Instruction, Cognitive Scaffolding, and Motivational Scaffolding in Writing Center Tutoring

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In this study, we quantitatively analyze the discourse of experienced writing center tutors in 10 highly satisfactory conferences. Specifically, we analyze tutors' instruction, cognitive scaffolding, and motivational scaffolding, all tutoring strategies identified in prior research from other disciplines as educationally effective. We find that tutors used the instructional strategies of telling and suggesting, the cognitive scaffolding strategy of pumping, and the motivational scaffolding strategy of showing concern most frequently. We argue that the interdisciplinary analytical framework that we developed and describe in this article can facilitate further analysis of tutors' talk and thus help move research beyond the local level of the individual writing center. Finally, we point to some ways that our findings can inform tutor training.

As Stephen North once wrote and as any tutor knows, in writing center conferences, "talk is everything" (75). However, even though writing center research has progressed substantially since North's famous statement first appeared in 1984, as Michael Pemberton points out, very little empirical research describing writing center talk has been conducted. Over the past few years, the two of us have tried to help fill this gap in the research (see Mackiewicz and Thompson; Thompson; Thompson and Mackiewicz). Here, we report on our third coauthored and most comprehensive study, a quantitative analysis of tutoring strategies identified through research conducted in other disciplines as educationally effective. Our research differs from most quantitative studies of writing center discourse in that we limited our analysis to conferences that trained, experienced tutors conducted and that students and tutors rated as far above average or highly satisfactory. Therefore, instead of attempting to describe issues such as gender or power by coding a random selection of conferences, we selected the 10 highest-rated conferences from our existing corpus of 51 writing center conferences to identify what arguably good tutors—at least in one writing center—did in their attempt to provide educational opportunities for students.

In this article we extend our previous discussions of cognitive and motivational scaffolding, as well as describe in detail the more explicitly directive tutoring strategy of instruction. Defined generally, scaffolding metaphorically refers to a learning opportunity in which a more expert tutor teaches a less

expert student to answer a question, correct an error, or perform a task without telling the student the answer or doing the work for him or her. The tutor acts as a scaffold, helping the student to do things he or she cannot perform alone. Instruction refers to the directive aspects of tutoring—supplying solutions or options rather than supporting or making room for students to generate solutions themselves. Our goals for this article are the following: (1) to present the framework—the coding scheme—that we developed, a scheme that we believe can facilitate further study of tutors' talk and thus help move research beyond the local level of the individual writing center; (2) to comprehensively describe and analyze 10 experienced tutors' strategies in satisfactory conferences, (3) to point to some ways that our findings can inform tutor training.

Rebecca Day Babcock, Kellye Manning, and Travis Rogers have suggested that the notion of scaffolding, stemming from the work of educational psychologists David Wood, Jerome S. Bruner, and Gail Ross, is important for understanding what experienced tutors say and do in writing center conferences to support student writers' improvement. However, few published empirical studies exist that examine scaffolding. Most research about scaffolding examines problem-solving disciplines such as math (Putnam) and physics (Chi), readily describable tasks such as decoding in adult literacy instruction (Cromley and Azevedo), and the use of specialized computer software (Lehman et al.). Such research describes in detail the strategies that both experienced and inexperienced tutors use when working in highly structured domains. In this article and in our previous studies, we draw upon this research to analyze the tutoring strategies of experienced writing center tutors.

We began our analysis with the coding scheme that Jennifer G. Cromley and Roger Azevedo developed to examine tutor discourse, specifically, the tutoring strategies that experienced and inexperienced tutors used to teach decoding skills to adult literacy students. Cromley and Azevedo developed their coding scheme from previous studies examining instruction and scaffolding in tutoring sessions. We chose their scheme for classifying tutoring strategies as the basis for our own because of its foundation in studies of tutoring and because it describes tutoring strategies in detail. However, the well-structured task of decoding, like math (Putnam) and physics (Chi) problem solving and software procedures (Lehman et al.), is a closed-world domain task, where "[t]he questions and answers typically are well-defined . . . and one can distinguish between good and bad answers" (Person et al. 185). In contrast, problem solving in writing, an open-world domain like many other humanistic and social science fields, is less concerned with single correct answers or predictable strategic moves than with often nebulous notions of effectiveness defined loosely by audience, purpose, and other incredibly variable rhetorical considerations. No coding scheme for tutoring strategies had yet been developed for tutoring open-world domains

such as writing, so we modified Cromley and Azevedo's detailed scheme to make it useful for studying the talk of writing center conferences.

As we discuss in further detail below, we augmented Cromley and Azevedo's scheme with Penelope Brown and Stephen C. Levinson's politeness theory and with Bruner and his associates' work on motivation and revised the scheme's categories based on recursive review of our discourse data and retrospective interviews with tutors. In its final version, our scheme allowed us to classify tutors' verbal strategies according to Cromley and Azevedo's three broad categories: instruction, where tutors do not scaffold but instead tell students what to do and explain answers; cognitive scaffolding, where tutors give students opportunities to figure out what to do on their own; and motivational scaffolding, where tutors provide encouragement. We applied the coding scheme to the 10 highest-rated conferences in our corpus of 51 previously video recorded and transcribed conferences and determined the frequency of tutoring strategies across the three categories. That analysis led us to describe each category in more detail. We found that tutors used instruction more often than scaffolding but that instruction in the open-world domain of writing is much more demanding than simply telling a student what to do. In fact, like cognitive scaffolding, instruction can open up writing's complexity even as it provides some boundaries to direct students' thinking.

