



The RITES FACTS

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MATHEMATICAL PROBLEMS EXPERIENCED BY STUDENTS WITH LEARNING CHALLENGES

Oral Language Problems:

- Students can have difficulty comprehending, organizing, and appropriately using the language terms associated with mathematics despite having adequate auditory skills.
- Some students are unable to understand the greater than ($>$) and less than ($<$) relationships.
- Many math words have multiple meanings. Sometimes these students may confuse the noun form of a word “color the circle red” for the same word used as a verb “circle the group of four.”
- There are many synonyms that describe the same operation (e.g., addition, plus, more than).
- The ability to solve word problems that have longer sentences and complex vocabulary is affected.
- Students have trouble verbalizing what they are doing as they analyze, plan, calculate, and carry out the steps they use.

Cultural and Language Differences:

- Students from culturally and linguistically diverse backgrounds who have learning problems often experience some problems with the language of mathematics.
- Words may be used in ways that are culturally unfamiliar:
 - e.g., odd and even
- The differences in structural relationships between words and syntax can be confusing:
 - e.g., the order of words in sentences
 - e.g., algorithmic formats (reading from left to right, up and down)

Cognitive Factors:

- Some students with learning problems may have difficulty with cognitive processing or intellectual functioning, including difficulties in the following areas:
 - Grasping new skills or concepts in comparison to age peers
 - Learning new information at a rate comparable to age peers
 - Retaining information
 - Comprehending and solving problems
 - Analyzing and synthesizing information
 - Grasping new learning without on-going repetition
 - Understanding relationships, cause and effect
 - Evaluating and making judgments
 - Drawing inferences, making conclusions and hypothesizing
 - Reasoning abstractly and dealing with complex issues

Emotional Factors:

- Affective factors influence math performance in many ways:
 - Attitude plays an important role in academic performance.
 - When students have a positive perception of their ability and a good attitude toward math, then they are more likely to approach math instruction in a positive manner.
 - Anxiety or depression can cause students to experience difficulty concentrating.
 - Learned helplessness may occur when students have a history of academic failure.

Information provided by RITES teacher Rachel Blomstedt, M.Ed.