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# The Simple View of Reading: Of Importance to Educators


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## Objectives

- To introduce you to important research summed up in the Simple View of Reading
- To explain the Simple View formula
- To demonstrate how the Simple View of Reading is relevant to assessment and instruction



## Topics

1. What is Reading?
2. The Simple View of Reading
3. Implications for Assessment
4. Three General Types of Reading Difficulties
5. Practical Application
6. Conclusions



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# What Is Reading?

## A Complex Map of Reading

From: Vellutino et al (2007), p. 6

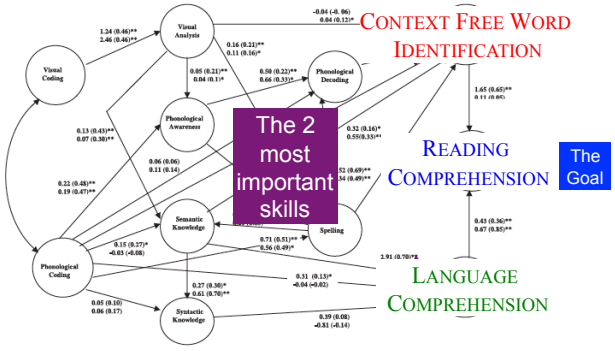
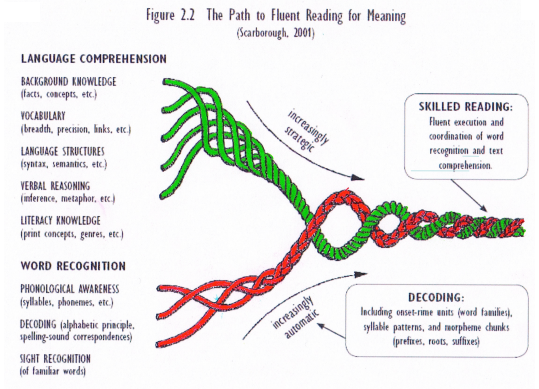



FIGURE 1 Convergent skills model of reading development: Younger/Older groups. *Note:* Coefficients for the Younger group are always listed above those for the Older group. Standard coefficients are in parentheses. *$p \leq .05$. **$p \leq .01$.



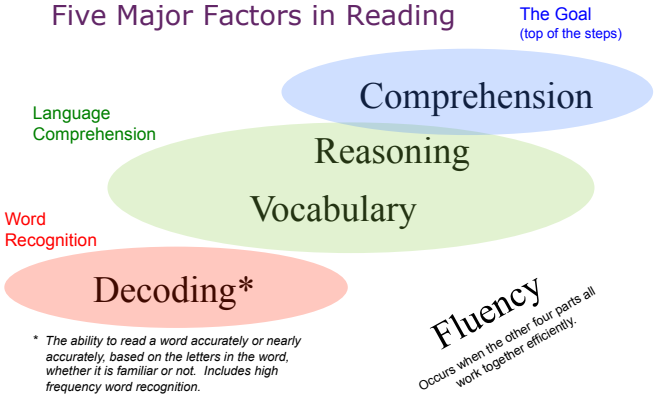
## The Scarborough Rope Model

Figure 2.2 The Path to Fluent Reading for Meaning
(Scarborough, 2001)






## A Simplification by readsters: Five Major Factors in Reading




* *The ability to read a word accurately or nearly accurately, based on the letters in the word, whether it is familiar or not. Includes high frequency word recognition.*



## Major Components of Reading Comprehension

- Reading comprehension occurs when students are able to decode the words in the text and can comprehend the language in the text.

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# The Simple View of Reading



## The Simple View of Reading

- A formula introduced by Gough and Tunmer in 1986

**Decoding (D) x Language Comprehension (LC) = Reading Comprehension (RC)**

**D x LC = RC**

- The formula was demonstrated to work by Hoover and Gough's study, published in 1990
- The essence has been replicated many times since

Note: Scores for D & LC are between 0 and 1.