A Brief Recap of Scaffolding

Bruner and his associates in cognitive psychology coined the term "scaffolding" in the mid-1970s. Reporting their observations of young children building block towers with help from an adult tutor, Wood, Bruner, and Ross discuss scaffolding as a "process that enables the child or novice to solve a problem, carry out a task, or achieve a goal which would be beyond his unassisted efforts" (90). They describe the tutor's responsibilities in the scaffolding process as recruiting the child's interest and maintaining his or her focus on building the tower, helping the child avoid and correct errors, simplifying the child's role in completing the task, keeping the child from becoming frustrated and anxious during work on the task, and modeling and explaining to allow the child to imitate the adult's expert strategies. In scaffolding, therefore, tutors concern themselves with motivation along with skill development.

As the educational psychology research of David Wood and David Middleton showed, scaffolding moves learners along in their thinking and their learning. Rather than studying tutors, Wood and Middleton observed mothers teaching their children how to build the same block tower. They concluded that mothers who based their teaching on their children's most recent responses and who concentrated their teaching within their children's "region of sensitivity to instruction" were the most likely to facilitate successful outcomes (181).

Described as "a hypothetical measure of the child's current task ability and his 'readiness' for different topics" (181), the region of sensitivity to instruction has become associated with Lev Vygotsky's zone of proximal development. The tutor can determine and assess the student's region of sensitivity to instruction by actively adapting the instruction to the student's responses; the tutor's move hinges on the student's. If the student responds incorrectly or appears to lose interest or confidence, the tutor offers more support; if the student is successful and interested, the tutor moves forward until the student can complete the task alone. As the student becomes better able to regulate his or her efforts independently, control of the process moves from external (the tutor's instruction) to internal (the student's self-instruction). Finally, when the student is able to perform the task without assistance, the tutor hands it over (Tharp and Gallimore) and fades, leaving the student to take charge (Puntambekar and Hübscher; Stone). According to mathematics education researchers Derek Holton and David Clarke, scaffolding not only assists students in solving immediate problems but also helps students learn the right way to ask questions and therefore "provide the basis for independent learning" (131). One-to-one tutoring remains a dominant topic of scaffolding research, but such research has not examined the open-world domain of writing tutoring. Our study helps fill this gap.

Method

In this section we discuss our study participants and their conference sessions, as well as our procedure for recording and coding tutoring strategies.

Conferences

We selected the 10 conferences used in this IRB-approved study from a corpus of 51 conferences that we video recorded and transcribed for related research on tutoring from 2005 to 2008 at Auburn University. While the writing center where these conferences were conducted typically offered 30-minute sessions, the 10 conferences we studied ranged from 17 to 40 minutes, totaling approximately 5.5 hours. We selected these 10 because participants evaluated them as above average or as very satisfactory in postconference surveys. We determined participants' level of satisfaction via two items on the postconference survey. One question asked the conference participants to rate their perceptions of the conference success on a six-point scale (1 = not successful and 6 = very successful). Five of the 10 students rated the conferences as 6 and five as 5 in terms of success; eight of the 10 tutors rated the conferences as 6 and two as 5 in terms of success. A second question asked students to rate their intent to implement ideas and advice from the conference discussion and asked tutors to predict the extent to which they thought students would implement

conference ideas and advice (1 = none and 6 = very much). Seven of the 10 students responded with 6 and three with 5; seven of the 10 tutors responded with 6 and three with 5. From these survey results, we concluded that both the 10 students and the 10 tutors were quite satisfied with their conferences.

Participants

All of the tutors were experienced, as all were in their second year or more of working in the writing center. All had completed a semester-long training practicum, and several were participating in the practicum again as assistant coordinators or as mentors for inexperienced tutors. Seven of the 10 tutors were graduate assistants teaching the courses that generated the assignments discussed in the conferences, though not the same sections in which the participating students were enrolled. The other three tutors were advanced undergraduates pursuing either English majors or English minors. All had overall GPAs of at least 3.5. The graduate students worked in the writing center without being screened, but the undergraduates had been rigorously screened—nominated by an instructor, interviewed, and required to provide a satisfactory writing sample and pass a proofreading test. Therefore, all of the tutors can be considered accomplished writers, strong students, and trained and experienced tutors. All ten tutors were non-Hispanic white. Seven tutors were female; three were male.

The 10 students in these conferences were all undergraduates enrolled in two university-required core courses, first-year writing and world literature. Two were African-American; the rest were non-Hispanic white. Three students were male; seven were female. All of the tutors and students were native speakers of American English. Certainly, such a restriction limits the applicability of our findings, and future research should include writing center conferences involving tutors and students who speak and write English as a foreign or second language, but such an analysis was beyond the scope of this project.

