



**Illinois Wesleyan University**  
**Digital Commons @ IWU**

---

John Wesley Powell Student Research  
Conference

2011, 22nd Annual JWP Conference

---

Apr 9th, 9:00 AM - 10:00 AM

## Using Vocabulary to Enhance the Understanding of Mathematics as a Language

Jennifer Monaco  
*Illinois Wesleyan University*

Leah Nillas, Faculty Advisor  
*Illinois Wesleyan University*

Follow this and additional works at: <https://digitalcommons.iwu.edu/jwprc>



Part of the [Education Commons](#)

---

Monaco, Jennifer and Nillas, Faculty Advisor, Leah, "Using Vocabulary to Enhance the Understanding of Mathematics as a Language" (2011). *John Wesley Powell Student Research Conference*. 21.

<https://digitalcommons.iwu.edu/jwprc/2011/ESposters/21>

This Event is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by faculty at Illinois Wesleyan University. For more information, please contact [digitalcommons@iwu.edu](mailto:digitalcommons@iwu.edu).

©Copyright is owned by the author of this document.



# Using Vocabulary to Enhance the Understanding of Mathematics as a Language

Jennifer Monaco/Advisor: Leah A. Nillas  
*Educational Studies, Illinois Wesleyan University*

## Research Questions

- What types of activities emphasizing vocabulary help students learn mathematical concepts?
- How can writing in the mathematics classroom enhance students' mathematical understanding?

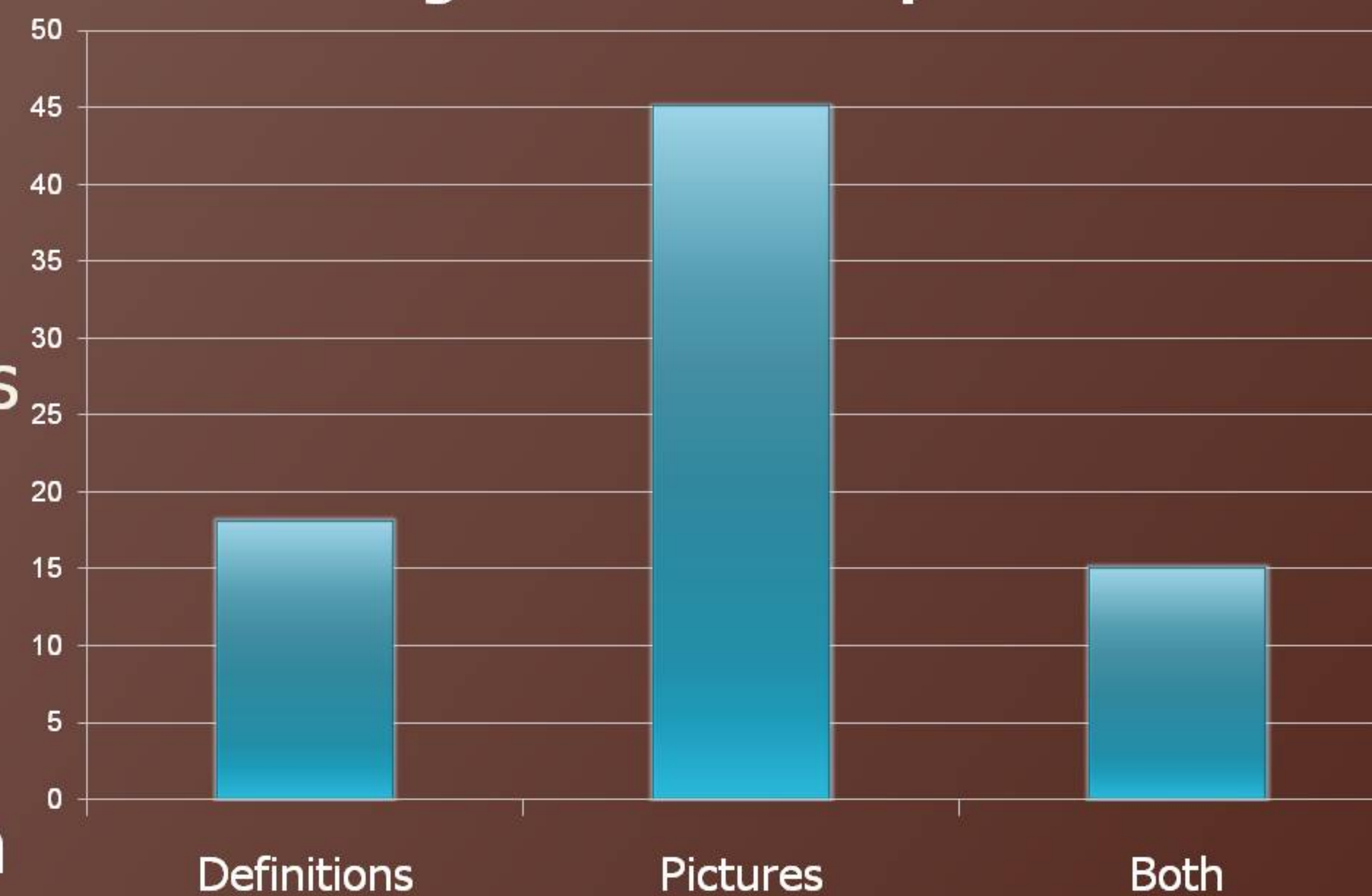
## Methodology & Framework

- The study took place at a rural high school in Central Illinois.
- Participants were students in grades 9-12 in 1 of 4 geometry classes.
- Six vocabulary-centered lessons were implemented in a semester long *teaching experiment*.
- Data collected and analyzed were student work, post-teaching reflections, and students' perceptions of vocabulary use in the mathematics classroom.

