

ELL, EL, or ESL Learners

- Old belief that math was less of a demand on ELL students
- Vocabulary/ Syntax – concept made up of the relationship between two words
 - “All number *greater/less* than X”
 - “Mary earns 5 *times as much as* John”
- Vocabulary/Semantics Difficulties –
 - “Words that are different from everyday meanings (eg. set, point, field, column, sum, random, table, altogether, round, equals)

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Word Problems

- “... word problems are artificial situations described using the mathematical language of problem solving...”
- “word-problemese.”
 - HANDOUT
 - Create Story problems using voc within EL students’ known voc
 - Differentiate numbers and voc
 - Talk it out – Draw it out

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Diverse Learners

- Process needs to be direct, explicit, and transparent
- ELL connections may be to native language – similarities and differences
- Remember just because they speak a language they may not read or write it.
- Strategies:
 - Slow Speech
 - Relate to real life
 - Relate to experiences of the student
 - Graphic Organizers
 - Limited use of Idioms
 - (Blachowicz & Fisher, 2006)

Other Instructional Ideas

- Reducing the Language Demands- Scaffolding EX:
 - “Find the solution by adding X an Y”
 - “Solve by adding X and Y”
 - Add X and y to solve
 - $X + Y = \underline{\hspace{2cm}}$
- Use Simple Verb Tenses and Constructions EX

• “Try to select...”	“Select...”
• “Carefully explain...”	“Explain...”
• “Give a detailed description...”	“Describe...” SEI

• (Flores, 2009)

- Use of visuals
- Manipulatives
- Delaying the use of certain kinds of abstract voc
- Use Flow Charts and Graphic Organizers
- Incorporate Cognates
- Avoid Introducing New Concepts or Process and New Voc Together
- Use of Technology
- Use of decimal point and comma vary – Measurement too?

• (Flores, 2009)

- Simplify Sentence Structure
- Delay the Use of Pronouns
- Repeat Patterns of Language, Then Paraphrase
- Prioritize Voc
- Make the Language of Mathematics More Demanding Over Time

• (Flores, 2009)

- How about the symbols?
- Charts and Graphs?

References

- Blachowicz , Camille & Fisher, Peter. (2006). *Teaching Vocabulary in All Classrooms*. Allyn& Bacon: Boston
- Flores, A (Editor). (2009). *Mathematics for Every Student: Responding to Diversity Grades 9-12*. NCTM: Reston VA
- [www. Coursecrafters.com](http://www.Coursecrafters.com)
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