Procedure

To code our conferences for tutoring strategies, as noted before, we modified Cromley and Azevedo's coding scheme, refining it for writing center tutoring in three important ways. First, we differentiated between telling and suggesting strategies based on analysis of more- and less-direct language (Mackiewicz and Riley). Second, we separated as two strategy types what Cromley and Azevedo group together as hints. Our scheme identifies suggestions (i.e., direct-though-mitigated advice) and (true) hinting; therefore, it recognizes that suggestions such as "You could use a graph to present this data" offer advice (and thus are instructional strategies) and hints such as "Visuals often facilitate comprehension" prod thinking (and thus are cognitive scaffolding

strategies). Such a distinction is critical for coding writing center tutoring, where tutors offer mitigated yet clear advice. Third, we augmented scaffolding research with Brown and Levinson's politeness theory and Albert Bandura's research about self-efficacy.

We determined inter-rater reliability for our scheme by coding a subset of 60 tutor turns for tutoring strategies and then calculating Cohen's kappa, a statistical test useful for determining inter-rater reliability. One of the authors and a trained graduate assistant coded the conferences for tutoring strategies. Coders separately analyzed each conference and achieved 88% agreement on their coding; then, they met to examine the coding discrepancies. They discussed the discrepancies, examining the context of each code collaboratively and coming to an agreement on the best strategy code. The Cohen's kappa statistic was 0.717, a very good level of agreement—with .40 to .75 usually considered good, and over .75 considered excellent (Landis and Koch). Finally, for most conferences, we also video recorded retrospective interviews with the tutors. We played back the video recording of each conference and asked the tutor why he or she used certain tutoring strategies. These interviews informed our interpretations of tutors' most likely intentions.

Tutoring Strategies

As previously stated, we coded and analyzed three categories of tutoring strategies: instruction, cognitive scaffolding, and motivational scaffolding. Below we offer detailed descriptions of each strategy.

Instructional Strategies

Instruction includes telling (directive, with little or no mitigation) and suggesting (directive, with much more mitigation), when advising students about necessary or potential changes in a draft, outline, plan, or even the composing process itself. It also includes tutors' telling and suggesting ways of achieving the student's agenda during a conference and post conference. When telling and suggesting, tutors sometimes use explanations or examples to help student writers implement (and possibly, for tutors to justify) their advice. Indeed, instruction can diminish students' active participation in learning opportunities, possibly because it negates students' need to arrive at and explain ideas to themselves (Chi et al., "Self-Explanations"; Chi et al., "Eliciting Self-Explanations"). When tutors use instruction and tell students what to do, they have to ensure that in receiving such directiveness students can "save face," that is, avoid embarrassment and maintain control of their writing. Brown and Levinson delineate politeness strategies that help mitigate the face threat of directive advice, called negative politeness strategies, and research on writing center talk has focused mainly on these. Negative politeness strate-

gies, including modal verbs such as "could" and downgraders such as "maybe," "a little bit," and "just" help tutors (and others) suggest rather than tell (e.g., Mackiewicz, "The Effects," "Functions"; Thonus, "Dominance," "How to Communicate Politely"). Research on tutors' discourse has concluded that tutors' goals to be both clear and polite sometimes conflict, that politeness sometimes generates ambiguous advice (Thonus, "Dominance," "How to"), and that tutors' expertise (and, likely, the confidence it brings) may encourage the use of negative politeness strategies as well as positive politeness strategies—strategies such as praise, joking, and optimism—that signal solidarity and rapport (Mackiewicz, "The Effects" 322).

As readers of *Composition Studies* know, early advice for writing center tutors opposed directiveness, but such advice was not informed by empirical research on politeness or on instruction's impact on learning. To honor the peer relationship between tutors and students, along with the practical concern of negating teachers' worries about plagiarism (Clark and Healy), writing center tutors were to avoid usurping control of students' writing by avoiding directiveness—telling and suggesting (Ashton-Jones; Brooks). Tutors were to help students improve their composing processes, rather than tell them how to improve a particular draft or respond to a particular assignment (Harris; Healy; North). In addition, if they disregarded prevalent sentiments about "good" tutoring and turned their focus from process to product, they were to refrain from telling by drawing upon students' existing reservoirs of knowledge (i.e., by using scaffolding strategies). It is important to note that empirical research has since found that tutors mainly ignore the proscription against instruction and that students actually welcome and expect tutor directiveness, so long as they control the conference agenda (Clark; Davis et al.; Thonus, "Triangulation," "Tutor and Student Assessments"; Wolcott). Thus, writing center specialists more and more acknowledge the need for tutors, as more expert institutional representatives, to offer advice (Kiedaisch and Dinitz; Mackiewicz, "The Effects"; Shamoon and Burns; Trimbur).

In our study, instruction comprised three strategies:
- Telling: Tutors use little to no mitigation to direct students in revising or brainstorming ideas and in pointing out errors or problems (e.g., "Put it in there, at the beginning of that one."). Tutors also use little to no mitigation to direct students in improving their composing processes (e.g., "Make sure they all relate back to that thesis as well.").
- Suggesting: Tutors use more mitigation, thus lowering the face threat of their advice. They often use negative politeness (e.g., "But since the focus of the paper is law enforcement, you probably want to bring it back to law enforcement here.").

- Explaining and exemplifying: Tutors offer reasons for and illustrate their advice (e.g., "Because you're saying, you know, they cause their life to be or feel meaningless. And it seems like from what we talked about here you're going to say, like, however, in *Notes from the Underground*, the author does show that there's hope for a better life.").