## The Simple View of Reading

**Decoding (D) x Language Comprehension (LC) = Reading Comprehension (RC)**

- Each variable has a value of 0 (no competence) to 1 (perfect competence) or 0% to 100%.
- The product of the two variable will be less than either variable unless both variables are 1 or 100%.
- Example:
  - Decoding score of .60 x Language Comprehension score of .80 = Reading Comprehension of .48 or 48%
  - .60 x .80 = .48
- A perfect RC score would require perfect D and LC scores: 1.0 x 1.0 = 1.0



## Define the variables:

### Language Comprehension (LC)

- The ability to understand language by using semantic (word meaning) information to derive meaning from individual and related multiple sentences (Gough & Tunmer, 1986)

## Language Comprehension continued

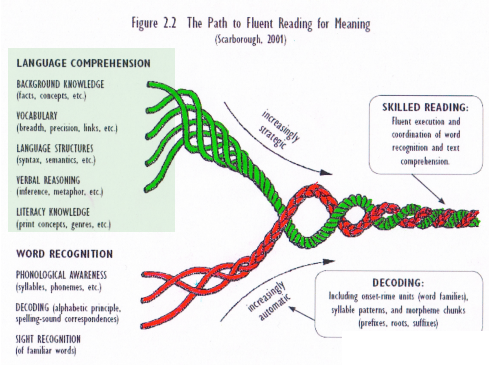
### Language Comprehension (LC) Abilities

- Vocabulary
- Background Knowledge
- Language Structures
- Verbal Reasoning
- Story Structure, Genre, etc.
- Higher Order Reasoning Skills





## The Scarborough Rope Model








## Define the variables

### Decoding (D)

- Efficient word recognition skills (Gough & Tunmer, 1986)
- Definition includes rapid recognition of all words, whether decodable or not (Hoover & Gough, 1990)



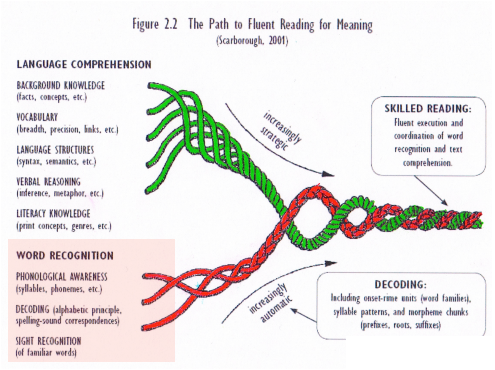


## Decoding (continued)

### Decoding (D) Skills

- Sight word reading
- Phonics: ability to decode novel (unfamiliar) words with regular spelling patterns
  - Phonological awareness

## The Scarborough Rope Model



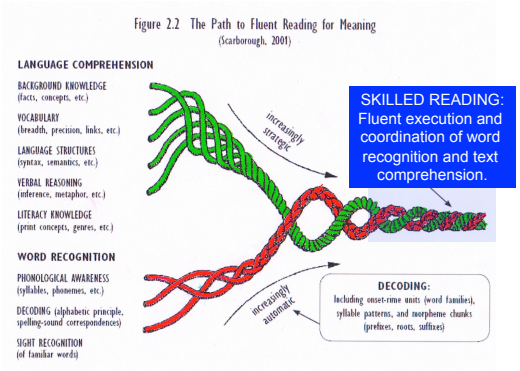
## Define the variables

### Reading Comprehension (RC)

- The ability to understand **written** language by using semantic information to derive meaning from individual and related multiple sentences (Gough & Tunmer, 1986)
- Reading Comprehension depends on being able to turn print into language

## The Scarborough Rope Model



## Reading Comprehension continued

### Reading Comprehension (RC) Skills

- All skills listed under Decoding and abilities listed under Language Comprehension

Language Comprehension Abilities
- Vocabulary
- Background Knowledge
- Language Structures
- Verbal Reasoning
- Story Structure, Genre, etc.
- Higher Order Reasoning Skills

Decoding Skills
- Sight word reading
- Phonics and ability to decode novel (unfamiliar) words
- Phonological awareness

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# First Research Study To Support the Simple View Formula



## Original Simple View of Reading Research Study

- 1990 Hoover & Gough study
  - Longitudinal Study
    - Obtained scores for Decoding (D), Language Comprehension (LC), and Reading Comprehension (RC) over a 4 or 5 year period
    - Grades K - 4
  - 5 sites in Texas
  - Students
    - 254 students
    - Bilingual
  - Assessment
    - D assessed with nonsense words
    - LC assessed with retell and questions after ***hearing*** a story
    - RC assessed with retell and questions after ***reading*** a story



