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How Student Learning Styles Affect Achievement and Participation in Mathematics

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Research Question

How do students with varied learning styles learn mathematics differently?

Literature Review

- Mokmin and Masood (2015) find that students who are taught with materials that accommodate their learning styles average higher scores in mathematics than students who are not.
- Hanci et al. (2016) conclude that educational activities and curriculum that match up with student learning styles increase learning and long-term retention in students.
- Students typically use more than one sense throughout the learning process, so it is important to create a learning environment that encourages the use of all senses (Ozereem & Akkoyunlu, 2015).
- Dunn and Griggs (1988) state that approximately 70% of students are affected by perceptual learning preferences.
- Students learn best when exposed to multiple learning styles (Ediger, 2013).

Methodology

- My study involved 16 fourth grade students from suburban, low-income school (10 girls, 6 boys).
- I analyzed four data sources: field notes, student anecdotes, lesson plans, and student work samples.
- I used Ryan and Bernard's (2003) theme techniques to analyze my data, looking for repetition, missing data, theory-related materials, and linguistic connectors.

Results and Data Analysis

- I found three prominent learning styles in my classroom; physiological, sociological, and emotional - the majority of my students were identified as physiological learners, which can be seen in Figure 1.
- Physiological learners learned best when exposed to videos, manipulatives, etc.
- Emotional learners needed reminders and personal interactions to stay on task.
- Sociological learners benefitted from group or individual work, depending on the students' preferences.

Conclusion

- Teachers should certainly take into account their students learning styles when planning curriculum and activities.
- Findings indicate that accommodating student learning styles leads to increased participation and achievement.
- A limitation in this study is the sample size - future research should be conducted with larger groups of students to see if consistent results are produced.

Specific Learning Style Elements

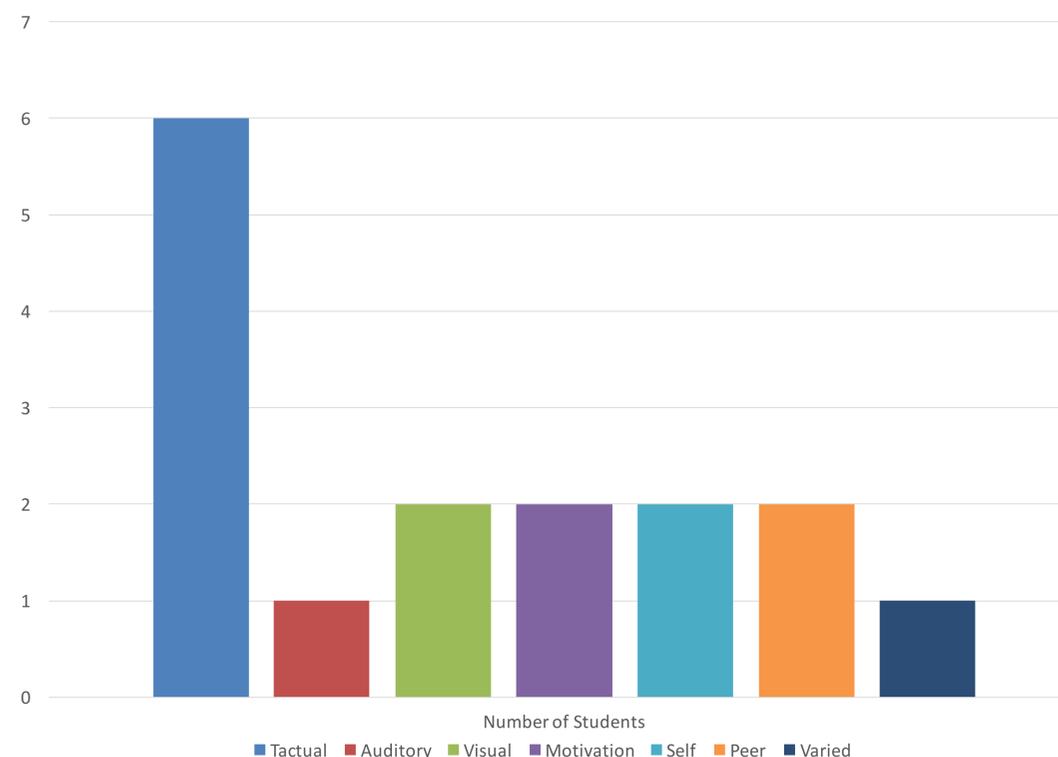


Figure 1. A wide range of learning style elements were represented in my classroom. This shows that students learn in many different ways. The majority of students appear to learn perceptually.