Cognitive Scaffolding Strategies

Cognitive scaffolding includes strategies such as pumping questions (e.g., "What's another possibility here?") that prod and help students to think. These strategies range in the extent to which they constrain student responses (Boyer et al.; Lehman et al.). For example, a pumping question such as "What's another possibility here?" allows for a wider range of student responses than a question such as "Do you know what part of speech this is?" However, no matter the extent to which cognitive scaffolding strategies constrain students' responses, through the turn-taking "rules" of conversation, they—unlike other strategies—require responses (for example, by providing an answer to a question) (Thornbury and Slade). In prodding student responses, cognitive scaffolding strategies create opportunities for students to construct and connect ideas and to display what they do not know and understand.

A predominant form of cognitive scaffolding, pumping often occurs in the form of questions. Two such categories are information-seeking questions, also called negotiatory or open questions (Severino; Smith and Higgins), and known-information questions, also called closed, display, or leading questions (Nassaji and Wells; Piazza). Research on questions in classroom teaching has shown that the Socratic method—back-and-forth questions and answers—is a more effective teaching strategy than uninterrupted instruction (Rose et al.; see also, Kintsch; Tienken, Goldberg, and DiRocco). Along with encouraging active participation in learning (Lustick; Smith and Higgins), cognitive scaffolding (i.e., pumping) questions help students formulate explanations for themselves (Chi; Chi et al., "Eliciting Self-Explanations"; Chi et al., "Self-Explanations"; Rose et al.; Smith and Higgins). Further, tutors' questions can model effective questioning and thus can help students develop self-scaffolding strategies.

In a recent study of writing center talk, we identified and classified tutors' questions in 11 conferences (Thompson and Mackiewicz). We found that 33.6% of tutors' 690 questions were known-information questions. In contrast, only 8.7% were genuine information-seeking questions. Another 33.5% were motivational scaffolding questions that showed the tutors' concern for students' understanding and ownership (e.g., "Does that make sense?"). We found that tutors sometimes moved from known-information to information-seeking

questions, giving a student an opportunity to take control after pointing the student in a potentially successful direction.

Eight tutoring strategies composed our cognitive scaffolding category:

- Pumping: Tutors withhold their advice or part of the answer. Pumping can be constraining (e.g., "Where does the comma go in this sentence?") or open ended (e.g., "What does the poem mean to you?"). We included leading questions in this category because they can act as pumps for thinking and require at least minimal responses from students (e.g., "Isn't this change in topic a good spot for a paragraph break?").

- Reading aloud: Tutors read sections of students' drafts aloud so that students can hear what they have written. In addition, tutors read teachers' assignment sheets aloud to help students understand the writing requirements better and to model the sort of word-by-word attention to detail required for understanding assignments. For example, a tutor might read aloud the gist of the assignment from the instructor's explanatory handout (e.g., "You must state your position on an issue and convince your reader that your position is correct."). Tutors also ask students to read their drafts aloud to identify errors and passages that need revision and to teach students a strategy they may use after they leave the writing center.

- Responding as a reader: Tutors read a section from a draft, either aloud or silently, and then tell students what they take away as readers. They paraphrase what they think students are saying in order to help them compare tutors' paraphrases with their intended meaning (e.g., "You say that, you know, this is the way I like it because it's suitable to my needs in getting things done.").

- Referring to a previous topic: When tutors see that students are making the same error or having the same problem in several places in a draft, they refer the students back to the earlier occurrence to help them identify the problem and practice the previously discussed revision or correction strategy (e.g., "And then, T-O-O, 'too good.' Again, like we talked about in the beginning.").

- Forcing a choice: Tutors present students with several alternatives, one of which is correct, and expect students to choose the correct alternative. Forcing a choice constrains, and therefore directs, students' responses to increase their chances of success (e.g., "Now, 'the boys tell their friends,' or 'the boys tells their friends'?").

- Prompting, hinting, and demonstrating: These strategies rarely occurred in our writing center data (see Chi for further discussion of these strategies in closed-world domain tutoring).

Motivational Scaffolding Strategies

Intertwined with both cognition and affect, motivation influences students' effort, persistence (Bransford, Brown, and Cocking), and their active participation and engagement in the conference (Evens and Michael). Motivation influences and is influenced by students' interest in the tasks they are performing, their self-efficacy in successfully completing those tasks, and their ability to self-regulate their performances (Hidi and Boscolo; see DeCheck for a discussion of motivation in writing center tutoring based on a slightly different theoretical perspective). Individual interest, associated with intrinsic motivation, is likely to increase learning both within and beyond the tutorial conference (Bye, Pushkar, and Conway; Lepper and Henderlong). Self-efficacy (Bandura; Pajares and Valiante; Shell, Murphy, and Bruning) and self-regulation (Zimmerman; Zimmerman and Kitsantas; Zimmerman and Schunk) are mutually dependent, with self-efficacy (roughly analogous to self-confidence) known to influence effort, persistence, and activity choice and with self-regulation relating to organizing a task and managing task completion, including finding help if needed. In short, by increasing students' interest, self-efficacy, and self-regulation, motivational scaffolding has the potential to make an impact on students' learning.

Tutors can enhance students' motivation by helping them feel comfortable and supported (Bruning and Horn) and can build, even in a short time, feelings of rapport and solidarity through certain politeness strategies, particularly positive politeness strategies (Brown and Levinson). The strategies we categorize as motivational scaffolding provide encouragement in a variety of ways.

