



Scaffolding word-solving (decoding) while a student reads a challenging book with teacher support.

Presented by Dr. Emily Rodgers
Dr. Lisa Patrick's EDUTL class on April 4, 2022

Using Teaching Prompts from
Literacy Lessons Designed for Individuals Clay (2016)
to Scaffold Decoding While Reading Continuous Texts



Learning Goals

Define scaffolding in terms of

- Instructional Contingency
- Domain Contingency
- Temporal Contingency
- Sort teaching prompts in terms of giving more or less information to the student (instructional contingency)
- Determine whether teaching interactions are domain contingent.



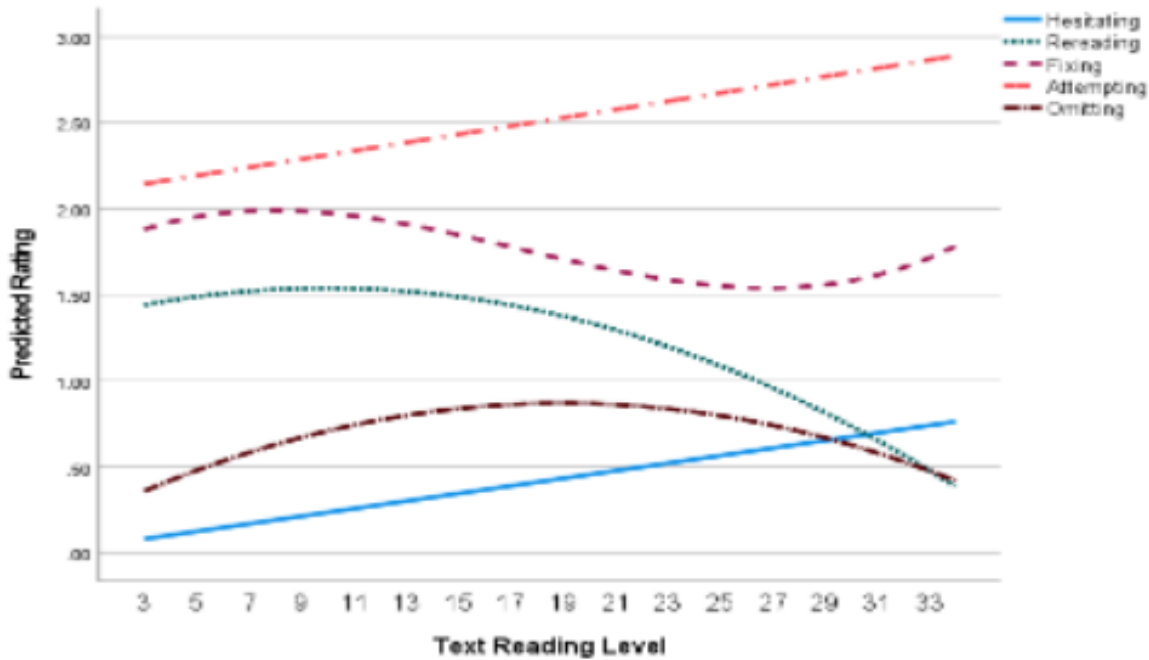
Theoretical Frames

- **Development** viewed as continuous change over time (Siegler, 1996) like overlapping waves
- **Literacy development** (word solving) - change over time in word solving (Clay, 2001; McGee et al. 2016)
- **Scaffolding** a process to support a novice to do something beyond current independent skill– the goal is for the learner to take over (Wood et al., 1976)
- **Language a tool** for scaffolding because it can mediate thinking and change problem-solving activities (Luria, 1978)
- **Decoding as problem-solving** (Johnson et al. 2022)



Figure 3

Predicted Ratings for Main Categories by Text Reading Level for Fast-Progress Group



Attempting
Fixing
Rereading
Omitting
Hesitating

Johnson et al. (2021)



Wood et al. (1976) introduced the concept of scaffolding in their tutor-child dyads study in which a tutor helped a child construct a toy pyramid using wooden blocks.