## Results of Research

- High correlations between actual Reading Comprehension scores and the product of Decoding and Language Comprehension scores
- The correlations (Hoover & Gough, 1990):
  - 0.84 in first grade
  - 0.85 in second grade
  - 0.91 in third and fourth grade

Note: 0.3 is weak, 0.7 is strong in terms of correlations



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# Implications for Assessment

## Examples of Reading Assessment at Many Schools

- The following types of assessments are often used to determine a student's overall reading competence
  - Words Correct per Minute (WCPM)
    - DIBELS ORF (sometimes with Retell Fluency)
    - AIMSWeb ORF (sometimes with CLOSE OR MASE
  - Reading Levels
    - DRA
    - Fountas & Pinnell
  - State or other high stakes tests (reading section):
    - State Tests
    - Stanford tests
  - Many others





## Implications for Assessment

- Oral Reading Fluency WCPM and Reading Levels are scores of reading comprehension.
  - The Simple View of Reading tells us ORF (RC) or a Reading Level is not enough information to use to design instruction.
- If ORF or the Reading Level tells us a student is below benchmark, do we know if the weakness is Decoding (D) or Language Comprehension (LC), or both?
  - The answer is no. Further diagnosis is needed.





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# Three General Types of Reading Difficulties



## The Simple View Formula Defines Three Categories of Reading Difficulties

1. WEAK DECODING
   - Students with only Decoding (D) weaknesses
   - Dyslexia is the extreme form.
2. WEAK LANGUAGE COMPREHENSION
   - Students with only Language Comprehension (LC) weaknesses
   - Hyperlexia is the extreme form
3. MIXED
   - Students with weaknesses in both Decoding (D) and Language Comprehension (LC)

## WEAK DECODING: Only D Is Weak

- Weak D = .20 or 20%
- Strong LC = 1 or 100%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| .20 | x | 1.0 | = | .20 |

- When LC is strong, D and RC will be equal.
- When D is the student's only weak area, instruction that improves D will improve RC equally.



## WEAK DECODING: Result from Improved Decoding

- D improves from 20% to 60% after intervention.
- RC also improves from 20% to 60%.

| Decoding | Language Comprehension | Reading Comprehension |
|---|---|---|
| D | LC | RC |
| .60 | 1.0 | .60 |

- When LC is strong, D is the only limit to RC.



## WEAK DECODING: Comparison of Pre and Post Scores

Before Intervention
- Decoding is 20%; Language Comprehension is 100%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| .20 | x | 1.0 | = | .20 |

After Intervention
- Decoding improves from 20% to 60%
- Reading Comprehension also improves from 20% to 60%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| .60 | x | 1.0 | = | .60 |



## WEAK DECODING: What to Do?

- Provide intervention to improve Decoding (D) skills
  - Student needs to be able to accurately and fluently read words, both in context and out of context
  - Language Comprehension (LC) will continue to improve to be at or above grade level with the core instruction in content area subjects.
- Improving Language Comprehension will have minimal or no effect on Reading Comprehension (RC)

## Weak Language Comprehension: Only LC Is Weak

- Strong D = 1.0 or 100%
- Weak LC = .3 or 30%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 1.0 | x | .30 | = | .30 |

- When D is strong, LC will be equal to RC.
- When LC is the student's only weak area, instruction that improves LC will improve RC equally.





## Weak Language Comprehension: Result from Improved Decoding

- LC improves from 30% to 50% after intervention.
- RC also improves from 30% to 50%.

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 1.0 | x | 0.5 | = | .50 |

- When D is strong, LC is the only limit to RC.





## Weak Language Comprehension: Comparison of Pre and Post Scores

Before Intervention
- Decoding is 100%; Language Comprehension is 30%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 1.0 | x | .30 | < = > | .30 |

After Intervention
- Decoding improves from 30% to 50%
- Reading Comprehension also improves from 30% to 50%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 1.0 | x | .50 | < = > | .50 |





## Weak Language Comprehension: What to Do?

- Provide intervention to improve Language Comprehension (LC) abilities
  - This a complex area and further diagnosis may be necessary to determine appropriate intervention
  - Problems can fall into many categories, including:
    - Memory for literal comprehension
    - Reasoning skills
    - Understanding language structure (syntax, semantics, etc.)
    - Knowledge of content area
    - Vocabulary
- Improving Decoding (D) will have minimal or no effect on Reading Comprehension (RC)

## MIXED: Both D and LC Are Moderately Weak

- Some weakness in D = 0.4 or 40%
- Some weakness in LC = 0.6 or 60%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 0.4 | x | 0.6 | = | 0.24 |

- When both D and LC are less than 1 or 100%, RC will be lower than either one because of the multiplier effect of the Simple View formula.
- When both LC and D are areas of weakness, instruction in both areas is necessary to achieve significantly stronger RC.