Studies of positive politeness in writing center conferences are less common than studies of negative politeness. However, one study found that tutors use the plural pronoun "we" to include both conversation participants in the activity (Murphy). Another study showed that when working with the same student over a six-week period, some tutors increasingly relied on positive politeness, such as inclusive language and praise (Bell, Arnold, and Haddock), likely because they had built a measure of rapport. Other research has suggested that students' perceptions of their comfort during conferences strongly correlate with their overall conference satisfaction (Thompson et al.; Thonus, "Tutor and Student Assessments") and with their willingness to return for future conferences (Carino and Enders).

Our scheme captures five types of motivational scaffolding:

- Showing concern: Tutors build rapport with students by demonstrating that they care. Such demonstrations of concern can be formulaic, as when a tutor asks about a student's understanding with a collocation (e.g., "Does that make sense?") or nonformulaic, as when a tutor attends to a student's emotional well-being (e.g., "You're feeling less overwhelmed now that you've found it's not hard at all?").
- Praising: Tutors point to students' successes with positive feedback and verbal rewards. Praise, too, can be formulaic (e.g., "That's good.") and nonformulaic (e.g., "I think it has a subtlety to it, which is . . . very nice. And I think that's a difficult thing for lots of students to achieve in their writing.").
- Reinforcing students' ownership and control: Tutors increase students' developing self-regulation and self-efficacy by asserting that the student ultimately makes the decisions (e.g., "Well, I mean . . . that's something that is ultimately up to you.").
- Using humor and being optimistic: Tutors reduce students' anxiety with light-heartedness and build confidence by asserting a student's ability to persevere in the task. (For example, a tutor used self-deprecating humor when jotting down a note: "Uh, consequences for your actions. Wrong and right. Whatever. I can't spell consequences.").
- Giving sympathy and empathy: Tutors express their understanding that the task is difficult (e.g., "And it's a difficult thing to analyze senses.").

Overall Results

We calculated the frequency with which tutors used the tutoring strategies in the instruction, cognitive scaffolding, and motivational scaffolding categories. Tutors used 31.16 strategies each 10 minutes of interaction—or, just over 3 strategies per minute. Clearly, the tutors in these successful conferences saturated their sessions with strategies and moved among the three types of strategies. But of the three strategies, tutors used instruction far more often than either cognitive or motivational scaffolding: in fact, instruction occurred on average 13.86 times per 10 minutes. Nearly half (45%) of tutors' total tutoring strategies fell into the instruction category. This finding suggests that tutors saw or sensed the utility in telling, suggesting, and explaining and exemplifying what students should do. In contrast, tutors used an average of 10.54 cognitive scaffolding (34%) and 6.76 motivational scaffolding (22%) strategies each 10 minutes. Table 1 shows the frequency distribution across the three categories.

Table 1. Frequency and Percentage of Tutoring Strategies per 10 Minutes.

Tutoring Strategy Category	Frequency	Frequency per 10 Minutes (% Total)
Instruction	438	13.86 (45)
Cognitive scaffolding	326	10.54 (34)
Motivational scaffolding	214	6.76 (22)
Total	978	31.16 (100)

Another main finding from this study was that tutors used four strategies from across the three categories far more frequently than the other types: telling (instruction), pumping (cognitive scaffolding), suggesting (instruction), and showing concern (motivational scaffolding). Table 2 shows the frequencies and percentages; it reveals that tutors used about the same percentage of pumps and suggestions (each comprising 18% of tutors' total strategies).

Table 2. Frequency and Percentage of Tutors' Most-Frequent Strategies.

Tutoring Strategy Type	Category	Frequency per 10 Minutes (% Total)
Telling	Instruction	5.97 (19)
Pumping	Cognitive scaffolding	5.91 (18)
Suggesting	Instruction	5.68 (18)
Showing concern	Motivational scaffolding	3.32 (11)
Other strategies	All categories	10.28 (34)
Total		31.16 (100)

As Table 2 shows, tutors were directive in telling and in offering suggestions about what to do, but they balanced that instruction with cognitive scaffolding attempts to get students to consider and reconsider the content, form, and process of their writing, as well as with encouragement—signals that they cared about students' comprehension and well-being (motivational scaffolding). With these four most-frequent strategies, the tutors varied their pedagogical approaches to create conferences that both they and their student clients considered successful.

Instruction: Close Analysis

Tutors used telling and suggesting to relate targeted advice about what students should or could do to improve their drafts or make their composing processes more efficient.

Table 3 breaks down the frequency with which tutors used telling, suggesting, and explaining instructional strategies. (Exemplifying strategies were very rare.) The tutors employed the instructional strategies of telling and suggesting with about equal frequency per 10 minutes but typically did not provide the related explanations and examples. Based on early practitioner advice, the tutors should have avoided telling and suggesting strategies, practicing what Brooks and others call nondirective tutoring. Instead, like Terese Thonus ("Tutor"), we found that tutors advised students on their draft papers, the assignments students brought with them, as well as the writing process.

Table 3. Frequencies and Percentage of Instruction Strategies per 10 Minutes.