Scaffolding is a process “that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts” (p. 90).



“...in order to make that vital selection of what kind of demand you’re going to be put on the learner you have to have internalized Clay’s analysis of the reading domain.

Wood, 2003 p. 16



Clay on Scaffolding

“The teacher’s prompts and questions are critical.”

Clay, 2016, p. 140



Language is a tool to mediate thinking (Luria, 1979)

Teacher talk gives the learner tools to use

- to monitor reading
- to problem-solve
- to evaluate

“I gots to make it match”

“I’ve got so many things in my head I can hardly think.”

“That didn’t make sense!”

“Hold up! That’s a *k*!”

“The fish, wait, that’s not fish.”

Language guides behavior and can be used to change it.⁹



Clay on Scaffolding

What seems to be a casual conversation between child and adult in the context of reading and writing is actually an excellent example of a highly skilled adult moving a child through his zone of proximal development (Rodgers, 2000).

Clay, 2016, p. 231

Citing Rodgers, E., (2000). Language Matters: When is a scaffold really a scaffold?



Contingent teaching is needed for scaffolding

Three conditions which, taken together, result in scaffolding a student's performance:

- **Domain contingency** (what to focus on)
- **Instructional contingency** (giving more information, depending on learner response)
- **Temporal contingency** (if and when to help - *We won't cover this one – little is known*).

Wood, 2003



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Examining the Nature of Scaffolding in an Early Literacy Intervention

Emily Rodgers

Jerome V. D'Agostino
The Ohio State University, Columbus,
USA

Sinéad J. Harmey
Queens College, City University of New
York, Flushing, USA

Robert H. Kelly
Katherine Brownfield
The Ohio State University, Columbus,
USA

ABSTRACT

In this study, we used Reading Recovery as the context to examine the relationship between three types of contingent teaching (temporal, instructional, and domain contingency) and student outcomes in a one-to-one tutoring setting. We first created a National Teacher Effectiveness Index all Reading Recovery teachers in the country and then used that to identify two distinct groups of teachers from an existing data repository: those whose students had higher average gain scores at the end of the school year (n = 6) or lower average gain scores (n = 4). We coded 1,199 teacher and student move-overs for instructional contingency (the amount of information provided at difficulty), no main effects, and a nonsignificant interaction. No differences for instructional contingency (what the teachers focused on) existed, however, for domain contingency (what the teachers focused on when providing help). Specifically, teachers of students with higher scores had 8.3 greater odds of prompting students to use sources of information they were neglecting while trying to decode a word. These findings have implications not only for reading instruction and intervention but also ways in which scaffolding is studied.

Simply providing one-to-one assistance is not sufficient to progress on complex tasks such as learning to read (Elbaum, Vaughn, Hughes, & Moody, 2000; Rodgers, D'Agostino, Harmey, & Kelly, 2014). There seems to be something about the nature of teacher-student interactions at the point of difficulty that matters to student progress (Rodgers, 2004). Research has theorized since the mid-1970s about the nature of these interactions, beginning with Wood, Bruner, and Ross's (1976) coin- term *scaffolding* to describe the kind of interactions between dyads that help learners complete a task.

After decades of research, however, there is no consensus literature about how to operationalize scaffolding, and few studies exist about its effectiveness (van de Pol, Volman, & Beishuizen, 2010). Even so, the few effectiveness studies that have been conducted supported the notion that scaffolding, as defined in various ways, is associated with improved learning (van de Pol & Elbers, 2007). Other studies have provided a wealth of descriptive information about the nature of interactions between student and teacher that related to successful outcomes (van de Pol et al., 2010).