## Lessons & Activities

- Bingo
- Foldable
- Crossword Puzzle
- Pictionary
- Triangle Puzzle (Tarsia)
- Definitions, Illustrations and Categories

Do you learn vocabulary terms better through definitions or pictures?

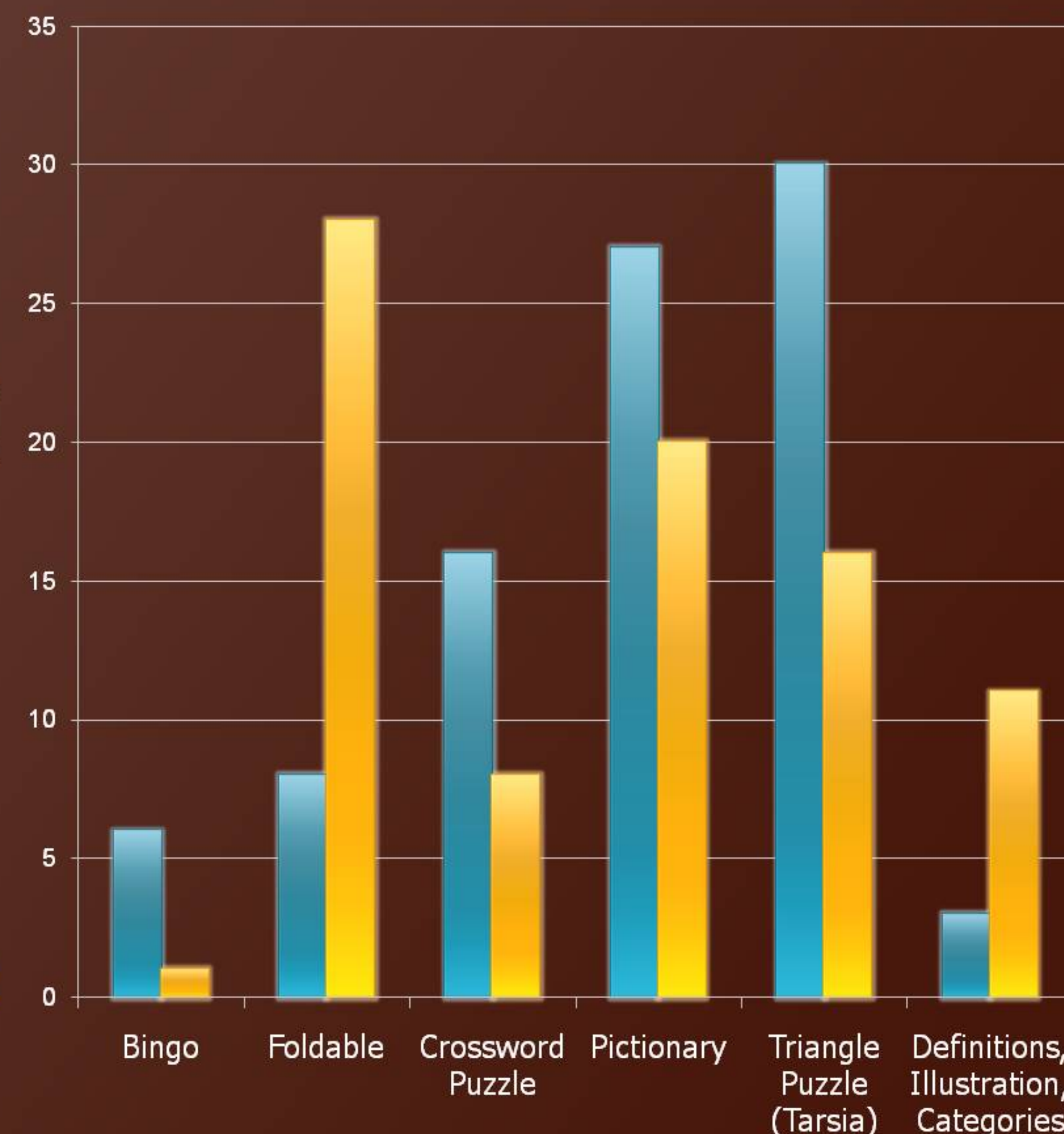


End of the year surveys demonstrated students' perceptions on vocabulary and strategies that help them be familiar with the material.

What was your favorite activity we did?

Which of the vocabulary activities we did was the most helpful?

Students recognize the difference between identifying their favorite activity and the most beneficial activity. Two of the three least favorite lessons showed the largest increase in votes from favorite to most helpful.



**"Vocab can get you familiar with the words you are learning. It can help you prepare yourself more for class and tests. You won't get lost in class and you will know what is being talked about." – Regina**

**"Knowing your vocabulary in geometry is like the building blocks to understanding the rest of the class." – Ken**

## Literature Summary

- Research studies and literature reviews focused on literacy in the mathematics classroom.
- Studies reviewed fall under three categories: comparing mathematics vocabulary and everyday English, implementing instructional strategies for teaching mathematics vocabulary, and communicating mathematically through reading and writing.
- Studies emphasized the significance of getting students excited and engaged in the development of their own mathematical literacy.

## Conclusion

- Activities that allow students to write, speak and visually represent vocabulary help students gain confidence in mathematics.
- Writing allows students to assess their knowledge. Teachers should analyze student work for feedback to identify gaps between teaching and learning.
- Vary lesson types and delivery techniques to reach all students. Include pictures and words when introducing new vocabulary and completing activities.