

# LEARNING FROM THEORY

Why are problems that involve change situations difficult to solve?

In Newman's procedure (1983) to analyze errors when students solve word problems, there are six potential areas of difficulty.

- 1 Students may have difficulty in reading the text.
- 2 Students may have difficulty in comprehending the text.  
The dynamic nature of change situations, which involve an initial state, a change and a final state, makes word problems that involve change situations harder to comprehend.
- 3 Students may lack suitable strategies to handle the problem.  
Students may not have appropriate strategies to keep track of the changes in word problems with change situations.  
In the model method, students are taught the use of dotted lines and shading to keep track of changes in word problems.
- 4 Students may not be able to transform the information in the text into mathematical forms.  
Change situations are dynamic. However, models that students draw are static. Students may find it difficult to represent dynamic situations using static representations.  
In the next chapter, we will deal with advanced skills such as 'cutting up' units and 'shifting' units in the model method. Such skills allow students to represent dynamic information on static diagrams.
- 5 Students may lack computational skills.
- 6 Students may not be able to use computation results to solve the problems.  
As change situations are dynamic, students may not recall the changes made to a model and may not be able to trace the original situation.

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*Reference:*

Newman, A. (1983). *The Newman Language of Mathematics Kit — Strategies for Diagnosis and Remediation*. Sydney, Australia: Harcourt Brace Jovanovich Group.

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