Van de Pol and colleagues (2010) provided several recommendations to improve the measurement of scaffolding. The authors argued that student measures should be included because

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FEATURE ARTICLE

Scaffolding Word Solving While Reading: New Research Insights

Emily Rodgers

Although there is much discussion about scaffolding, what do we really know about it? Apparently, what we decide to focus on may matter more than how much help we give.

For the last 40 years, beginning with Wood, Bruner, and Ross's (1976) seminal study, researchers and educators have tussled with how to operationalize scaffolding in practice (E. Rodgers, D'Agostino, Harmey, Kelly, & Brownfield, 2016). In fact, a recent review of scaffolding research found that, in a 10-year period alone, from 1998 to 2009, all covering a wide range of subject areas and grades (Van de Pol, Volman, & Beishuizen, 2010).

Much of that body of research has been qualitative in nature, providing us with rich case studies of teachers scaffolding students' understandings of content (Van de Pol et al., 2010). From those studies, we have learned much about instructional contingency, which refers to the amount of help we provide to a learner at difficulty. Teachers who are instructionally contingent, it is thought, increase or decrease the amount of help they provide, depending on the student's success with solving a problem.

However, little attention has been paid to another facet of scaffolding, called domain contingency, even though Wood, one of the authors of the 1976 study, identified both instructional and domain contingencies as important dimensions of scaffolding (Wood & Wood, 1996). Although instructional contingency is about how much help to provide the learner, domain contingency is about what the teacher chooses to focus on in the interaction.

This lack of attention about what to focus on is surprising if we agree with the idea that scaffolding moves ought to take into account both what the learner can do and the domain itself (Fisher & Frey, 2008). It makes sense to think that what we decide to focus on to help a student in difficulty will matter as much as how much help we give.

The purpose of this article is to share teaching implications of scaffolding word solving for

beginning readers that emerged from a recent study that I coauthored (E. Rodgers et al., 2016). I will start by providing the background of the study and describing our major conclusions. The rest of this article will center on what we learned about being instructionally and domain contingent when supporting beginning readers in word solving.

Insights From a Recent Scaffolding Study

As a reading teacher for nearly 10 years working with small groups of struggling readers, I became well aware that I needed to learn more about helping students problem solve difficult words while they were reading. My inquiry led me to graduate work and to my involvement in several studies about scaffolding (E. Rodgers, 2000, 2004). From that previous research, it seemed clear to me that teachers varied the amount of help they gave students at difficulty, but it was not clear whether or how the variation mattered to student outcomes.

Therefore, the current study was designed with this question in mind: Are there differences in the amount of help that teachers provide to students to problem solve new words, and do these differences matter to student progress? The goal of the study was to shed more light on how scaffolding might be better operationalized in practice.

Study Design

The context for the present research was Reading Recovery, a literacy intervention for struggling first-

Emily Rodgers is an associate professor in the College of Education and Human Ecology at The Ohio State University, Columbus, USA; e-mail: rodders.42@osu.edu.



To be **domain contingent**, prompt the student at difficulty to use a source of information that they neglected.

1. **pony/horse**

Student used: M S

Teacher prompts: V “Look at the first letter.”

