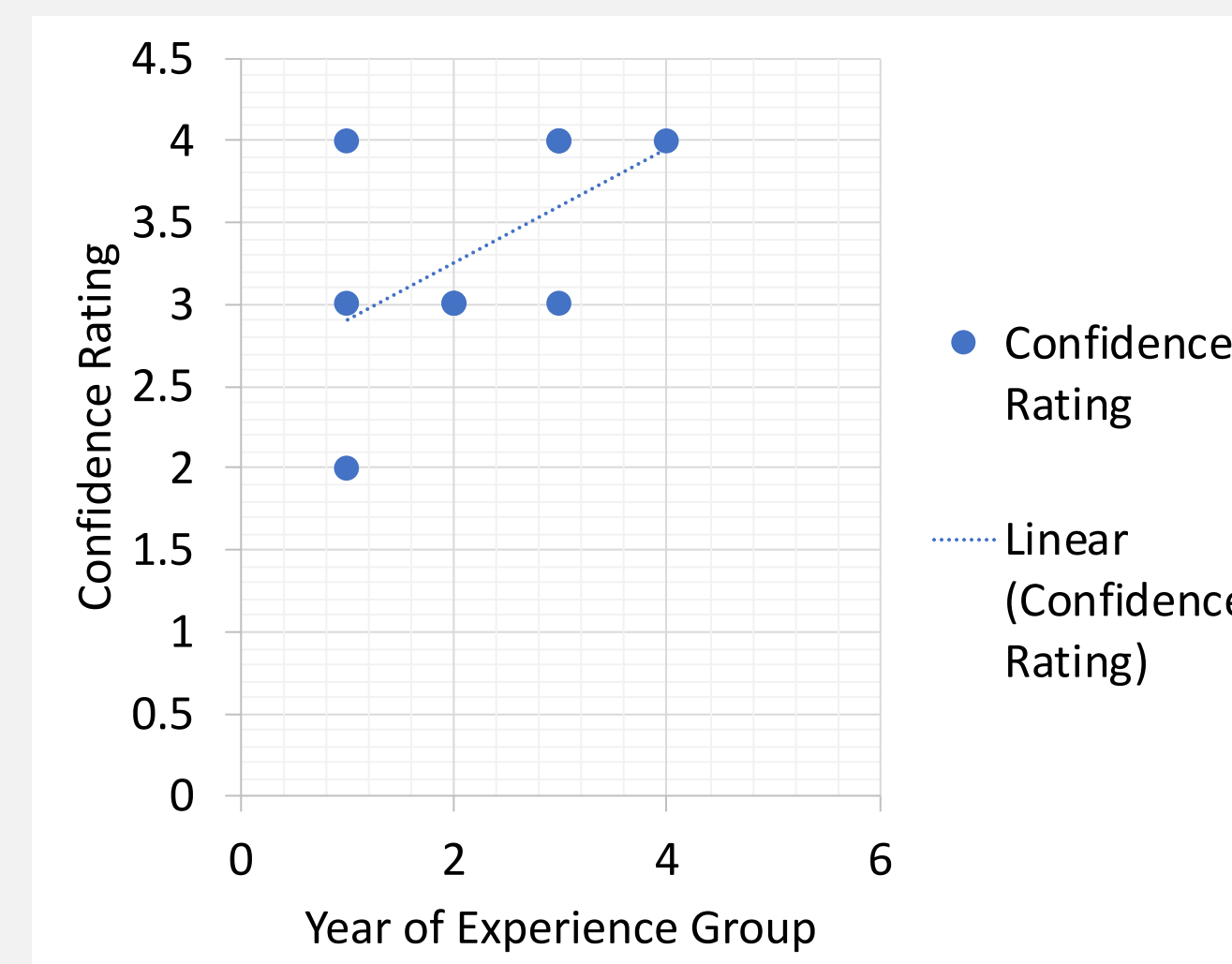
The purpose of this research study is to learn if teachers in the United States feel properly prepared to self-assuredly implement strategies learned from their preparation program to confidently teach mathematics. It evaluated how teachers' knowledge and implementation of mathematics instructional strategies learned in preparation programs influences their confidence in the classroom.

RESEARCH QUESTION:

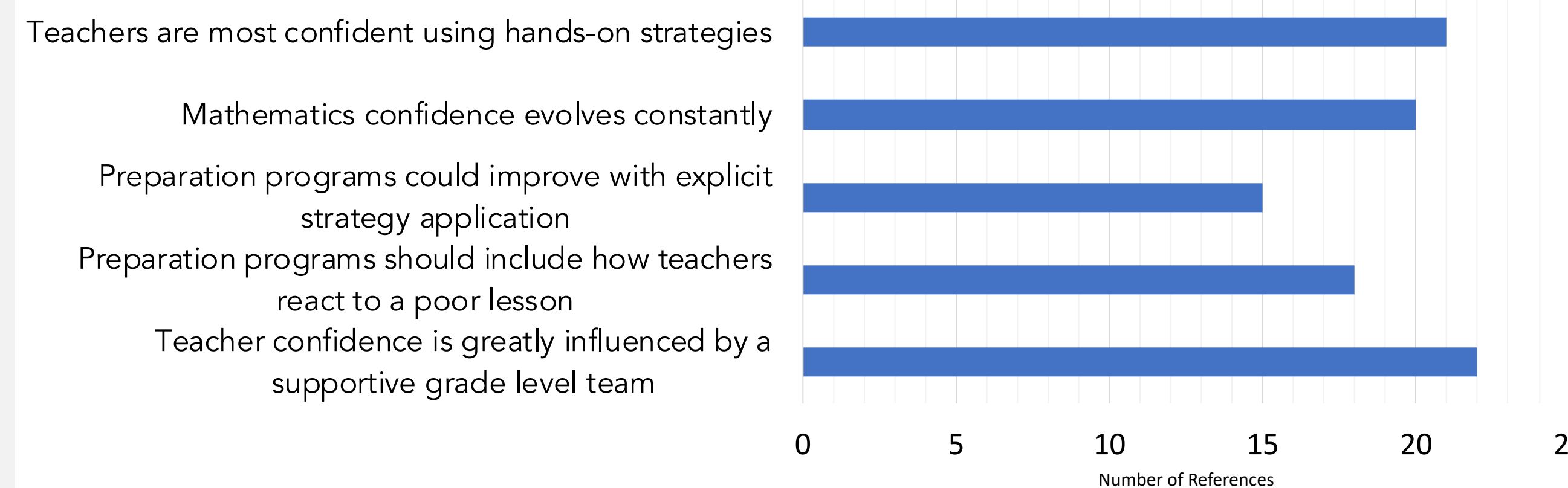
Does teachers' knowledge of mathematics strategies taught within preparation program influence their confidence level in teaching math in the field?



Participants' Confidence Rating Compared to the Number of Strategies Taught



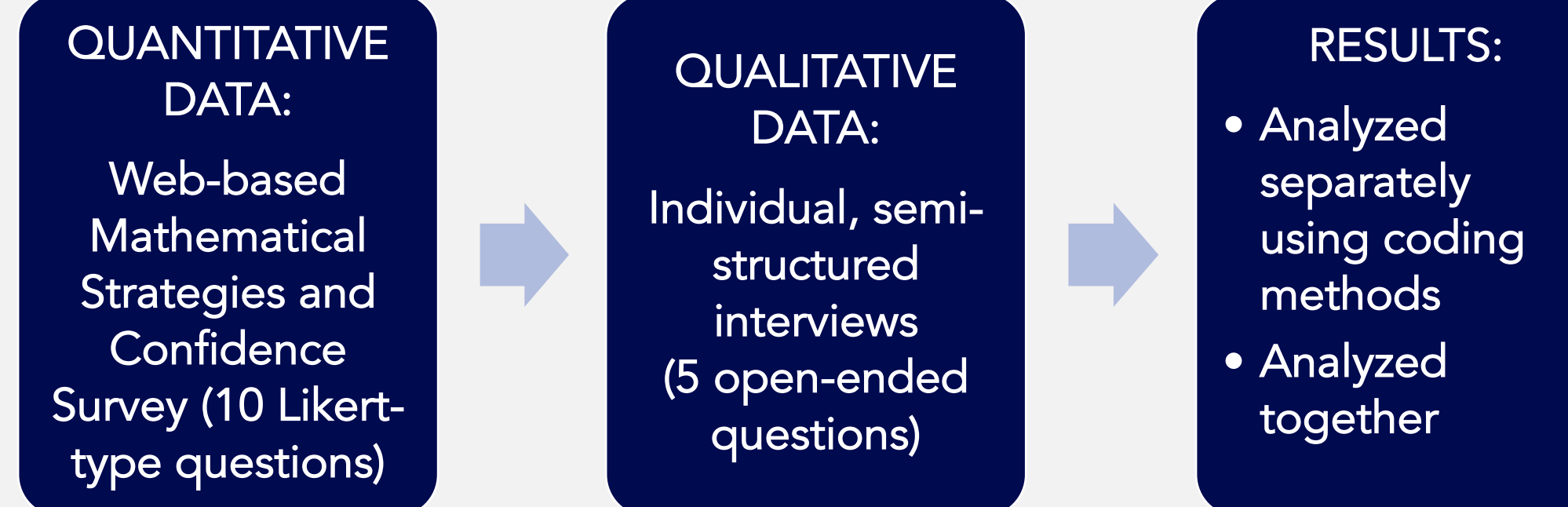
Participants' Confidence Rating Compared to Years of Experience Teaching



References to Themes Coded from Transcribed Individual Interviews

METHODOLOGY

As a mixed methods, explanatory sequential study, this research collected data first through a web-based survey and then individual semi-structured interviews. To follow social distancing protocols due to the COVID-19 pandemic, the survey was completed by participants independently via Survey Monkey, while the interviews occurred via Zoom. The participants in this study were educators currently teaching mathematics for students in grades K - 8. at a school in Southern California. The results from the survey using the Likert Scale and Likert-type questions were coded from 1 – 5 for results analysis. After the interviews were transcribed, answers were categorized and coded based on trends and themes emerging. Important keywords and connections were identified the transcriptions to help organize themes and subthemes. Overall, the data was examined for both similarities and differences between various participants.



IMPLICATIONS

- Further research should be done with a larger, more diverse population of teachers.
- Teachers with Single Subject Mathematics Credentials should also be studied to investigate the influence the strategies taught within a mathematics specific credential program affects their confidence.
- There is a combination of the influence on instructional confidence for teachers based on their preparation program exposure to mathematics strategies as well as their years of experience teaching.