Instruction Type	Example	Frequency per 10 Minutes (% Total)
Telling	"Try to take that 'it' out."	5.97 (43)
Suggesting	"But since the focus of the paper is law enforcement, you probably want to bring it back to law enforcement here."	5.68 (41)
Explaining	"Because see, something like this. This is kind of an example. Right here where you say 'I was not used to sitting with girls at lunch anyway.' That's a reference to your private to your public school."	2.21 (16)
Total		13.86 (100)

By telling rather than suggesting, tutors risked imposing their views on students. Perhaps these experienced tutors believed that their institutionally superior role and their greater expertise obligated them to dispense advice as unambiguously as possible. Even the undergraduate tutors—who had never assumed the institutionally defined role of "teacher" and were closer in age to the student writers—did not hesitate to use telling instructional strategies. But, as noted before, the students had rated the conferences highly, suggesting that they took no offence to tutors' instruction and may even have preferred the unambiguous advice.

Based on the difficulty of and the amount of time required for students to enact their advice, we surmise that tutors provided instruction intended for after the conference. That is, tutors expected students to think through both major and, in many cases, sentence-level revisions on their own. Although Thonus

("Dominance") distinguishes between advice that tutors expect students to implement during conferences versus after conferences, we could not reliably distinguish between these two types: often tutors pointed out a problem (for example, misused punctuation) likely with the intent that the students should both revise immediately and also look for similar problems post conference. For example, Tutor 8 (T8) indicates with "just so you know" that she expects the student to look for other misused semicolons other than the one they have discussed and to correct them after they have finished up the conference: "OK. Just so you know, after you have a semicolon, here, this is a fragment. You need a full sentence." This distinction allows us to see how instruction—despite its controversial history in writing center scholarship—can lead to thoughtful and engaged student participation in the composing process, participation that has often gone unnoticed in studies of writing center interaction.

Because in some cases students must apply tutors' advice post conference, even at its most directive, tutors' instruction can lead to thoughtful and engaged participation in the composing process—if not during their conferences, then after. For example, T9 brainstormed with Student 9 (S9) about ways to respond to a world literature assignment:

> T9: OK. So we will call this A. Well, A is obviously going to be your thesis, but I would not really try to start the thesis especially in this type of a paper. Don't write your thesis until you've written your paper. Because it is kind of an exploratory paper, and he [the instructor] does kind of say, you know, um . . . where did it go? [Referring to the assignment sheet.] Oh yeah, "The debatable question to be explored." Since it is exploratory, just start writing the paper and then go back and write your thesis.

Several times, T9 told the student what to do ("I would not really try to start the thesis ..." and "Don't write your thesis until you've written your paper"). She also explained her advice ("Because it is kind of an exploratory paper..."). With this instruction, T9 provided composing strategies that S9 could apply to future writing assignments.

Cognitive Scaffolding: Close Analysis

One of the hallmarks of one-to-one tutoring across all disciplines is the opportunity to move away from instruction to a more Socratic teaching style that is difficult to practice in the classroom. Cognitive scaffolding probes students' thinking and gets them to answer questions or perform tasks they cannot perform without scaffolding support. Table 4 shows that tutors used pumping more often than any other cognitive scaffolding strategy. In fact, they used it more often than all of the other cognitive scaffolding strategies combined.

Table 4. Frequency and Percentage of Cognitive Scaffolding per 10 Minutes.

Cognitive Scaffold Type	Example	Frequency per 10 Minutes (% Total)
Pumping	"So why, why do you think it's, it's effective?"	5.91 (55)
Reading aloud	[Reading from the student's paper.] "'The estimated total number of people living in the U.S. with a viral STD is over 65 million. At least 25 percent of them were teenagers.'"	2.18 (23)
Responding as reader	"I mean, this paragraph is saying any case. But you're specifically saying in the case of law enforcement."	1.27 (11)
Referring to a previous topic	"Well, that the absurdity in itself is that, like, I mean what you said in the very beginning."	0.54 (5)
Forcing a choice	"Would it be easier for you to talk about like, this is how the underground man represents, you know, the meaningless of life, or do you think it would be easier to talk about the story, like, more generally?"	0.40 (3)
Prompting, hinting, demonstrating	"So if you were to, you know, if you were to say "*Cosmo Girl* targets… what?" (prompting) [Used to get the student writer to see that there is more to "punishment." The student elaborated afterwards with "Oh, like, right and wrong."] "So it also demonstrates punishment. Just punishment in general." (hinting) [Used when showing a website exemplifying APA citations.] "Like this. They give you like 'You should have a cover page that does this.' That we don't want you to pay attention to. (demonstrating)	0.24 (3)
Total		10.54 (100)

The following excerpt exemplifies how tutors used cognitive scaffolds, especially pumps, to prod students for their ideas. T4 leads off with instruction, a suggestion ("And so maybe you want to talk about both relationships"), and then moves to pumping questions that set boundaries on a potential response:

T4: And so maybe you want to talk about both relationships. Like
the comments between both the king and queen cockroaches
[and then also the comments that happen
S4: [Mm-hmm
T4: between the husband and wife. [What's a another possibility here?
S4:   [OK.
T4: Besides the dinner party. Is there another?