2. **wake/wonder**

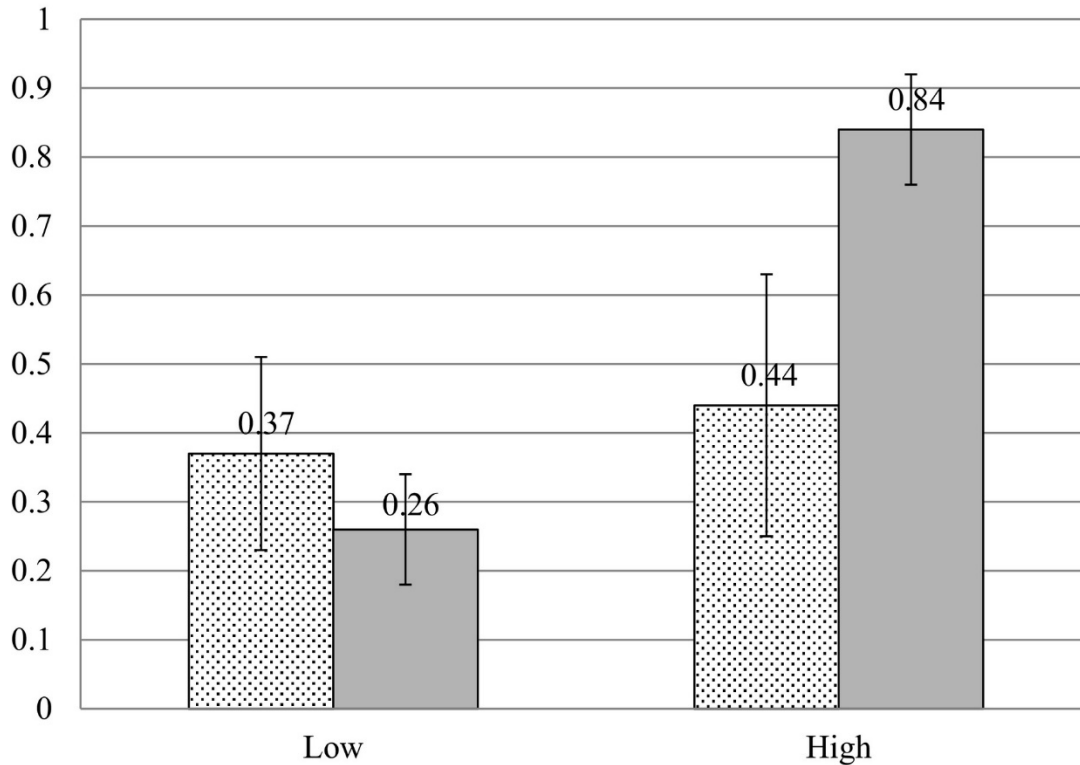
Student used: V

Teacher prompts:

3. **murmured/mumbled**

Student used: MSV

Teacher prompts:



“ Teachers of students with higher outcomes had 8.3 greater odds of prompting students to use sources of information that they were neglecting while trying to decode a word. ”





Table 1
Interaction With Domain-Contingent Move

Interaction	Explanation
Text: "But the truck went on." ^a	
Student: "But the tr..." I don't know that word.	The student's attempt <i>tr</i> for <i>truck</i> uses visual information but neglects meaning and structure.
Teacher: Yes, it starts that way, <i>tr-</i> . Now try it again and think about what would make sense in the story.	This move is domain contingent because the teacher prompts the student to use meaning, a source of information that the student neglected.

^aCowley, J. (1998). *Stop!* Chicago, IL: Wright Group/McGraw-Hill.



Practice with Domain Contingency

A. *Domain contingent?*

Student: "Big /t/ /k/, /t/ /k/" [truck]

Teacher: That's how it starts. Now think about the story.

B. *Domain contingent?*

Student: "Make sure you eat all the vegetables" [fruit]

Teacher 1: Those aren't vegetables, what would make sense...?

Teacher 2: "Look at the first letter"

C. *Domain contingent?*

Student: "Woof, woof, barked the puppy [poodle]"

Teacher: Puppy makes sense and starts that way. But let's look at the rest of the word. (teacher claps and says "poo/dle.")



Instructional contingency

Wood's simple tutoring rule

- When the learner is in trouble, give more information.
- When the learner is experiencing success, give less information.

Being instructionally contingent means dialing up or down the amount of information you give a student who is trying to solve a word.

To be instructionally contingent you need to be able to assess the amount of information in the teaching prompts.