## Mixed: Result from Improved Decoding

- D improves from 40% to 100% after intervention.
- LC stays the same at 60%.
- RC improves from 24% to 60%.

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 1.0 | x | .60 | = | .60 |

- Even when D is "perfect", LC still limits RC.



## Mixed: Comparison of Pre and Post Scores Decoding Improves

Before Intervention
- D is 40%; LC is 60%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| .40 | x | .60 | = | .24 |
| < | | | | > |

After Intervention
- D improves from 40% to 100%
- RC improves from 24% to 60%
- RC is still hampered by weakness in LC, even with "perfect" decoding.

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| 1.0 | x | .60 | = | .60 |
| < | | | | > |



## Mixed: Result from Improved Language Comprehension

We'll Do the Math Together

- D stays the same at 40%.
- LC improves from 60% to 100% after intervention.
- RC improves from 24% to < What number goes here?

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | x | LC | = | RC |
| Enter D score > | x | | = | |
| | | Enter LC score ^ | | Calculate RC score ^ |

- Even when LC is "perfect", D still limits RC.

## Mixed:
## Result from Improved Language Comprehension

We'll Do the Math Together

- D stays the same at 40%.
- LC improves from 60% to 100% after intervention.
- RC improves from 24% to < What number goes here?

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | X | LC | = | RC |
| Enter D score > | X | | = | |
| | | Enter LC score ^ | | Calculate RC score ^ |

- Even when LC is "perfect", D still limits RC.



## Mixed: Comparison of Pre and Post Scores
## Language Comprehension Improves

Before Intervention
- D is 40%; LC is 60%

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | X | LC | = | RC |
| .40 | X | .60 | = | .24 |
| | | < | | > |

After Intervention
- D improves from 40% to 100%
- RC improves from 24% to 60%
- RC is still hampered by weakness in LC, even with "perfect" decoding.

| Decoding | | Language Comprehension | | Reading Comprehension |
|---|---|---|---|---|
| D | X | LC | = | RC |
| 4.0 | X | 1.0 | = | .40 |
| | | < | | > |



## Mixed:
## What to Do?

- Provide intervention to improve both Decoding and Language Comprehension skills
  - Decoding must be accurate and fluent
  - Language Comprehension must also be strong
    - This may require further diagnosis to determine the specific area of weakness.
- Improving only Decoding or Language Comprehension will have a limited effect on Reading Comprehension



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# Conclusion

## Decoding and Language Comprehension

- When Decoding is strong, the only limitation to Reading Comprehension is Language Comprehension.
- Teach decoding skills in the early grades.
  - Decoding is a narrow set of skills.
  - Decoding should be well established no later than the end of 3rd grade, and earlier for many students.
- Once Decoding is established, teaching Reading Comprehension becomes the domain of content area teachers.



## What Does the Simple View Teach Educators?

- Reading Comprehension has two separately identifiable components
  - Decoding
  - Language comprehension
- RC is strong only if both D and LC are strong.
- If D and LC are not 1, RC will be lower than either one.
- If RC is low, D or LC, or both, will also be low.



## How Is the Simple View of Reading Important to Educators?

- We need to insure decoding is strong as early as possible.
- Language comprehension is taught in all classes, not just reading and language arts. Content area teachers in all grades need to insure that students are getting appropriate content knowledge.
- Before effective intervention can be designed, we need to know whether D, LC, or both are weak.
  - Assess D in all grades when RC is low.
  - Do not assume that LC is the problem in upper grades.



## Did We Meet Our Objectives?

- Were you exposed to important research about the Simple View of Reading?
- Do you understand the Simple View formula?
- Did we demonstrate the relevance of the Simple View of Reading to assessment and instruction?

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# Resources



## References

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