Throughout this conference and in the dialogue excerpted above, T4 brainstormed with S4 to develop ideas for her essay, turning to pumps to help S4 generate ideas: "What's another possibility here? Besides the dinner party. Is there another?" Although these pumps opened the conversational floor to S4, they also established clear boundaries for S4's response. T4 pumped S4 for a short response, another specific example (besides the dinner party example). With constraining pumps, T4 facilitated an easy and fast response from S4 in order to continue her data gathering about relationships in one of the two short stories that S4 analyzed for her essay.

While it appeared that open-ended pumps were the ones that had the greatest potential to stump students, the following excerpt shows that student writers, at times, had difficulty formulating responses to constrained pumps as well. It also shows how an experienced tutor can salvage such a situation by moving to another strategy, in this case, a forced-choice strategy:

T7: [Reading draft (whispering) and then speaking aloud to the student]
OK. Now here you have a—Do you know what part of speech this
is?
S7: What part of speech?
T7: Uh huh. Subject, verb, preposition. Multiple choice.
S7: OK.
T7: Which one do you think?
S7: Uh. That would be a verb?
T7: Well, actually, I meant choice A, subject. Choice B, preposition. So
a preposition "from." You begin with that preposition [and
S7:   [Right.
T7: you end with the object of your preposition is"basketball." So a
good thing to do [would be to put a comma [there because you put
S7:   [Right.   [OK.
T7: a comma after an introductory four-or-more-word prepositional
phrase.

T7 began with a constraining pump question: "Do you know what part of speech this is?" Although the literal answer is either "yes" or "no," the student,

like most first-language American English speakers, moved to the intended question: "What part of speech is this?" This highly constrained pump has only one answer. However, S7 did not understand, so T7 adapted by switching to the forced-choice strategy—a strategy of providing alternatives. When S7 guessed incorrectly ("Would that be a verb?"), T7 provided the answer and moved on quickly to his real point: commas after introductory phrases. This excerpt not only points to the difficulties students can have when tutors use pumps to ask test-type questions (questions to which they know the answer already) but also to the importance of contingency, a tutor's ability to adapt to rather than get beyond a student's response.

As the excerpt above shows, cognitive scaffolding strategies exist on a continuum of open to constrained. At their most constraining, they solicit answers easy to identify as correct or not correct, and they often have single correct answers. Other than the requirement for a response, they appear, in spirit at least, similar to instruction. At their most open, cognitive scaffolding strategies lead to a wide range of possible responses. But they can also demand so much effort that students have difficulty responding at all.

Motivational Scaffolding: Close Analysis

In a prior study, we described how writing tutors used motivational scaffolds to encourage students to think about their writing and to continue their efforts after the conference (Mackiewicz and Thompson). We delineated how motivational scaffolds correspond to politeness strategies and thus how they help tutors attend to the affective component of tutoring. Like positive politeness, motivational scaffolds can generate rapport and solidarity. As Table 5 indicates, tutors used the showing concern strategy more frequently than all the other motivational scaffolds, followed at a distance by praising.

Table 5. Frequencies and Percentage of Motivational Scaffolding per 10 Minutes.

Motivational Scaffolding Type	Example	Frequency per 10 Minutes (%)
Showing concern	"Do you see what I mean?" (formulaic) "OK. So what do you feel like at this point?" (nonformulaic)	3.32 (49)
Praising	"That's good." (formulaic) "And I think that your paper does a nice job of, of trying to explain you know, that that independence let you go out and do these other things and perhaps to see the world in a different way." (nonformulaic)	1.53 (23)

Motivational Scaffolding Type	Example	Frequency per 10 Minutes (%)
Reinforcing ownership and control	[Used after the tutor and student have revised a sentence.] "And you are still saying everything you were saying. Everything you wanted to say."	0.76 (11)
Being optimistic or using humor	"But they're politicians. What do you expect?"	0.60 (8)
Showing empathy or sympathy	[Used after reading about the student's school experiences.] "Goodness gracious! What kind of school was this? These people sound terrible."	0.55 (8)
Total		6.76 (99[a])

[a] The percentage total equals 99 rather than 100 because of rounding.

Tutors used both formulaic and nonformulaic demonstrations of concern, but the latter seemed to do even more interactional work than their formulaic counterparts. Because tutors created these nonformulaic strategies on the fly, the strategies were targeted and individualized; thus they even more clearly did the positive politeness work of showing tutors' attentiveness to students and their well-being. For example, T4 checked in on S4's state of mind about two-thirds of the way into the conference to determine whether the student could tolerate another conversational topic:

> T4: OK. So what do you feel like at this point? Like, before you leave, I feel like we kind of need to get you a working thesis.
>
> S4: Mm-hmm.

T4's preference clearly was to keep the conference going so that the two of them could develop a viable thesis statement; however, T4 also seemed to recognize the potential for the student to become overwhelmed if she took on yet another task. With her question "So what do you feel like at this point?" T4 gave S4 an opportunity to opt out of continuing, prioritizing the student's well-being and goodwill over her own preferences for the conference agenda. Thus, she used motivational scaffolding to adapt her tutoring to what the student could tolerate at that time. Nonformulaic demonstrations of concern like this one allowed tutors to target their assessments of students' states of mind—potentially gathering more information than a formulaic "you know?" or "see what I mean?" might generate.

Conclusion

Examining scaffolding and instruction helps us better understand the talk that goes on in writing centers. The tutors in this study used a range of tutoring strategies to help students move forward in completing tasks and developing expertise. They most often used the instructional strategies of telling and suggesting, the cognitive scaffolding strategy of pumping, and the motivational scaffolding strategy of showing concern.