Self-Monitoring pp. 134-135

A. Try that again.

B. You made a mistake on that page. Can you find it?

C. (Covering the word) What do you expect to see at the beginning?

Least informationMost information



Cross-checking on information

A. It could be ..., that would make sense and sound right, but look at this letter.

B. Are those the letters you would expect to see if the word was pony?

C. Check! Does it look right and sound right to you?

D. What else could it be?

Least informationMost information





Locating and using known words and letters in continuous text p. 131-132

A. It looks like the first letter in your name

B. That sounds like the beginning of Jake.

C. We made that word on the board.

D. You wrote that word by yourself yesterday.

E. What do you think?

F. [Tell the child the word and have him check] What do you think?

G. [Tell the child the word and have him check] Would that make sense?

H. [Tell the child the word and have him check] Would 'went' fit there?

I. [Tell the child the word and have him check] Do you think it looks like 'went'?

J. [Teaching after the first reading to teach locating errors in text] Can you hear this letter?

K. [Teaching after the first reading to teach locating errors in text] You said ... was that right?

Least informationMost information





Table 2
Instructional Contingency Rubric: Increasing Levels of Help*

Level	Definition	Sample Teacher Moves
1. Prompting	Provides no information about anything helpful to use or do; calls on the student to solve the problem.	"What can you try?" "Try that again." "What's that word?" "Were you right?"
2. Prompting with information	Provides some general information; the student must still decide what to use or do.	"You read that word on the other page." "You know this word." "You wrote that word yesterday."
3. Directing	Provides specific information about what the student can use or do to solve the problem; the student must solve the problem.	"Reread and think about what would make sense and look right." "Does that make sense?" "Does that sound right?" "Does that look right?"
4. Demonstrating	Provides all of the information needed to solve the problem by taking the student role and modeling, but the student must still solve.	Teacher uses a card to show the syllables and articulates each part.
5. Telling	Provides all the information needed; no more problem solving is needed.	"That word is <i>picnic</i> ." "You're right, <i>picnic</i> ."

Note. Adapted from "Examining the Nature of Scaffolding in an Early Literacy Intervention," by E. Rodgers, J.V. D'Agostino, S.J. Harmey, R.H. Kelly, and K. Brownfield, 2016, *Reading Research Quarterly*, 51(3), p. 351. Copyright 2016 by the International Literacy Association. Adapted with permission.
*Rubric starts with the least amount of help (prompting) and increases to the most (telling).



Table 3
Interaction With Instructionally Contingent Move

Interaction	Explanation
Text: "But the truck went on." ^a	
Student: "But the..." I don't know that word.	The student makes no attempt.
Teacher: Look at the letters in the word.	The teacher's initial move is coded as directing, level 3.
Student: "But the tr..."	The student is getting closer.
Teacher: Yes, and now what would make sense?	This move is instructionally contingent because the teacher reduces the amount of help from her initial response. "Yes, and now what would make sense?" is coded as level 2, prompting with information, which is less help than her initial move, "Look at the letters in the word," level 3.

^aCowley, J. (1998). *Stop!* Chicago, IL: Wright Group/McGraw-Hill.

Still a theory! No difference in teachers' instructional contingency and student outcomes – they were all just as instructionally contingent.



Example of an instructionally contingent interaction

Student: “I don’t know that word.” [truck]

Teacher: What do they put milk in?

Student: A box

Teacher: It says, “But the tr..”



Summing up: What we know and need to know

- Scaffolding is more than teaching.
- Scaffolding, if successful, results in a student being able to do something independently where once help was needed.
- To study scaffolding, need to look for change in what a student can use or do while solving (i.e. decoding) as well as change in what the teacher is doing.
- What the teacher does (i.e., how much information is given, what the teacher draws the student's attention to) when scaffolding word solving seems important to a student becoming an active word solver, developing, adjusting, and using better strategies to solve words.
- Is the teaching domain contingent? Instructionally contingent?
- Language is a tool to mediate or change what the student tries or uses at difficulty.
- We have studied whether scaffolding sources of information is related to student outcomes (it is) – but not scaffolding problem solving action. That's next!



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