Like most research, our study has limitations. First, as previously stated, all of the conferences we analyzed involved tutors and students who spoke American English as a first language. Our participants do not represent the diversity common in and embraced by writing centers. Research about scaffolding infrequently examines its usefulness for learning in cultures other than Western ones (see Williams for an exception). Second, although we speculate about students' responses to tutors in our excerpts, we focus primarily on tutors' talk, forefronting tutors' verbal strategies (see Cazden; Mehan; and Nassaji and Wells for studies with similar goals). These limitations may provide goals for future investigations of scaffolding.

Our findings support those from others concluding that, regardless of the angst sometimes associated with directiveness, tutors often directly (via telling) and indirectly (via suggestions) provide advice. However, unlike early and fairly simplistic predictions of negating learning opportunities or taking control from students, our analysis reveals that these experienced tutors used instruction in complex and sophisticated ways. For example, as we examined above, some tutors provided instruction for students to implement after the conference. Further, tutors sometimes followed instruction with pumping to stimulate students' thinking and to require at least minimal participation in conferences. Also, tutors sometimes ended an instructional sequence with a motivational scaffolding question such as "Do you understand?" Although research shows that students are often unable to gauge their own comprehension (Graesser and Person), such questions provide opportunities for students to at least consider the extent to which they understand and also encourage dialogue. Rather than shutting down students' thinking by providing an answer, these tutors opened up possibilities, providing new directions for students to pursue during and after conferences.

In addition, instruction may be important for developing rapport with students. If, as other writing center studies conclude, students expect tutors to be directive, instruction may be important for building students' trust, maintaining students' attention, and encouraging students' active participation in conferences. Indeed, research has shown that getting their questions answered highly correlates with students' conference satisfaction (Thompson

et al.). Finally, Thonus ("Dominance") postulates that tutors who give instruction may in some cases signal solidarity through implying equal status with students. In a study of directive language that examined the variables of gender and first-language American English proficiency, Thonus found that males who spoke American English as a first language received the most advice. She speculates that tutors' willingness to offer advice may have been "an expression of solidarity rather than dominance, if these males [were] considered more powerful (and thus more deserving of assistance)" than females who spoke American English as a first language as well as males and females whose first language was not American English (241). Hence, the use of instructional strategies may indicate that, as institutional representatives, tutors act on what they perceive as a symmetrical (or near symmetrical) relationship with certain students. If this interpretation is correct, early advice about writing center tutoring is not only incorrect but possibly works against rapport building and conference effectiveness.

Along with problematizing instruction and directiveness in writing center conferences, our study demonstrates the complexity of adapting in light of students' responses, an essential aspect of scaffolding. These 10 experienced tutors skillfully adapted their tutoring to students' responses. However, even though our data show tutors moving on, fading, after they instructed students on discrete issues related to style and correctness and occasionally after developing ideas during brainstorming, we did not see the students taking over and controlling the writing tasks. Instead, tutors handed over the tasks because the conference ended. To add further complexity, as shown in the excerpt of T9 and S9, instruction and scaffolding can continue after the conferences end without the tutor being physically present.

Our analysis reveals a great deal about the frequencies with which our tutors used instructional and scaffolding strategies and about combinations of those strategies. However, perhaps its greatest research contribution is the detailed descriptions of instruction, cognitive scaffolding, and motivational scaffolding required to develop the coding scheme. First, the descriptions provide a rigorous, data- and theory-driven framework for future research about instruction and scaffolding in writing centers and for discussions of these strategies in training practicums. Second, the meager research about scaffolding in the teaching of writing uses the brief and unrefined descriptions from Wood, Bruner, and Ross's and Wood and Middleton's articles from the 1970s. We used more recent research that draws on Wood, Bruner, and Ross's germinal study but takes into account the many studies of scaffolding conducted since the 1970s. Our study has been theoretically influenced by research in cognitive psychology, which also influenced Linda Flower and John R. Hayes's view of writing as a process (see Carter for a discussion) and research in linguistics (Brown

and Levinson). Since the late 1980s, writing studies has moved almost entirely away from research influenced by cognitive psychology, with its connection to education, and from research in linguistics, with its concern for detailed and replicable descriptions of language in use. We are not arguing that research in cognitive psychology or that linguistic descriptions alone provide adequate ways of discussing writing; however, we do argue that research inspired by cognitive psychology (as well as social psychology) and linguistics can yield important theoretical and methodological insights.

Finally, this study highlights the importance of extensive tutor training in writing centers. Our experienced tutors obviously drew from a range of cognitively taxing and complex strategies as they worked with students. They appeared to have internalized their strategies and were able to draw on them quickly and with flexibility as the tutoring situation warranted and according to the responses from students. Developing this range of strategies requires both knowledge and practice. The descriptions of tutoring strategies we provide can help build this knowledge. By discussing and practicing these strategies in role-playing scenarios, inexperienced tutors may be able to internalize them and draw on them in the confusion of conferences. Further, if writing center directors audio or, preferably, video record and review conferences, they can comment upon tutors' appropriate use of strategies in tutors' evaluations. Hence, writing center directors can instruct and scaffold tutors in how to instruct and scaffold students.

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